ASTRONOMICAL

AND

METEOROLOGICAL OBSERVATIONS

MADE DURING

THE YEAR 1870,

AT THE

UNITED STATES NAVAL OBSERVATORY.

REAR-ADMIRAL B. F. SANDS, U. S. N.,
SUPERINTENDENT.

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REPORT OF THE SUPERINTENDENT OF THE OBSERVATORY TO THE CHIEF OF THE BUREAU OF NAVIGATION.

UNITED STATES NAVAL OBSERVATORY,
Washington, October 10, 1870.

COMMODORE: On the 28th ultimo I had the honor to submit estimates for the support of the United States Naval Observatory for the fiscal year ending June 30, 1872. I beg leave now to present a report of the operations of that establishment during the past year.

ASTRONOMICAL WORK.

The Equatorial Instrument.—The observers with the Equatorial Instrument during the past year have been Professors Simon Newcomb and Asaph Hall. Professor Newcomb's attention has, however, been given chiefly to the "Theory of the Moon," and most of the observations have been made by Professor Hall. These consist, as usual, of observations of the minor planets, of comets, and occultations. The telescope of the Transit Circle possessing nearly the same optical power as the Equatorial, very few observations of the older asteroids are now made with the Equatorial, except occasionally to determine the error of an ephemeris. In the case of a newly discovered planet, the observations are continued as long as possible.

The observations of the stars in Præsepe have been concluded, and a catalogue of 151 stars in this group has been made and published.[1]

The New Equatorial.—Congress at its last session authorized the Superintendent to contract for a telescope of the largest size, of American manufacture. Messrs. Alvan Clark & Sons, of Cambridgeport, Massachusetts, considered the best opticians of this country, have been selected for the work; and they contract to furnish one for this Observatory, of twenty-six inches aperture, being one inch greater than the famous telescope lately completed in England for Mr. R. S. Newall, of Gateshead, and which is at the present time the largest refractor in the world. The work is now in hand, and is expected to be finished in four years. The second payment will be required during the next fiscal year, and the sum of $10,000 is inserted therefor in our estimates.

The Transit Circle has, since last January, been under the charge of Professor William Harkness, United States Navy, assisted by Professor J. R. Eastman, United States Navy, and Mr. Edgar Frisby, aid. On March 28, Mr. Ormond Stone was appointed aid, and he also was assigned to duty as an assistant on this instrument. At the time Professor Harkness took charge, the instrument had been mounted in the new west wing, but there were many things to be done in order to fit it for use, and it was not till February 2 that the first observations were made. From that time until August

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[1] Washington Observations for 1867, Appendix IV.

15, the instrument was in constant use, and 2,038 observations were made on the sun, moon, planets, and a selected list of the fixed stars. In addition, the usual determinations of instrumental constants were made twice a day.

Congress having made an appropriation for regrinding the object-glass, it was, on August 16, removed from the instrument and sent to Alvan Clark & Sons for that purpose. The instrument has been dismounted, awaiting the return of the object-glass, and advantage has been taken of this opportunity to direct Mr. Gardner, the instrument-maker at the Observatory, to make a much needed alteration in its eye-end.

On the 10th of January, the Kessels sidereal clock, which is used in connection with the Transit Circle, was removed from its position in the basement to the vault in the new clock-room in the west wing.

The wires necessary to include it in our telegraphic system were at once attached to it in its new position, and it was in use up to the time that the object-glass of the Transit Circle was sent away.

The new west wing, erected for the Transit Circle since my last report, is a decided improvement, and gives us great hope of its success as the best form of observing-room for purely astronomical purposes. To this time it has answered all our expectations, and only requires the coming winter to test its completeness.

Transit Instrument and Mural Circle.—Professor M. Yarnall, United States Navy, has had the charge of these instruments. He continued to observe with the former until the end of the past year, leaving Mr. Doolittle, aid, to work, as previously, with the Mural Circle. Mr. Doolittle resigned in January, and Mr. A. N. Skinner was appointed aid in his stead, and reported about the 1st of April. After the 1st of January, Professor Yarnall observed with both instruments, as occasion required, but confined his attention mostly to the Mural Circle, and observed a large number of stars whose declinations were partially or wholly unobserved, which places were necessary to fill up the hiatus in the general catalogue. Mr. Skinner has observed with the Transit Instrument, with occasional assistance from Professor Yarnall when he could spare the time from the Mural Circle. We have now nearly finished our star-lists, and by the middle of the next year they will be completed. All stars observed after that time will have to go into a subsequent catalogue, and it will be desirable to commence the publication of the general catalogue as soon thereafter as possible, when a larger force will be required for computing and copying.

Since my last report Professor Yarnall has finished preparing for publication the observations made with the Transit Instrument during the year 1868, that work being now in press. Captain Whiting assisted in copying the observations of that year, and Professor Nourse in comparing with the original records work already copied. Mr Frisby, aid, prepared a list of the mean places of the stars. Professor Yarnall also finished computing and reducing the observations made in 1869 with the same instrument; all of which observations and reductions are being copied from the record-books by Mr. Thomas Harrison, clerk, this work being in addition to his other duties. After a list of mean places shall have been made, the entire work of the instrument will be ready for the printer.

Professor Yarnall is now engaged in reducing the observations made in 1870 with the Mural Circle, and has more than half the year's work reduced, having been delayed by severe sickness caused by malaria, so prevalent this year at the Observatory. Mr. Skinner is engaged in reducing the observations made with the Mural Circle in 1869. This work will be ready in time for publication, it being now copied upon sheets for that purpose.

Captain Whiting and Professor Beecher were employed in preparing and copying the observations for publication. Professor Beecher (retired) being relieved from duty under the order of the Department relating to retired officers, I have inserted in the estimates the sum of $1,200, that the work of copying may be kept up.

Telegraphic Apparatus and Connections.—The electro-magnetic and telegraphic apparatus connected with the Observatory is under the charge of Professor Harkness, assisted by Mr. Gardner, and has worked well.

There are three lines of telegraph running out of the building. The first line runs to the Navy Department, where it controls a clock, which is made to beat in unison with the marble-case mean-time clock of the Observatory. Correct time is thus furnished to the Department, the working of the apparatus continuing in all respects satisfactory.

The second line of telegraph runs to the Washington Fire-Alarm Telegraph Office. It puts the Observatory in connection with the fire-bells, and is used to furnish correct time to the city by striking them daily at 7 a. m., 12 m., and 6 p. m.

The third line of telegraph belongs to the Western Union Telegraph Company, and is a loop from the wire which they designate as No. 7 south. By means of it are distributed the time-signals which serve to regulate the clocks of nearly all the railroads in the Southern States. In November the mean-time clock, by which these signals are sent, was taken down, its movement cleaned, its dial resilvered, and a new telegraphic connection for its pendulum attached. Since then it has been running remarkably well.

The Western Union Telegraph Company have continued their kindness, frequently shown us in this way, by giving us the free use of their wires to determine the difference of longitude between this city and Saint Louis. Signals were exchanged on four nights between April 12 and April 30, and they place the station near the southwest corner of Washington University, at Saint Louis,

$$0^h\ 52^m\ 36^s.91 \pm 0^s.015$$

west of the center of the dome of the Observatory. This work was done at the request of, and jointly with, the United States Coast Survey; the observations and reductions at Saint Louis being made by their officers, and the observations and reductions at Washington by the officers of the Observatory.

Meteorological Observations.—Professor J. R. Eastman, in addition to his other duties as observer, has charge of the meteorological department of the Observatory.

The observations have been made at certain hours through day and night, as in previous years, and with the same instruments, by the watchmen, under the direction of the officer having charge of the work. Extra duty during a portion of the year, in the astronomical department, has prevented the desired progress in the preparation of the observations of 1868 and 1869 for the press. The work for those years is about half completed.

There is still a lack of proper instruments and accomodations, and I earnestly request that the appropriation asked in 1869 for meteorological instruments may be urged for this year, that we may keep pace with the improvements of the age made in Europe and in the private observatories of our own country.

Chronometers.—In the chronometer-room there are 138 chronometers; all of which are ready for issue, with the exception of 11, which, having been repaired and cleaned within the last three months, are now under trial. During the year, 62 chronometers have been issued to vessels of the Navy fitting for sea; 23 have been sent for cleaning and repairs; and 6 were loaned to the Coast Survey for use in the exploration of the Isthmus of Darien.

The chronometers made by Messrs. Negus, of New York, have given great satisfaction. They are extremely accurate as time-keepers, and are less affected by changes of temperature than other chronometers.

A history of the chronometers from the date of manufacture and purchase—a system of records lately adopted, and very desirable to enable us to determine the degree of reliability to be attached to each instrument and to give data for their adjustment—is progressing to completion, after which it will be less trouble to keep up the record to date, if the Department can detail officers for the purpose.

Commander W. N. Jeffers, in charge of the chronometer-room, was detached from the Observatory in November, 1869; since then Commander J. Young has had charge to the 1st of October, when he was detached, as was also his assistant, Commander W. C. West, (retired,) leaving Commander S. L. Breese in charge, assisted by Lieutenant-Commander Theodore F. Jewell.

The following officers have been on duty as assistants in the chronometer-room, namely: Lieutenant Commander Charles McGregor, from April 26 to August 17, 1870; Lieutenant Commander W. W. Maclay, from February 14 to 19; Master (Lieutenant) Frank Turnbull, from October, 1869, to August, 1870; Ensign (Master) R. Clover, from October, 1869, to March, 1870; Ensign C. W. Jarboe, from March to July; and Ensign J. W. Carlin, in June and July, of the present year.

It is to be hoped the Department will be able to continue the detail of younger officers, who are to be navigators, that they may become conversant with the requirements of the Observatory in the care of chronometers.

Theory and Tables of the Moon.—In the work of revising the theory and tables of the moon, upon which Professor Newcomb is engaged, a new and more exact method of computing the effect of the attraction of the planets upon the motion of the moon has been worked out. A nearly complete list of stars, occultations of which by the moon have been observed since 1750, has been prepared; the total eclipse of 1715 at London has been calculated from Hansen's tables and compared with observations; and two occultations of Aldebaran, observed at Greenwich and London in 1680, have been similarly compared with Hansen's tables.

The results indicate that the positions of the moon at those dates are better represented by the old tables of Burckhardt than by those of Hansen. As the work is now approaching that stage in which a large amount of merely routine computation is to be performed, an appropriation of $2,000 for this purpose is respectfully requested, and that sum is inserted in the estimates for the next fiscal year.

Transit of Venus.—The arrangements necessary to secure the successful observation of the transit of Venus, which will occur on December 8, 1874, have begun to receive the attention of the Observatory.

It is essential to the complete success of these observations that the various parties which may be sent out by the Government should make their observations on a uniform and carefully prepared plan.

The Superintendent of the Observatory has been invited to become a member of a committee of the National Academy of Sciences, appointed to devise such a plan. The functions of the Academy being purely advisory, and it being expected that the co-operation and assistance of the ablest astronomers of the country would be secured by this committee, the invitation was accepted.

Although this committee has not yet met, certain experiments and trials with the apparatus and instruments of observation are necessary in any case. As many experiments and many alterations of apparatus, all requiring time and careful consideration, may be necessary, the small appropriation of $3,000 for instruments and apparatus is called for.

ECLIPSE OF DECEMBER 22, 1870.

The eminent success of the officers of the Observatory engaged in the observation of the August eclipse, 1869, made it desirable that their experience should not be lost in the approaching eclipse in Europe, and the Observatory made an early movement to organize parties for that purpose. Failing to obtain an appropriation for the purpose of engaging the services of observers outside of our own institution, the Department, ever ready to contribute all in its power to the advancement of science, ordered, at the request of the Superintendent of the Observatory, four of its professors for that duty, namely, Professor S. Newcomb, in addition to other special duty in Europe; Professors A. Hall, William Harkness, and J. R. Eastman, each having special duties, to occupy stations at Gibraltar or Algiers, and at Syracuse in Sicily. The Observatory reports of these officers on the August eclipse, already published, give promise of able contributions to science; and in this way we hope to add our mite to the information to be gained upon such interesting occasions.

The officers will depart for their several destinations on October 20 and November 2.[1]

THE LIBRARY.

Through its increasing exchanges with other institutions, its chief reliance, the library has a steady growth. The number of copies of the annual volume of observations having been increased, the Observatory will be better prepared to answer the calls made for them. The volume for the year 1867, a quarto of 892 pages, was received from the Government Printing Office September 8. Its distribution to observatories, colleges, and scientific institutions and individuals at home and in foreign countries was begun the same day.

In February last, the eclipse report, already referred to, was received from the printer, and nearly one thousand copies almost immediately distributed. Many requests for this work are now on file, awaiting the issue of the second edition ordered by Congress.

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[1] The reports on this eclipse have been published as Appendix I to the Washington Observations for 1869.

It is gratifying to the Observatory to have upon its files very high commendations of this work from some of the first astronomers abroad, as well as in the United States, and the same remark is true of the annual volume lately sent out, so far as acknowledgments of its receipt have come to hand.

The correspondence of the library, in conducting its exchanges and in distributing its publications, remains in the charge of Professor J. E. Nourse, United States Navy. He also assists in the preparation of the sheets of the annual volume of observations for the press.

The erection of the new observing room for the great Transit Circle left the old room available for the library, which had hitherto been in the frame portion of the south wing, an unsafe building for our valuable collection of scientific works, and the entrance to which was through the Prime Vertical room, much to the interruption of the observers. This change is now being made by the removal of the shelves and books to the safer and more convenient apartment vacated by the removal of the Transit Circle.

The suggestion which I made in my last report, in regard to the pay of the professors, to enable the Observatory to retain an efficient corps of astronomers, having been carried out in the Navy pay-bill, passed last session of Congress, I have now only to repeat the request made in that report in regard to the three aids:

"These gentlemen, before being appointed, were required to undergo a strict examination as to mathematical attainments and knowledge of general science, and to prove their fitness for appointment by a high standard. They are frequently required to perform the duties of observer as well as computer, the more experienced observing on alternate nights with the professors. Considering the value of their services, I earnestly recommend a small increase to the pay of the three assistant observers or aids. They now receive at the rate of $1,333.33 each, ($4,000 for the three.) I recommend that their pay be graduated or classified as follows:

"First aid or assistant observer	$1,600 per annum;
"Second aid or assistant observer	1,500 per annum;
"Third aid or assistant observer	1,400 per annum;

which will only be an increase of $500, distributed among the three according to their experience or capability."

I would also urge that the clerk, the only one allowed the Observatory, who has charge of all its correspondence, accounts, &c., and whose duties are of a peculiarly arduous nature, be placed upon the footing, as to pay, of a fourth-class clerk.

Very respectfully, your obedient servant,

B. F. SANDS,
Commodore, Superintendent.

Commodore JAMES ALDEN, U. S. N.,
Chief of Bureau of Navigation, Navy Department.

INTRODUCTION.

The Observatory was originally built as a depot of charts and instruments for the Navy, the work being done under the supervision of Lieutenant James M. Gilliss, U. S. N., and a very full account of it is given in his "Report on the Plan and Construction of the Depot of Charts and Instruments, with a Description of the Instruments, &c.," made to the Secretary of the Navy in February, 1845, and published as Senate Document No. 114, Twenty-eighth Congress, second session. A more general description, illustrated by plans of the building and drawings of the principal instruments, is contained in the volume of Washington Observations for 1845; and an account of the changes made for the reception of the large Transit Circle, together with a description of that instrument, will be found in the volume of Washington Observations for 1865.

Position of the Observatory.—The latitude deduced from observations made with the Mural Circle in 1845 and 1846 was $+ 38° 53' 39''.25$;[1] and that value has been employed in the reduction of all observations made with the Mural Circle down to the present time. The observations made with the same instrument from 1861 to 1864, inclusive, give a latitude $0''.47$ less, viz, $+ 38° 53' 38''.8$;[2] and this latter value is the one which has always been used in computing the published "Apparent North Polar Distances" obtained from observations made with the Transit Circle. It should be remarked, however, that in the published tables of "Right Ascensions, North Polar Distances, and Semi-diameters of the Sun, Moon, and Planets, deduced from Observations with the Transit Circle," and of "Corrections to the Right Ascensions and North Polar Distances of the American Ephemeris given by individual observations of Stars with the Transit Circle," the final north polar distances depend upon the position of the pole determined from all the observations of circumpolar stars made with the Transit Circle during the same year as those contained in the tables in question. In interpolating tabular positions of the moon and planets, the longitude of the Observatory from Greenwich is assumed to be $5^h 8^m 12^s.0$.[3]

The point to which all differences of longitude measured from the Observatory are referred is the center of the dome. The most probable value of its latitude is $+ 38° 53' 38''.8$, which has been determined from discussions of all the observations of circumpolar stars observed, both above and below the pole, with the Mural and Transit Circles, during the years between 1861 and the present time. For the determination of its longitude from Greenwich the following data are regarded as the most trustworthy. They were communicated to the Superintendent of the Observatory in an official letter from the Coast-Survey Office, dated August 10, 1872. The numbers preceding the differences of longitude are the years when they were measured:

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[1] Washington Observations for 1845, Appendix, p. 116.

[2] Washington Observations for 1864, Introduction, p. xliv.

[3] In some previous volumes this longitude is erroneously given. All the tabular positions of the moon since 1860 have been computed with the adopted longitude $5^h 8^m 12^s.0$.

	h.	*m.*	*s.*	*s.*
1866. Greenwich east of Foilhommerum . .	0	41	33.29	± 0.10
1866. Foilhommerum east of Heart's Content .	2	51	56.32	± 0.12
1866. Heart's Content east of Calais . . .	0	55	37.97	± 0.15
1857. Calais east of Bangor	0	6	0.31	± 0.05
1851. Bangor east of Cambridge	0	9	23.06	± 0.05
1867. Cambridge east of Washington . . .	0	23	41.11	± 0.03
Washington west of Greenwich . . .	5	8	12.06	± 0.23

The points of reference are, at Greenwich, the Transit Circle, and at Cambridge and Washington, the domes of the observatories. The large probable errors are due to personal equation.

Since the Observatory was built, there have been a number of changes in the positions of its instruments, and, in order to facilitate comparisons of the work done with them at different times, their co-ordinates, measured from the center of the dome, are given in the following table. The sign + before a co-ordinate indicates that the instrument to which it belongs is north or west of the center of the dome, while the sign — indicates that it is south or east of that point:

	Diff. Lat.	Diff. Lon.	Diff. Lat.	Diff. Lon.
	Feet.	*Feet.*	"	*s.*
Transit Instrument:				
January, 1845, to September 2, 1864 . .	0.0	+ 41.	0.00	+0.035
Since October 1, 1864	0.0	− 42.9	0.00	−0.036
Mural Circle:				
January, 1845, to September 15, 1845 . .	0.0	+ 32.	0.00	+0.027
Since October 1, 1845	0.0	− 33.9	0.00	−0.029
Old Meridian Circle:				
January, 1845, to August, 1864	0.0	− 42.9	0.00	−0.036
Prime Vertical Transit Instrument:				
Since January, 1845	− 45.4	0.0	− 0.45	0.000
Transit Circle:				
January 1, 1866, to June 5, 1869 . . .	0.0	+ 38.4	0.00	+0.032
Since October 1, 1869	0.0	+ 77.8	0.00	+0.066

Arrangement of work.—The system adopted at the time of the revival of the astronomical activity of the establishment in 1861 is still continued. Under this system, the observations with each instrument are directed by the officer having it in charge, who is held responsible for the proper performance of the work, and prepares the descriptions, explanations, and discussions of the observations contained in the annual volumes.

During the year 1870 the details for duty were as follows:

The Transit Circle was in charge of Professor William Harkness, U. S. N., who was assisted by Professor John R. Eastman, U. S. N., and by the following named assistant observers during the periods specified, viz: Mr. Edgar Frisby, from January 26 to September 16, and Mr. Ormond Stone, from March 28 to October 8. The copying of the work from the original observing-books and reduction-sheets on to the sheets for the printer was done by Captain William B. Whiting, U. S. N., for the period from February 2 to June 16, and by Professor Joseph E. Nourse, U. S. N., for the period from June 16 to August 15, this work being in addition to his other duties. After the latter date no observations were made, as the object-glass was being reground.

The Transit Instrument and Mural Circle were in charge of Professor Mordecai Yarnall, U. S. N., who was assisted by the following named assistant observers during the periods specified, viz: In the work with the Transit Instrument: Mr. Edgar Frisby, on December 2; Mr. Aaron N. Skinner, from March 28 to December 31; and Mr. Ormond Stone, from October 8 to December 31. In the work with the Mural Circle: Mr. Edgar Frisby, from January 5 to January 25, and from September 16 to December 31; and Mr. F. W. Bardwell, on January 3. The observations with the Transit Instrument were reduced by Professor Yarnall, and copied on to the sheets for the printer by Mr. Thomas Harrison, the clerk of the Observatory, this work being in addition to his other duties. The observations with the Mural Circle were reduced by Professor Yarnall and Assistant Observer A. N. Skinner.

The Prime Vertical Transit Instrument was not used during the year.

The Equatorial was in charge of Professor Asaph Hall, U. S. N.

The Department of Chronometers, which includes the dropping of the time-ball at noon, and the transmission of time-signals to the city through the Police Telegraph, was in charge of Commander Jonathan Young, U. S. N., from January 1 to September 26; and in charge of Commander S. Livingston Breese, U. S. N., from October 1 till the end of the year. The following-named officers served as assistants in this department during the periods specified, viz, Commander W. C. West, from January 1 to September 26; Lieutenant-Commander J. H. Sands, from January 1 to February 18; Master Frank Turnbull,[1] from January 1 to August 13; Ensign R. Clover, from January 1 to March 18; Lieutenant-Commander W. W. Maclay, from February 14 to February 19; Ensign Charles W. Jarboe,[2] from March 18 to July 31; Lieutenant-Commander Charles McGregor, from April 26 to August 19; Ensign J. W. Carlin,[3] from June 13 to July 12; Commander S. Livingston Breese, from August 1 to October 1; Lieutenant-Commander Theodore F. Jewell, from September 2 to December 31.

The meteorological observations were made, under the supervision of Professor J. R. Eastman, U. S. N., by the watchmen of the establishment, Messrs. Thomas Hays, Dennis Horigan, and Nicholas Cahill.

Mr. William F. Gardner, instrument-maker, executed all necessary alterations and repairs to the instruments during the year.

Mr. Thomas Harrison, clerk and disbursing officer, had charge of the official correspondence and accounts of the establishment.

The Observatory, being a naval establishment, is under the general supervision of the Bureau of Navigation of the Navy Department.

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[1] Lieutenant, March 21, 1870.

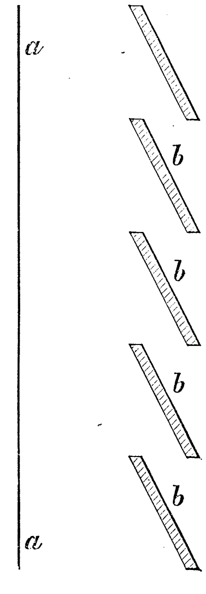
[2] Master, July 12, 1870.

[3] Master, July 12, 1870.

THE TRANSIT CIRCLE.

On February 2, 1870, the mounting of this instrument in the new west wing was completed, and for the ensuing six months it was employed on stars contained in the list of the American Ephemeris, and on the bodies belonging to the solar system. The performance of the object-glass never having been satisfactory, on August 16, it was removed from the telescope tube and sent to Messrs. Alvan Clark & Sons to be reground. Before that process was completed, the officer in charge of the instrument, and his senior assistant, were ordered to Sicily for the purpose of observing the total solar eclipse of December 22, and the instrument was not again used during the year.

THE OBSERVING-ROOM.



The interior of the observing-room measures 40 feet from north to south, and 28 feet 3 inches from east to west. Its height, from the floor to the under side of the shutters which cover the slit, is, at the ridge 23 feet 2 inches, and at the eaves 19 feet 6 inches. The ridge of the roof is placed due east and west. The slit opens to a width of 3 feet 9 inches, and extends downward to within 7 feet 4 inches of the floor. The portion in the roof is closed by means of four sliding shutters, while the portions in the north and south walls are each closed by a single door. The construction of the room is peculiar, its sides being formed of tinned iron 0.015 of an inch $=$ 0.38 of a millimeter thick, shaded from the direct rays of the sun by light wooden louver work, arranged as shown in the accompanying section, which is drawn to a scale of one-tenth; *a* is the tinned iron, and *b*, *b*, *b*, the louver work. This construction was adopted in order to secure identity of temperature between the internal and external air, and is probably the best possible for that purpose.

In removing the transit circle to this room its latitude was not changed, but it is now 77.8 feet$=0^{s}.066$ west of the center of the dome, while from January 1, 1866, to June 5, 1869, it was only 38.4 feet $= 0^{s}.032$ west of the center of the dome.

THE TRANSIT CIRCLE.

A description of the transit circle, together with an investigation of its constants, is contained in the Washington Observations for 1865. The following briefer account will probably suffice to render intelligible the explanation of the observations and their reduction.

The instrument was made in 1865 by Pistor and Martins, of Berlin; is of the reversible pattern; and is mounted upon two massive marble piers, with its axis 8 feet 2 inches above the floor.

The telescope has a clear aperture of 8.52 inches, and a focal length of 12 feet 1.0 inch. The axis is cast in a single piece, into which the steel pivots, 2.09 inches in diameter and 1.70 inches long, are screwed. The **Y**s are of gun-metal, and their bearing surfaces are 0.28 of an inch wide. The distance between them, measured from center to center of the bearing surfaces, is 3 feet 9.1 inches. The telescope tube is made in two similar halves, which are bolted to opposite sides of a cube, measuring 16.64 inches on each edge, which forms the center of the axis.

There are two circles, identical in form and size, which are attached to the two extremities of the axis. Each of them has ten arms, is cast in a single piece weighing about eighty pounds, and is 45.30 inches in diameter at its outside edge, and 43.40 at the graduation. The circle on the clamp end of the axis is designated as circle A, and has inlaid upon its face two bands of silver, each 0.13 of an inch wide, the inner one of which is graduated to every 2′, and the outer one to every 10′. The circle on the other end of the axis is designated as circle B, and has inlaid upon its face a single band of silver, 0.13 of an inch wide, which is graduated to every 2′. The graduation on each of these circles is numbered from 0° to 360°, the numbers increasing from left to right; and, as they face in opposite directions, when the telescope is turned in zenith distance, the reading of one circle increases while that of the other diminishes. The circles are attached to the axis in such a manner that they may be set to give any desired reading when the telescope is pointed to the zenith. Each of them is provided with four micrometer microscopes for reading its fine graduation; but the same microscopes are not always employed with the same circle, because they are attached to the piers, and reversing the instrument interchanges them and the circles. Each pier carries four microscopes, placed at the extremities of two diameters, which intersect each other at right angles, and each of which makes an angle of 45° with the vertical. The microscopes on the western pier are marked I, II, III, IV; those on the eastern pier, V, VI, VII, VIII. The readings of the former diminish, and those of the latter increase, as the telescope moves from the zenith toward the south. Assuming distinct vision with the naked eye to be obtained at a distance of ten inches, these microscopes magnify forty-five diameters. Each revolution of their screws is equal to 30″, and their micrometer heads are divided to 0″.5. In addition to the microscopes already mentioned, each pier carries another, which is employed as a pointer for setting the telescope by means of the coarse graduation on circle A. These microscopes magnify twenty-three diameters, and are placed at the extremities of horizontal radii to the circles; that on the western pier being to the north, and that on the eastern pier to the south of the axis. The horizontal microscope in actual use is always the one at the clamp end of the axis, that being the position of circle A.

In the eye-piece of the telescope is a fixed reticule of fifteen vertical and two horizontal wires. The latter have a space of about 8″ between them, and are used principally to mark the center of the field of view. The equatorial intervals and notation of the vertical wires are approximately as follows:

TABLE I.

	s.		s.		s.
I	+ 36.7	C_1	+ 4.1	D_1	− 8.1
II	+ 24.5	C_2	+ 2.0	D_2	− 9.7
III = B_1	+ 12.2	IV = C_3	0.0	V = D_3	− 12.2
B_2	+ 9.7	C_4	− 2.0	VI	− 24.5
B_3	+ 8.1	C_5	− 4.1	VII	− 36.7

The wires B_1 to B_3 are called set B; C_1 to C_5, set C; and D_1 to D_3, set D. In reference to the notation, it should be observed that the wire first crossed by an equatorial star is always designated wire I; consequently, when the instrument is reversed, the notation of the wires is also reversed.

In addition to the fixed reticule, the eye-piece contains a right-ascension and a zenith-distance micrometer, in each of which the readings increase as the wire moves from the micrometer head. The right-ascension micrometer serves for determining the collimation constant, and is sometimes used for obtaining the time of transit of close circumpolar stars when clouds prevent their being seen at the fixed wires. It is provided with a single vertical wire, moved by a micrometer screw, each revolution of which measures $1^s.020$. The zenith-distance micrometer carries four horizontal wires, the middle two of which are distant from each other about 4½″, and the center of the space between them is regarded as the standard middle wire. The other two are placed at a distance of about ten revolutions of the screw on each side of the middle wire; that nearest the micrometer head being designated wire A, the other wire B. When the telescope looks south the micrometer head is below the eye-piece if the clamp is west, above it if the clamp is east. An increase of micrometer reading is subtractive from the reading of circle A, and additive to that of circle B.

The illumination of the field of view is so arranged that the light can be made of any desired intensity, and the wires can be shown either dark on a bright ground, or bright on a dark ground. In the case of bright-field illumination the color of the light can be varied from deep red, through light red, yellow, and light blue, to dark blue.

SUBSIDIARY APPARATUS.

Collimators.—The transit circle is furnished with two collimators, having object-glasses of 35.2 inches focal length, and 2.13 inches clear aperture. Their eye-pieces produce a magnifying power of 67 diameters. The ends of each collimator project 7 inches beyond the bearing points of its **Y**s, which latter are only 21 inches apart. The field of view of collimator A contains two vertical wires, distant from each other about 11″.8, crossed at their middle point by a single horizontal wire. The field of view of collimator B contains a single vertical wire, crossed at its middle point by a single horizontal wire. The positions of the collimators may be interchanged, but collimator A is usually mounted to the south, and collimator B to the north of the transit circle. A pair of delicate levels is provided, by means of which the axes of sight of the collimators may be placed truly horizontal.

Each side of the central cube of the transit-circle telescope is pierced with a circular opening, 2.4 inches in diameter, which is closed by a cap screwing into it. By removing these caps, and setting the telescope vertical, the wires of either collimator may be seen from the other.

The Standard Sidereal Clock was made by Kessels, of Altona. For the purpose of securing it as much as possible against changes of temperature, it is inclosed in a heavy masonry vault situated in the clock-room, which adjoins the observing-room on its eastern side. When first placed there the steel parts of its works showed a strong tendency to rust, and, in order to obviate this, the vault was lined with plates of tinned iron. The rusting still continuing, a small stove was put in the clock-room, and a fire is now kept there all the year through. This insures the dryness of the air, and the rusting is entirely prevented. The clock has a gridiron pendulum, which maintains a very steady rate. It is included in the galvanic system of the Observatory by means of two wires, which run from the main switch-board, respectively, to the point of suspension of the pendulum, and to a globule of mercury situated near the middle of the pendulum rod. A platinum point projecting from the rod touches the surface of the globule at each vibration, thus closing the circuit, and causing the beats of the clock to be registered on any chronograph with which it may be connected. The globule of mercury is kept quite small, and adjusted to such a height that the platinum point just grazes its surface without causing any sensible vibration of its mass. A fuller description of the apparatus is given in the Washington Observations for 1867, Appendix I, p. 10.

The rating of this clock is effected by means of small weights placed in a little cup attached to the pendulum rod about the middle of its length. The addition of 100 grains causes the clock to gain 9.7 seconds per day.

The Counting Clock is placed on the pier of the south collimator in the transit-circle room. It was made by Parkinson and Frodsham, of London; has a mercurial pendulum; and is regulated to sidereal time. Its rating is effected by means of small weights placed on top of the jar containing the mercury. The addition of 100 grains causes it to gain 2.9 seconds per day.

This clock contains a delicate spring, furnished with a platinum point, resting upon a small plate of the same metal; the whole so arranged that at the beginning of each minute an arm attached to the arbor of the seconds-hand raises the spring and separates the point from the plate for a period of one second. Wires are attached to this apparatus so that when desired it may be included in the same galvanic circuit with the Kessels clock, and when such is the case it breaks the circuit for a single second once in each minute.

The Chronograph has a barrel, 8.15 inches in diameter and 24.0 inches long, which revolves once in each minute, and will run continuously for four hours without requiring the paper to be changed. It has but a single pen, by which both the clock signals and those of the observer are recorded. The record is made upon ordinary writing-paper with an ink which does not freeze at 0° F. It is composed of

Alcohol - - - - - - - - - -	2 fluid ounces.[1]
Water - - - - - - - - - -	4 fluid ounces.
Concentrated Glycerine - - - -	1 fluid drachm.
Crystallized Aniline Blue - - - -	40 grains.

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[1] One fluid ounce is equivalent to 28.5 cubic centimeters, and one fluid drachm to 3.56 cubic centimeters.

If desired, 400 grains of white sugar may be substituted in place of the glycerine. The solution must be filtered before it is used. The pen is of glass, and consists of a tube, 0.25 of an inch in external diameter and 1.15 inches long, to which is joined a bulb 0.65 of an inch in diameter; the lower end of the bulb being drawn out to a capillary tube 0.003 of an inch in internal diameter. The total length of the pen is about 2.5 inches. The bulb being filled with ink, when the pen is allowed to rest upon the paper by its own weight, it produces a fine sharp line.

The Barometer and Thermometer.—The barometer employed was made by I. Newman, of London, and is a standard of the cistern form, with a tube whose internal diameter is 0.532 of an inch. It is the one used for the regular meteorological observations, and is situated in the northwest room, on the first floor of the main building. The thermometer, a standard by Jas. Green, of New York, is suspended outside the north front of the observing-room. It is 11 feet above the surface of the ground, and is protected from radiation by a double shield of bright tinned-iron plate.

The Sympiesometer.—This instrument was made by James Green, of New York, and is designed to lessen the number of observations and computations necessary for determining the correction to the refraction on account of the density of the air. It consists of a vertical tube, the top of which expands into a bulb, while the bottom is bent round in the form of the letter **U**. The large arm or cistern of the **U** holds sulphuric acid, and is closed by connection with an air-tight bag of oiled silk. The rest of the tube contains air, the quantity of which is so adjusted that in the hottest weather it nearly fills the vertical tube, while in the coldest weather the acid rises nearly to the bulb. If, now, the density of the fluid were zero, the density of the air within the bulb and tube would be the same as that of the external air. But, the sulphuric acid being quite heavy, its height in the tube of the sympiesometer is a function of any two of the three quantities, barometric pressure, temperature, and density of the external air. As, at all zenith distances at which it is worth while to observe for the determination of star positions, the refraction may be regarded as a function of the zenith distance and the density of the air simply, the datum wanted is the density of the external air, which must be expressed as a function of the height of the sympiesometer and barometer. Let

B = height of barometer.
τ = temperature, counted from the absolute zero.
D = actual density of external air.
D_0 = density of air when the surfaces of the fluid in the tube and in the cistern are on the same level.
c = constant of elasticity of air.
l = total capacity of tube and bulb, counted from the point at which the surfaces of the acid in the cistern and tube are on the same level, measuring that capacity by the length to which it would be necessary to extend the tube in order that it might hold as much as the bulb.
h = height of internal surface of acid, counted from the same point with l.
a = specific gravity of acid, increased in the ratio of the bore of the tube to that of the cistern, specific gravity of mercury being unity.

$B' =$ pressure of the confined air, in inches of mercury.

Then, from well-known properties of elastic gases, we derive the equations,

$$B = c\,D\,\tau$$

$$B' = c\,D_0\,\tau\,\frac{l}{l-h}$$

$$B' = B - ah$$

From the last two equations,

$$B = ah + \frac{c\,D_0\,\tau\,l}{l-h}$$

Substituting for τ its value from the first equation, we find,

$$D = D_0\left(\frac{l}{l-h}\right)\left(\frac{B}{B-ah}\right)$$

Thus, D is expressed as a function of the height of the fluid in the sympiesometer and of the height of the barometer. Let us put

$$B = B_0 + \beta$$

B_0 being the mean height of the barometer, and β its small changes. Then, developing to the first powers of β, we have,

$$\frac{B}{B-ah} = \frac{B_0}{B_0-ah} - \frac{ah\beta}{(B_0-ah)^2}$$

To estimate the value of the last term of this equation we remark that

The value of a is, roughly, about . . . . $\frac{1}{8}$
The value of β seldom exceeds, during fine weather, . ± 0.4 inch.
The value of h rarely exceeds . . . . 8 inches.
While we may put B_0 . . . . $= 30.15$

Consequently, the last term of the equation will seldom amount to $\frac{1}{2000}$, and may usually be neglected. We therefore have

$$D = \frac{B_0\,l\,D_0}{(B_0 - ah)\,(l-h)}$$

in which the density of the air is expressed as a function of the observed height of the sympiesometer, and of determinable constants.

As it is doubtful whether the invariability of a and D_0 can be relied on for long intervals of time, it has been deemed best not to attempt the direct determination of D, but to find the value of the sympiesometer scale by comparison with the results obtained from the thermometer and barometer. A scale is attached to the sympiesometer, the reading of which gives approximately the logarithm of the density of the air, the density at 29 inches and 100° being unity; and a table of corrections to this scale is deduced from comparisons with the barometer and thermometer at various densities of the air.

USE OF THE TRANSIT CIRCLE.

Position of Axis.—The plan of work with the instrument is based on the assumption of its reversal at the beginning of each calendar year, and the use of a single circle in an invariable position, with a single set of four microscopes during each year. The circle used is always so set that the polar distances of the stars observed depend on different circle divisions in different years. During the year 1870 the clamp end of the axis was toward the east.

Magnifying Power.—The eye-piece habitually employed on the transit circle telescope is of the ordinary Ramsden construction, and produces a magnifying power of 186 diameters.

Arrangement of Work.—As a general rule, one observer is charged with all the observations to be made during a definite twenty-four hours, which is considered the "observing-day", and usually begins at 9 a. m.; but when a special observation is to be made at an earlier hour in the morning, the observers are permitted to arrange among themselves to have the tour of duty commence sooner. An isolated observation occurring at an inconvenient hour for the regular observer of the day is occasionally assigned to another.

The usual observing-hours are from 9 a. m. to 3 p. m., and from 9 p. m. to 1 a. m.; but it is often found necessary to vary them. If the weather permits, the moon is always observed at her meridian passage, and when this occurs later than 1 a. m. the observer is allowed considerable latitude in the time of doing his night's work. On Sundays the only observations regularly made are those of the moon, with the accompanying determinations of time and instrumental constants. Whenever special observations are required, the necessary orders are given by the officer in charge of the instrument.

In fine weather two groups of observations are made during each observing-day; the mean of one group occurring about noon, the mean of the other about 11 p. m., and the interval between the two being not far from twelve hours. When the moon crosses the meridian later than 1 p. m., the mean of the night group occurs later than 11 p. m., unless, indeed, there are two night groups, which is sometimes the case. In order to obtain right ascensions of the close circumpolar stars, it is necessary to consider the azimuth as invariable during the whole of each observing-day; but the collimation, level, and zenith-point correction are habitually determined as nearly as possible at the middle of every group of observations. Thus, with the exception of the azimuth, none of the instrumental constants are trusted for more than about three hours on each side of the instant at which they are actually determined.

Experience has shown that each observer should make not less than 25 observations of celestial objects, if it is clear during the whole 24 hours that he is on duty, or not less than 20 observations if it is only clear during the evening. Reflected observations are counted double. As the average cloudiness at Washington is fifty per cent. and the instrument is worked whenever the weather permits, this gives a total of from 3 500 to 4 000 observations per year.

Mode of Observing.—A galvanic current from the Kessels clock works the chronograph pen, and all observations of time are made by the aid of its beats. Hence, when an observer comes on duty, his first care is to see that the Kessels and counting clocks are together, and that their beats coincide. If they are not in that condition he puts them so by adjusting the pendulum of the counting clock. The use of this latter clock is twofold, viz: 1, it serves to indicate the second corresponding to each beat of the chronograph pen;[1] and, 2, when included in the galvanic circuit it records the beginning of each minute on the chronograph sheet by causing the pen to omit the mark corresponding to 0 seconds.

The general principle adopted in using the transit circle is to bring the proper division of circle B as accurately as possible under the zero of its micrometer microscopes, and then to measure with the zenith-distance micrometer of the telescope the space between its zero point and the position actually occupied in the field of view by the image of the object observed. The subdivision of the intervals between consecutive graduations on circle B is thus thrown entirely on the zenith-distance micrometer of the telescope, and as the arc measured by the micrometer microscopes rarely exceeds $10''$ their errors of run are neglected. The graduation of circle B is so much better than that of circle A, that it only is employed in measures of zenith distance; and in order to make these measures depend upon different divisions in different years, the position of circle B upon the axis of the instrument is changed at the beginning of each alternate year. Circle A is used only to indicate the degrees and minutes of zenith distances, and its position upon the axis is never changed. If a collimating eye-piece is applied to the telescope, its zenith-distance micrometer set at 25 revolutions, and the whole instrument turned until the micrometer wires cover their own images reflected from a basin of mercury, the reading of the horizontal microscope of circle A is always $179^\circ\ 56'$, and some division of circle B is always very nearly under the zero of its micrometer microscopes.

Let

R = reading of horizontal microscope of circle A when the telescope points to the zenith.

φ = latitude of transit circle.

δ = declination of object to be observed.

r = refraction of object to be observed.

Then, when the clamp is west, the telescope must be so set that the horizontal microscope of circle A reads:

For a direct observation, - - - $R - \varphi + \delta \pm r$

For a reflected observation, - - - $180^\circ + R + \varphi - \delta \mp r$

If the clamp is east, the settings will be,

For a direct observation, - - - $R + \varphi - \delta \mp r$

For a reflected observation, - - - $180^\circ + R - \varphi + \delta \pm r$

If the true value of φ were substituted in these formulæ, whenever the computed setting was not exactly an even minute, it would be necessary to set on the *nearest* even minute. In practice it is found much more convenient always to set on the *next less* even minute; and, in order to do so without causing the zenith-distance micrometer to measure more than half the distance between two consecutive divisions of circle B, a fictitious value of the latitude, differing from the true value by half the distance in question, is used. The fictitious latitude is 1′ greater than the true one for a reflected observation with clamp west, or for a direct observation with clamp east; and it is 1′ less than the true one for a direct observation with clamp west, or for a reflected observation with clamp east. The formulæ actually employed for computing the settings are, therefore,

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[1] All observations are made in time of the Kessels clock, but, as it is in a different room from the observer, the latter cannot see its face, and only hears its beats as repeated by the chronograph.

For a direct observation, clamp west, ... $321^\circ\ 3'.4+\delta\pm r$
For a reflected observation, clamp west, ... $218^\circ\ 50'.6-\delta\mp r$
For a direct observation, clamp east, ... $38^\circ\ 50'.6-\delta\mp r$
For a reflected observation, clamp east, ... $141^\circ\ 3'.4+\delta\pm r$

in which r must be taken with the upper sign for an object south, and with the lower sign for an object north of the zenith. For the moon, r must be made equal to the sum of the refraction and parallax. For an object below the pole, $180^\circ-\delta$ must be substituted instead of δ.

For faint objects it is necessary to know not only the reading at which the circle must be set, but also the exact reading of the zenith-distance micrometer for the point at which the object will enter the field of view. No matter whether the clamp is east or west, this is computed by means of the formula,

$$\text{Micrometer Reading} = 29 \text{ revolutions} - \frac{\varepsilon}{R}$$

in which ε is the excess of the computed circle reading above the next less even minute, and R is the value of one revolution of the micrometer screw. If the computed circle reading is exactly an even minute, the object will enter the field of view at 29 revolutions of the micrometer.

In the following paragraphs it is frequently stated that a star or planet, or the limb of the sun or moon, is bisected by the zenith-distance micrometer of the telescope. This form of expression is not quite accurate, and is only used for the sake of brevity. The idea intended to be conveyed is, that the zenith-distance micrometer is moved until the space included between its middle pair of wires is bisected by the image of the star or planet, or by the image of the limb of the sun or moon. Some of the observers find it difficult to see the images of very faint objects between the middle pair of wires, and prefer to bisect them with wire A or wire B. These latter wires are also used to avoid running the micrometer screw over inconveniently long distances, when observing two objects having nearly the same right ascension, but differing from two to five minutes in declination. Special care is taken to make all bisections by moving the micrometer wires away from the head, and thus causing the screw to act against the opposing springs. The same precaution is observed in reading the micrometer microscopes of the circles. The readings of the zenith-distance micrometer are taken from the self-registering indexes after the completion of each observation.[1]

To make a complete observation of all four limbs of the sun requires three persons, and the process is as follows: The observer on duty for the day extracts from the almanac the right ascension and declination of the sun's center for the time of its transit, and also its apparent semi-diameter. With these elements he computes the readings at which circle A must be set, in order to point the telescope respectively to the north and south limbs of the sun, and having recorded them on a slip of paper, he hands it to the assistant who is to be stationed at the horizontal microscope of circle A. A paste-board cap, with an aperture of three inches in diameter, is placed over the object-glass of the telescope; a shade-glass is placed on the eye-piece; the chronograph is started; the telescope is set to the proper position for observing the sun's center; and the observer, with the chronograph key in his hand, stations himself at its eye-end. The two assistants are now standing at the shutter ropes, and at the instant the clock indicates two minutes before the time of transit of the sun's center, they open the shutters, and then take their stations, one at the horizontal microscope of circle A, the other at the micrometer microscopes of circle B. The preceding limb of the sun is now well into the field of view, and its transits over the wires B_1 to D_3 are observed by tapping on the chronograph key. Next, the assistant at circle A points the telescope to one of the horizontal limbs of the sun, clamps, and, by means of the tangent screw, brings the proper division of circle B as nearly as possible under the zero of its micrometer microscopes. The limb is then bisected with the zenith-distance micrometer of the telescope at wire I, and again at wire II, and, while that is being done, the assistant at circle B reads its four micrometer microscopes. Then the assistant at circle A unclamps, points the telescope to the other horizontal limb of the sun, clamps again, and, by means of the tangent screw, brings the proper division of circle B as nearly as possible under the zero of its micrometer microscopes. This limb is then bisected with the zenith-distance micrometer of the telescope at wire VI, and again at wire VII; and while that is being done, the assistant at circle B reads its four micrometer microscopes. Finally, the assistant at circle A again unclamps, and the observer himself points the telescope to the sun's center, and observes the transit of its following limb over the eleven wires from B_1 to D_3. The shutters are then closed, and the observation completed by reading the sympiesometer, external thermometer, barometer, and attached thermometer. It will be noticed that particular care is taken to expose the instrument to the direct rays of the sun for as short a time as possible, and even then the circles are always completely shaded by the platform and steps used for ascending to the eye-piece of the telescope, when the nadir point is to be observed.

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[1] Washington Observations for 1865. Description of Transit Circle, § 30.

Observations of the moon are made in two ways. If the first limb is the full one, the observer takes the time of transit of the center from the almanac, and, going to the telescope about three minutes before that time, he sets the zenith-distance micrometer to read 24 revolutions, and then sweeps for the moon's limb. Having found it, he observes its transit over the wires B_1 to D_3. Then, as rapidly as possible, he turns the telescope till the full limb (north or south) is bisected by the zenith-distance micrometer; goes to the clamp screw; clamps, looks into the horizontal microscope of circle A, and turns the tangent screw until the division of circle B nearest the zero of its microscopes is brought approximately under them; resumes his place at the telescope, and with the zenith-distance micrometer bisects the limb at wires III, IV, and V, or sometimes at wires II, III, IV, V, and VI. Finally, the observation is finished by reading the micrometer microscopes of circle B, and the degrees and minutes indicated by the horizontal microscope of circle A. Sometimes the telescope is not so set as to bring any division of circle B approximately under the zero of its microscopes, and in such cases the divisions lying nearest on each side of the zero are read.

If the second limb of the moon is the full one, the observer takes the time of transit of the center from the almanac as before, and, in addition, computes the reading at which circle A must be set in order to point the telescope to the north or south limb, whichever happens to be full. Five minutes before the time of transit, he sets the telescope in the computed position, clamps, and reads the micrometer microscopes of circle B. When the moon comes into the field of view, he observes it with the zenith-distance micrometer, in the manner already explained; and then unclamps, points to the moon's center, and finishes by observing the transit of its second limb over the wires from B_1 to D_3.

The larger planets are observed in the following manner: The right ascension and declination of the planet's center are taken from the almanac, the reading of circle A, at which the telescope must be set is computed, and the instrument is clamped in that position. When the planet enters the field of view, its northern limb is bisected with the zenith-distance micrometer at wire I, and its southern limb at wire II. The transit of its preceding limb is observed over wires B_1, B_2, B_3, D_1, D_2, D_3; and the transit of its following limb, over wires C_1, C_2, C_3, C_4, C_5. The observation is finished by again bisecting the southern limb with the zenith-distance micrometer at wire VI, and the northern limb at wire VII. Thus, both the horizontal and vertical diameters are measured, and the observations of each limb are perfectly symmetrical with respect to the middle wire.

Planets which do not present a well-defined disk are observed in the same manner as fixed stars.

Fixed stars are observed in different ways, the mode adopted depending upon circumstances:

α. If the star is within 5° of the pole, its transit is observed by eye and ear over the wires of set C, and it is bisected with the zenith-distance micrometer at wires C_2, C_3, C_4; or sometimes at each of the wires from C_1 to C_5.

β. If the star is situated between 5° and 20° of polar distance, its transit is observed by the chronographic method over the wires of set C; and it is bisected with the zenith-distance micrometer at any two of the wires B_1, B_3, D_1, D_3; preference being given to the combinations B_3, D_1, or B_1, D_3; which make the observation symmetrical with respect to the middle wire.

γ. If the polar distance of the star exceeds 20°, its transit is observed by the chronographic method over all the wires from B_1 to D_3; and it is bisected with the zenith distance micrometer at any two of the wires I, II, VI, VII; preference being given to the combinations II, VI, or I, VII, which make the observation symmetrical with respect to the middle wire. Sometimes stars are bisected at each of the wires I, II, VI, VII.

δ. In the case of double stars, the right ascension of one component is observed over the wires B_1, B_2, B_3, D_1, D_2, D_3, and that of the other, over the wires C_1 to C_5. Bisections with the zenith-distance micrometer are made, of one component at wires I and II, and of the other component at wires VI and VII. The observations of right ascenison are therefore symmetrical, and those of zenith distance unsymmetrical, with respect to the middle wire.

ε. Sometimes on account of clouds, or other untoward circumstances, observations are unavoidably made unsymmetrical with respect to the middle wire, both in right ascension and zenith distance.

In observing transits by eye and ear, care is taken to use the beat of the chronograph pen, and not the tick of the counting clock. Whenever it is necessary to stop the chronograph, it is done about 1 second, and the hour and minute corresponding to the preceding 0 seconds is recorded on the sheet from the face of the counting-clock. As there is generally only a single record in each case, errors of a second, or of a minute, sometimes occur. It will be noticed that the method of observing all objects more than 5° from the pole is such as to occupy the observer's attention with the determination of but one co-ordinate at a time.

Wire Intervals.—The equatorial intervals of the fixed vertical wires in the eyepiece of the telescope were determined from observations made between February 2 and May 9, 1870. Fourteen stars were employed, all situated within 15° of the pole, and the total number of sets of transits observed was 73. The results are as follows:

TABLE II.

	s.	
s.	$C_1 = + 4.085$	s.
$B_1 = + 12.232$	$C_2 = + 2.052$	$D_1 = - 8.161$
$B_2 = + 9.677$	$C_3 = + 0.007$	$D_2 = - 9.680$
$B_3 = + 8.138$	$C_4 = - 2.022$	$D_3 = - 12.250$
	$C_5 = - 4.063$	

As already explained, the transits of objects more than 20° from the pole are observed over all these wires, but, in reading off the chronograph sheets, C_1 and C_5 are rejected. The remaining nine wires are considered the standard set, and the numbers given above are the equatorial intervals of each wire from the mean of the standard set.

Micrometer Screws.—The value of the zenith distance micrometer screw used during 1870, is the same that has been adopted for several years past; namely,

$$\text{One Revolution} = 15''.320 + 0''.0068\,(r - 30)$$

where r is the reading of the screw at the point for which the value of a revolution is required. When the middle pair of micrometer wires occupies the center of the space between the fixed horizontal wires, the reading of the screw is 30 revolutions, and it increases as the wires move from the micrometer head.

The pitch of the right-ascension micrometer screw is sensibly the same as that of the zenith-distance micrometer. The adopted value is

$$\text{One Revolution} = 1^{s}.020$$

Inclination of Wires.—The zenith-distance micrometer is constructed with its movable wires as nearly as possible at right angles to the fixed vertical wires; and as the latter are set by adjustment truly vertical, the former are of course very nearly horizontal; but owing to unavoidable imperfections of workmanship, they are seldom accurately so. This is of no consequence when the bisections of an object with the zenith-distance micrometer are made symmetrically with respect to wire IV; but if they are not so made, it affects the resulting zenith distance, and a correction must be applied for inclination of wires. It is computed by the formula

$$\text{Correction} = \pm \frac{Ri\,(r_{\text{i}} - r_{\text{vii}})}{I} = \pm\, 0.209\, i\,(r_{\text{i}} - r_{\text{vii}})$$

where the upper sign must be taken when the clamp is east, the lower when it is west. R is the value of one revolution of the micrometer screw; i the equatorial interval between the middle wire and the wire at which the correction is required; I, the equatorial interval between wires I and VII; and r_{i} and r_{vii}, the readings of the zenith-distance micrometer on a star at wires I and VII. The sign of i is + for wires I, II, III, and — for wires V, VI, VII.

Error of Collimation.—The collimation constant is determined, without reversing the instrument, by means of the collimators. The south one is designated "collimator A," and its field of view contains two parallel vertical wires, distant from each other about 11″.8, which are crossed at their middle point by a single horizontal wire. The north collimator is designated "collimator B," and its field of view is furnished with a single vertical wire, crossed at its middle point by a single horizontal wire.

After removing the covers of the opening through the central cube of the telescope, it is turned in zenith distance until, on looking into its eye-piece, its horizontal wire is seen to coincide with the image of the horizontal wire of collimator A. Then collimator A is moved in azimuth, by means of the screws which act against one of its **Y**'s, until, on looking into its eye-piece, the image of the middle transit wire of the telescope is seen to be about midway between the two vertical wires. Returning to the telescope, three measures of the small deviation of its middle transit wire from the mean of the images of the two vertical wires of the collimator are made by means of the right-ascension micrometer. These measures are taken by first setting the micrometer wire so that the mean of it and the middle transit wire coincides with the mean of the images of the two vertical wires of the collimator, and then moving the micrometer wire till it coincides with the middle transit wire. The required deviation is one-half the space passed over.

The telescope is next pointed toward the zenith, so as to make the two collimators visible from each other through its central cube, and collimator B is moved in azimuth till its vertical wire is exactly midway between the two vertical wires of collimator A. The telescope is then pointed to collimator B, and four measures of the small deviation of its middle transit wire, from the image of the vertical wire of the collimator, are made by means of the right-ascension micrometer as follows: The micrometer wire is placed so that the space between it and the middle transit wire is bisected by the image of the vertical wire of the collimator, after which the micrometer is moved till its wire coincides with the middle transit wire. The required deviation is one-half the space passed over.

The telescope being once more pointed toward the zenith, the adjustment of collimator A is deranged, and it is adjusted afresh till the space between its two vertical wires is again exactly bisected by the image of the vertical wire of collimator B. Then going to the telescope, another set of measures precisely similar to the first are made. The mean of the first and last set of measures is taken as the true distance of the middle transit wire from the mean of the images of the vertical wires of collimator A.

Let

$c_\tau =$ sum of the collimation constant and the constant of diurnal aberration at the temperature of τ° Fahrenheit;

$c_0 =$ sum of the same constants at the temperature of 0° Fahrenheit;

$M =$ distance, in micrometer revolutions, by which the mean of the images of the vertical wires of the south collimator is to the *east* of the middle transit wire;

$M' =$ distance, in micrometer revolutions, by which the image of the vertical wire of the north collimator is to the *east* of the middle transit wire;

$R' =$ value, in seconds of time, of one revolution of the micrometer screw $= 1^s.02$;

$\varphi =$ latitude of place of observation;

$\delta i =$ reduction of position of middle transit wire to the mean of the set of nine wires $= +0^s.008$,

Then, if M and M' have been observed at the temperature τ, we have

$$c_\tau = \tfrac{1}{2}(M + M')R' - 0^s.021 \cos\varphi - \delta i = 0^s.510\,(M + M') - 0^s.024$$

In the instrument under consideration the collimation varies with the temperature, and from a discussion of many observations, taken at widely different temperatures, it has been found that

$$c_0 = c_\tau - 0^s.004\,\tau$$

The collimators are usually observed every Monday morning, and the value of c is computed. For observations on other days the value of c_0 is interpolated, and from it, and the observed temperature at the time, the actual collimation constant is computed by means of the formula

$$c_\tau = c_0 + 0^s.004\,\tau$$

Error of Level.—The level is of the hanging form. Its tube is three-quarters of an inch in diameter, ten inches long, and has a chamber at one end, so that the size of the bubble is adjustable. It seems to be most sensitive when its length is about one and one-quarter inches. The scale is numbered continuously from end to end, the numbers running from 0 to 90. The length of one division is 0.0895 of an inch, and its value $0^s.058$.

In making use of the level it is always reversed twice, thus giving two readings with it direct and two with it reversed.

Let

$b =$ level constant;

W and $E =$ readings of west and east ends of bubble with the level in its first position;

w and $e =$ readings of west and east ends of bubble with the level reversed;

W' and $E' =$ readings of west and east ends of bubble when the level is returned to its first position;

w' and e' = readings of west and east ends of bubble when the level is reversed a second time.

Then we have

$$b = 0^{s}.00725\,[(W+E)+(W'+E')-(w+e)-(w'+e')]$$

When the $\left\{\begin{matrix}\text{west}\\\text{east}\end{matrix}\right\}$ end of the bubble gives the greatest reading the sign of b is $\left\{\begin{matrix}+\\-\end{matrix}\right.$

For reflected observations the sign of b is the opposite of that here given.

A careful investigation has proved that the pivots of the instrument are sensibly round, and equal in diameter.

Error of Azimuth.—The azimuth constant is determined from the observed time of transit of some one or more of the stars, Polaris, δ Ursæ Minoris, 51 Cephei, λ Ursæ Minoris, by means of the formula

$$a = \frac{\alpha - (T + \varDelta T + bB + cC)}{A}$$

in which a, b, and c are the azimuth, level, and collimation constants; A, B, and C, the azimuth, level, and collimation factors; α, the adopted right ascension of the star; T, its time of transit as observed by the face of the clock; and $\varDelta T$, a closely approximate value of the clock correction at the time T.

When double transits of any of the stars named above are obtained by one observer, during a single observing-day, the azimuth is generally made to depend upon them alone. If no double transits are available, the adopted azimuth is the mean of the results given by the single transits of so many of the stars in question as may have been observed.

It occasionally happens that a number of observations are got, but, owing to the interference of clouds, no azimuth stars are obtained. In such cases each known star observed is made to furnish an equation of condition, involving as unknown quantities the clock correction and the azimuth constant, and from all the equations thus formed these quantities are determined by the method of least squares.

Zenith-Point Correction.—This constant is determined by observations of the nadir point, made over a trough of mercury, with a Bohnenberger collimating eye-piece, in the following manner:

1. The telescope is pointed vertically downward over a trough of mercury, and then it is clamped, and set by the tangent screw, so that the circle reading is as nearly as possible 179° 56′.

2. Circle B is read by means of its four micrometer microscopes.

3. Two readings of the telescope zenith-distance micrometer are taken by placing its close pair of declination wires so that they are separated from their images by a space equal to the distance between the two wires, the wires and their images exhibiting four parallel lines with three equal spaces between them, and the micrometer reading of the wires being less than that of their images.

4. Four readings of the micrometer are taken precisely as described in paragraph 3, except that the places of the wires and their images are interchanged, the reading of the wires being now greater than that of their images.

5. Two more readings of the micrometer are taken exactly as described in paragraph 3.

6. Circle B is again read.

If we imagine a mean wire bisecting the space between the close pair of declination wires, it is evident that the mean of the eight micrometer readings, made as described in paragraphs 3, 4, and 5, will be identical with the reading which would have been obtained by causing this imaginary mean wire to cover its own image. The two circle readings serve as a check on each other, and prevent the possibility of any undetected shift of the telescope while the zenith-distance micrometer readings are in progress.

The observations are reduced by means of the formula.

$$\text{Zenith Point Correction} = + \left\{ \begin{array}{l} 180^\circ + \text{Division Correction for Circle B} \\ \qquad + \text{Correction for Flexure of Circle B} \\ \qquad + \text{Correction for Flexure of Telescope} \\ \qquad - \text{Constant added to Reduction to Meridian.} \end{array} \right\}$$

$$- \left\{ \begin{array}{l} 179^\circ\ 56' + 10 \text{ Revolutions of Micrometer Microscopes} \\ \qquad - \text{Observed Reading of Micrometer Microscopes} \\ \qquad + \text{Micrometer Equivalent corresponding to (Observed Reading of Zenith-Distance Micrometer} + 0^{r}.250\text{).} \end{array} \right\}$$

The values of the division and flexure corrections are found by means of the formulæ given for reflected observations in Tables VIII, IX, X, and XI. The constant added to the reduction to the meridian is + 1″.80.

The value of the first term in the expression for the zenith-point correction is a constant, and may be computed for the year 1870 thus: During that year the position of the instrument was clamp east; circle B was used, and, when the telescope pointed to the zenith, the horizontal microscope of that circle read 0°.0, which is the value of R_0. The distance of the nadir point from the reflected pole is 51°.1, which is the value of $\varDelta$. With these data, Table IX gives 0° as the argument with which to enter Table VIII in order to obtain the division-correction, and the division-correction itself is thus found to be + 0″.30. With the same data Table X gives the correction for circle flexure, + 1″.20 sin 134°.3 = + 0″.86; and Table XI gives the correction for flexure of telescope, + 0″.99 sin 342°.3 = − 0″.30. Collecting our results, we have

	180° 0′ 0″.00
Correction for Errors of Division, - - -	+ 0″.30
Correction for Flexure of Circle, - - -	+ 0″.86
Correction for Flexure of Telescope, - -	− 0″.30
Constant added to Reduction to Meridian, -	− 1″.80
Sum, - - - - - - - - -	179° 59′ 59″.06

which is the value of the first term of the zenith-point correction. The second term is simply the concluded circle-reading; the correction + 0^r.250 to the observed reading of the zenith-distance micrometer being due to the fact that the head of that micrometer has four indexes, and the one used in the nadir observation reads one-quarter of a revolution less than that employed when celestial objects are observed.

The observations of nadir point made during the year, together with the resulting zenith-point corrections, may be found in Table E at the end of this introduction. The first column gives the mean day and tenth of a day, and the second column gives the nearest sidereal hour; thus defining the time of observation within thirty minutes. The third column contains the observer's initial. The fourth, fifth, sixth, and seventh columns contain the readings of the micrometer microscopes when the telescope was pointed to the nadir; the divisions of circle B, upon which the readings were actually made, being as follows:

Microscope I, - - - - - - - - - -	135° 0′
Microscope II, - - - - - - - - - -	225° 0′
Microscope III, - - - - - - - - - -	315° 0′
Microscope IV, - - - - - - - - - -	45° 0′

As already explained, the degrees and minutes of the circle reading are referred to the horizontal microscope of circle A, which reads 179° 56′ when the telescope points to the nadir. The whole revolutions of microscope I are not usually recorded, because the circle is habitually so set as to make them as nearly as possible 10. If they differ more than about 10″ from that quantity they are carefully noted.

The eighth column contains the readings of the telescope zenith-distance micrometer for coincidence of each wire of its close pair with the image of the adjoining wire; or, in other words, for coincidence of the imaginary mean wire with its image. Each of the numbers here recorded is the mean of eight readings taken in the manner described above. The ninth column gives the concluded circle readings for the nadir point. The tenth column contains the resulting zenith-point corrections, which should have been obtained by subtracting the concluded circle readings from the constant 179° 59′ 59″.06. By mistake, the constant actually employed was 179° 59′ 59″.36. Therefore, all the zenith-point corrections are too great by 0″.30, and the polar distances obtained from direct observations are too great, and those obtained from reflected observations are too small, by the same quantity. This error has been allowed for in computing the final systematic corrections to the observed north-polar distances.

EXPLANATION OF THE PRINTED OBSERVATIONS WITH THE TRANSIT CIRCLE.

These observations are contained on pages 1 to 87, and, in printing them, the rule has been adopted to give everything exactly as recorded by the observer, without alteration in any case whatever, and without addition, except in very rare cases, which are noted at the foot of the page. When a record seems erroneous, the error is pointed out by a foot-note if necessary. Where there is no reasonable doubt of the nature of an error, a corresponding correction is introduced at such stage of the reductions as is most convenient, but it has not been found practicable to adhere to any invariable rule respecting the point of introduction of such corrections.

Beginning with the left-hand pages, on which are printed the observations of right ascension,

The column "*Date*" contains the astronomical date, which is always about twelve hours behind the civil date. The day is supposed to commence with the transit of the sun.

The column "*Number*" contains the number for convenience of reference.

The column "*Object*" contains the name of the object. In the case of the sun, moon, and planets the part observed is always specified; I and II indicating respectively the preceding and following limbs; N. and S. the north and south limbs; N. C. and S. C. the north and south cusps; and C. the center. The latter is observed only when a planet is so small and round that the edges of its disk cannot be bisected with accuracy. When but one component of a double star is observed, it is always the brighter of the two unless otherwise stated.

The column "*Observer*" contains the initial of the observer, as follows:

Ha.—Professor William Harkness.
H.—Professor A. Hall.
E.—Professor J. R. Eastman.
F.—Assistant Observer Edgar Frisby.
S.—Assistant Observer Ormond Stone.

The nine columns under the head "*Seconds of Transit over Wires*" contain the seconds and tenths of the observed time of transit over each wire. Objects observed over the standard set of nine wires, viz, set B, C_2 to C_4, and set D, are recorded in the columns I to IX; those observed only over set C are recorded in the columns III to VII; those observed only over sets B and D, in the columns I to III and VII to IX; those observed only over sets B and C, in the columns I to VIII; and those observed only over sets C and D, in the columns II to IX. In the case of irregular observations, the wires can generally be identified by means of the intervals between the times of transit. Transits below the pole are recorded in an order the reverse of that actually observed, so that each wire occupies the same column it would have done if the transit had been above the pole.

The column "*Mean Wire*" contains the time of transit over an imaginary wire whose position is the mean of the standard set of nine wires. When an object has been observed over all the wires of the standard set, their mean is, of course, its time of transit over the imaginary wire. For objects not so observed the method of reduction is as follows:

Let

T_0 = time of transit of object over imaginary wire;
T = observed time of transit of object over any wire;
i = equatorial interval between that wire and the imaginary mean wire;
δ = geocentric declination of object;

$\varDelta\alpha =$ number of seconds of time which the sun, or a planet, changes its right ascension while passing over the space between two terrestrial meridians separated from each other by one hour of longitude, or, in other words, its change of right ascension in one hour of longitude;

$D\alpha =$ number of minutes by which the moon increases her mean time of meridian passage in one hour of terrestrial longitude;

$\zeta =$ geocentric zenith distance of object;

$\zeta' =$ apparent zenith distance of object,

Then, for a star

$$T_6 = T + i \sec \delta$$

or, if i is large and the star very near the pole,

$$T_0 = T + i \sec \delta \times k$$

$$k = \frac{I \sin 15''}{\sin I}$$

$$\sin I = \sin i \sec \delta$$

The values of log k are as follows:

TABLE III.—*Values of Log k.*

I.	Log (i sec δ).	Log k.	I.	Log (i sec δ).	Log k.
m.			m.		
1	1.778	0.00000	16	2.982	.00035
2	2.079	.00001	17	3.008	.00040
3	2.255	.00001	18	3.033	.00045
4	2.380	.00002	19	3.056	.00050
5	2.477	.00003	20	3.079	.00055
6	2.556	.00005	21	3.100	.00061
7	2.623	.00007	22	3.120	.00067
8	2.681	.00009	23	3.139	.00073
9	2.732	.00011	24	3.158	.00080
10	2.778	.00014	25	3.175	.00086
11	2.819	.00017	26	3.192	.00093
12	2.857	.00020	27	3.209	.00101
13	2.892	.00023	28	3.224	.00108
14	2.924	.00027	29	3.239	.00116
15	2.954	.00031	30	3.254	0.00124

For the sun, or a planet,

$$T_0 = T + i \sec \delta \times E$$

$$\log E = 0.00012 \varDelta\alpha$$

For the sun it is always sufficiently accurate to take log $E = 0.0012$.

For the moon the following formula, founded on that of Sir G. B. Airy, is employed:

$$T_0 = T + i \sec \delta \times F \times G$$

$$F = \frac{1.00274\ (60 + D\alpha)}{60}$$

$$G = \frac{\sin \zeta}{\sin \zeta'} = 1 - \rho \sin \pi \cos (\varphi' - \delta)$$

in which φ' is the geocentric latitude of the transit circle $= 38^\circ\ 42'\ 24''.3$; ρ, its geocentric distance, $\log \rho = 9.9994302$; π, the moon's equatorial horizontal parallax; and 1.00274, the factor for converting mean into sidereal time. To facilitate the application of this formula the following tables have been computed:

TABLE IV.—*Logarithms of the Factor F for reducing Imperfect Transits of the Moon.*

[ARGUMENT.—Change of Moon's mean time of transit in one hour of terrestrial longitude.]

Da	Log *G.*	*Da*	Log *G.*	*Da*	Log *G.*	*Da*	Log *G.*
m.		m.		m.		m.	
1.60	0.01262	1.90	0.01473	2.20	0.01683	2.50	0.01891
1.62	.01276	1.92	.01487	2.22	.01697	2.52	.01905
1.64	.01290	1.94	.01501	2.24	.01711	2.54	.01919
1.66	.01305	1.96	.01515	2.26	.01725	2.56	.01933
1.68	.01319	1.98	.01529	2.28	.01738	2.58	.01947
1.70	0.01333	2.00	0.01543	2.30	0.01752	2.60	0.01961
1.72	.01347	2.02	.01557	2.32	.01766	2.62	.01975
1.74	.01361	2.04	.01571	2.34	.01780	2.64	.01989
1.76	.01375	2.06	.01585	2.36	.01794	2.66	.02002
1.78	.01389	2.08	.01599	2.38	.01806	2.68	.02016
1.80	0.01403	2.10	0.01613	2.40	0.01822	2.70	0.02030
1.82	.01417	2.12	.01627	2.42	.01836	2.72	.02044
1.84	.01431	2.14	.01641	2.44	.01850	2.74	.02058
1.86	.01445	2.16	.01655	2.46	.01863	2.76	.02072
1.88	.01459	2.18	.01669	2.48	.01877	2.78	.02086

TABLE V.—*Logarithms of the Factor G for reducing Imperfect Transits of the Moon.*

Moon's Geocentric N. P. D.	Moon's Equatorial Horizontal Parallax.									Moon's Geocentric Declination.
	54′	55′	56′	57′	58′	59′	60′	61′	62′	
°										°
62	9·99325	9·99313	9·99301	9·99288	9·99275	9·99262	9·99249	9·99236	9·99224	+ 28
63	·99327	·99316	·99304	·99290	·99278	·99265	·99252	·99239	·99227	27
64	·99330	·99318	·99306	·99293	·99280	·99267	·99255	·99242	·99230	26
65	·99333	·99321	·99309	·99296	·99283	·99271	·99258	·99245	·99233	25
66	9·99336	9·99323	9·99311	9·99299	9·99286	9·99274	9·99261	9·99249	9·99237	+ 24
67	·99340	·99327	·99315	·99303	·99290	·99278	·99265	·99253	·99241	23
68	·99343	·99331	·99318	·99306	·99294	·99282	·99269	·99257	·99245	22
69	·99347	·99335	·99322	·99310	·99298	·99286	·99273	·99262	·99249	21
70	·99351	·99339	·99326	·99314	·99302	·99290	·99278	·99266	·99254	20
71	9·99355	9·99343	9·99330	9·99318	9·99306	9·99295	9·99282	9·99271	9·99258	+ 19
72	·99359	·99347	·99335	·99323	·99311	·99299	·99287	·99275	·99263	18
73	·99364	·99352	·99339	·99328	·99316	·99304	·99292	·99280	·99269	17
74	·99368	·99356	·99344	·99332	·99321	·99309	·99297	·99284	·99274	16
75	·99373	·99361	·99349	·99338	·99326	·99315	·99302	·99290	·99279	15
76	9·99378	9·99366	9·99355	9·99343	9·99332	9·99320	9·99308	9·99296	9·99285	+ 14
77	·99383	·99372	·99360	·99349	·99338	·99327	·99314	·99302	·99291	13
78	·99389	·99378	·99366	·99355	·99344	·99333	·99321	·99309	·99298	12
79	·99395	·99384	·99372	·99361	·99350	·99339	·99327	·99315	·99304	11
80	·99401	·99390	·99378	·99367	·99356	·99345	·99333	·99322	·99311	10
81	9·99407	9·99396	9·99384	9·99373	9·99362	9·99351	9·99340	9·99329	9·99318	+ 9
82	·99413	·99402	·99391	·99380	·99369	·99358	·99347	·99336	·99325	8
83	·99419	·99408	·99397	·99386	·99376	·99365	·99354	·99343	·99332	7
84	·99425	·99414	·99404	·99393	·99383	·99372	·99361	·99350	·99339	6
85	·99431	·99421	·99411	·99400	·99390	·99379	·99368	·99358	·99347	5
86	9·99438	9·99428	9·99418	9·99407	9·99397	9·99387	9·99376	9·99365	9·99355	+ 4
87	·99445	·99435	·99425	·99414	·99405	·99394	·99384	·99373	·99363	3
88	·99453	·99443	·99433	·99422	·99412	·99402	·99392	·99381	·99371	2
89	·99460	·99450	·99440	·99430	·99420	·99410	·99400	·99389	·99380	+ 1
90	·99468	·99458	·99448	·99438	·99428	·99418	·99408	·99398	·99388	0
91	9·99475	9·99466	9·99456	9·99446	9·99436	9·99426	9·99417	9·99407	9·99397	— 1
92	·99483	·99474	·99464	·99454	·99445	·99435	·99425	·99416	·99406	2
93	·99491	·99482	·99472	·99462	·99454	·99444	·99434	·99425	·99415	3
94	·99499	·99490	·99480	·99471	·99462	·99453	·99443	·99434	·99425	4
95	·99507	·99499	·99489	·99480	·99471	·99462	·99453	·99444	·99434	5
96	9·99516	9·99507	9·99498	9·99489	9·99480	9·99471	9·99462	9·99453	9·99444	— 6
97	·99525	·99516	·99507	·99498	·99490	·99481	·99472	·99463	·99454	7
98	·99534	·99525	·99517	·99508	·99500	·99491	·99482	·99473	·99464	8
99	·99542	·99534	·99526	·99517	·99510	·99501	·99492	·99484	·99474	9
100	·99552	·99544	·99536	·99527	·99519	·99511	·99502	·99494	·99485	10
101	9·99561	9·99553	9·99545	9·99537	9·99529	9·99521	9·99513	9·99505	9·99496	— 11
102	·99571	·99563	·99555	·99547	·99539	·99531	·99523	·99515	·99506	12
103	·99580	·99573	·99565	·99557	·99550	·99542	·99534	·99526	·99518	13
104	·99590	·99583	·99575	·99568	·99560	·99552	·99544	·99537	·99529	14
105	·99600	·99593	·99585	·99578	·99570	·99563	·99555	·99548	·99540	15
106	9·99610	9·99603	9·99596	9·99589	9·99581	9·99574	9·99566	9·99559	9·99552	— 16
107	·99620	·99613	·99606	·99600	·99592	·99585	·99577	·99571	·99563	17
108	·99630	·99624	·99617	·99610	·99603	·99596	·99589	·99582	·99575	18
109	·99640	·99635	·99627	·99621	·99614	·99608	·99600	·99594	·99587	19
110	·99651	·99645	·99638	·99632	·99625	·99619	·99612	·99606	·99599	20
111	9·99661	9·99656	9·99648	9·99642	9·99636	9·99630	9·99624	9·99618	9·99611	— 21
112	·99672	·99666	·99659	·99653	·99647	·99641	·99635	·99629	·99623	22
113	·99682	·99677	·99670	·99664	·99658	·99652	·99647	·99641	·99635	23
114	·99693	·99687	·99681	·99676	·99670	·99664	·99659	·99653	·99647	24
115	·99703	·99698	·99692	·99687	·99682	·99676	·99671	·99665	·99660	25
116	9·99714	9·99709	9·99704	9·99699	9·99694	9·99689	9·99683	9·99678	9·99672	— 26
117	·99725	·99720	·99715	·99710	·99706	·99701	·99695	·99690	·99685	27
118	·99736	·99731	·99727	·99722	·99718	·99713	·99708	·99703	·99698	— 28

Each wire over which an object has been observed thus furnishes one value of its time of transit over the imaginary wire, and the mean of all the values so found is the quantity entered in the column "*Mean Wire.*"

The column "*Inst.*," under the general head "*Corrections,*" contains the sum of the instrumental corrections; or, in other words, the quantity

$$Aa + Bb + Cc$$

in which a, b, and c are the constants, and A, B, and C, the factors, for azimuth, level, and collimation. The methods of finding a, b, and c have been already given. For reflected observations the sign of b is the reverse of that which it is for direct ones. The formulæ for computing A, B, and C are

$$\begin{aligned} A &= \sin(\varphi - \delta) \sec \delta = \sin \varphi - \cos \varphi \tan \delta \\ B &= \cos(\varphi - \delta) \sec \delta = \cos \varphi + \sin \varphi \tan \delta \\ C &= \sec \delta \end{aligned}$$

in which φ is the latitude of the place of observation, and δ the declination of the object observed. For a culmination below the pole, $180^\circ - \delta$ must be substituted instead of δ. The following rules are sometimes convenient for determining the signs of these quantities:

A is positive, except for stars between the zenith and the pole.

B and C are positive, except for stars below the pole.

Table VI gives, both for direct and reflected observations, the values of the factors A, B, C, for each degree of north polar distance, to the arguments north polar distance and zenith distance south. The tables actually employed in making the reductions are much more extensive, giving the values of the quantities Aa, Bb, Cc, for each degree of zenith distance, and for each $0^s.01$ of the constants a, b, c, from $0^s.00$ to $0^s.50$.

TABLE VI.—*Values of the Factors A, B, C, for reducing Observations of Right Ascension.*

Zenith Distance South.	Zenith Distance South.	*A*	*B*	*C*	North Polar Distance.	North Polar Distance.
°	°				°	°
275	265	+ 1.786	− 0.156	− 1.793	326.1	316.1
276	264	.830	.193	.841	327.1	315.1
277	263	.878	.231	.892	328.1	314.1
278	262	.927	.271	1.947	329.1	313.1
279	261	1.981	.314	2.006	330.1	312.1
280	260	+ 2.036	− 0.359	− 2.069	331.1	311.1
281	259	.097	.406	.137	332.1	310.1
282	258	.160	.460	.210	333.1	309.1
283	257	.230	.515	.289	334.1	303.1
284	256	.301	.574	.375	335.1	307.1
285	255	+ 2.382	− 0.639	− 2.468	336.1	306.1
286	254	.469	.708	.570	337.1	305.1
287	253	.564	.784	.681	338.1	304.1
288	252	.666	.866	.803	339.1	303.1
289	251	.777	0.953	2.938	340.1	302.1
290	250	+ 2.901	− 1.056	− 3.087	341.1	301.1
291	249	3.037	.167	.254	342.1	300.1
292	248	.189	.289	.441	343.1	299.1
293	247	.360	.427	.652	344.1	298.1
294	246	.553	.583	3.891	345.1	297.1
295	245	+ 3.774	− 1.761	− 4.164	346.1	296.1
296	244	4.026	1.965	.481	347.1	295.1
297	243	.322	2.204	4.852	348.1	294.1
298	242	4.670	.486	5.291	349.1	293.1
299	241	5.088	2.822	5.820	350.1	292.1
300	240	+ 5.599	− 3.235	− 6.468	351.1	291.1
301	239	6.239	3.751	7.281	352.1	290.1
302	238	7.062	4.416	8.331	353.1	289.1
303	237	8.163	5.305	9.738	354.1	288.1
304	236	9.717	6.555	11.721	355.1	287.1
305	235	+ 12.062	− 8.446	− 14.725	356.1	286.1
306	234	16.023	11.641	19.806	357.1	285.1
307	233	24.162	18.207	30.255	358.1	284.1
308	232	+ 50.497	− 39.453	− 64.090	359.1	283.1
309	231	−420.509	+340.522	+541.094	0.1	282.1
310	230	− 39.693	+ 33.306	51.826	1.1	281.1
311	229	20.539	17.854	27.186	2.1	280.1
312	228	13.716	12.350	18.455	3.1	279.1
313	227	10.215	9.525	13.957	4.1	278.1
314	226	8.085	7.806	11.236	5.1	277.1
315	225	− 6.648	+ 6.648	+ 9.401	6.1	276.1
316	224	5.613	5.816	8.083	7.1	275.1
317	223	4.834	5.187	7.092	8.1	274.1
318	222	4.226	4.696	6.319	9.1	273.1
319	221	3.737	4.301	5.699	10.1	272.1

Table VI.—*Values of the Factors A, B, C, &c.*—Continued.

Zenith Distance South.	Zenith Distance South.	*A*	*B*	*C*	North Polar Distance.	North Polar Distance.
°	°				°	°
320	220	− 3.335	+ 3.978	+ 5.191	11.1	271.1
321	219	2.999	.706	4.768	12.1	270.1
322	218	.713	.475	.410	13.1	269.1
323	217	.468	.277	4.103	14.1	268.1
324	216	.255	3.105	3.837	15.1	267.1
325	215	− 2.066	+ 2.953	+ 3.605	16.1	266.1
326	214	1.900	2.819	3.400	17.1	265.1
327	213	.753	.700	.218	18.1	264.1
328	212	.619	.591	3.055	19.1	263.1
329	211	.498	.494	2.999	20.1	262.1
330	210	− 1.388	+ 2.405	+ 2.777	21.1	261.1
331	209	.288	.324	.657	22.1	260.1
332	208	.196	.249	.548	23.1	259.1
333	207	.111	.181	.448	24.1	258.1
334	206	1.033	.118	.357	25.1	257.1
335	205	− 0.960	+ 2.060	+ 2.273	26.1	256.1
336	204	.892	2.005	.195	27.1	255.1
337	203	.830	1.954	.123	28.1	254.1
338	202	.770	.907	2.056	29.1	253.1
339	201	.714	.861	1.994	30.1	252.1
340	200	− 0.662	+ 1.819	+ 1.936	31.1	251.1
341	199	.612	.779	.882	32.1	250.1
342	198	.565	.741	.831	33.1	249.1
343	197	.521	.706	.784	34.1	248.1
344	196	.479	.672	.739	35.1	247.1
345	195	− 0.439	+ 1.639	+ 1.697	36.1	246.1
346	194	.400	.608	.658	37.1	245.1
347	193	.364	.579	.621	38.1	244.1
348	192	.329	.550	.586	39.1	243.1
349	191	.295	.524	.552	40.1	242.1
350	190	− 0.264	+ 1.498	+ 1.521	41.1	241.1
351	189	.233	.473	.492	42.1	240.1
352	188	.204	.449	.464	43.1	239.1
353	187	.175	.426	.437	44.1	238.1
354	186	.147	.403	.412	45.1	237.1
355	185	− 0.120	+ 1.382	+ 1.388	46.1	236.1
356	184	.095	.361	.365	47.1	235.1
357	183	.070	.341	.344	48.1	234.1
358	182	.046	.322	.323	49.1	233.1
359	181	− 0.023	.303	.304	50.1	232.1
0	180	0.000	+ 1.285	+ 1.285	51.1	231.1
1	179	+ 0.022	.267	.267	52.1	230.1
2	178	.044	.250	.250	53.1	229.1
3	177	.065	.233	.234	54.1	228.1
4	176	.085	.216	.219	55.1	227.1

TABLE VI.—*Values of the Factors A, B, C, &c.*—Continued.

Zenith Distance South.	Zenith Distance South.	*A*	*B*	*C*	North Polar Distance.	North Polar Distance.
°	°				°	°
5	175	+ 0.105	+ 1.200	+ 1.205	56.1	226.1
6	174	.125	.184	.191	57.1	225.1
7	173	.144	.169	.178	58.1	224.1
8	172	.163	.154	.165	59.1	223.1
9	171	.181	.139	.154	60.1	222.1
10	170	+ 0.199	+ 1.125	+ 1.142	61.1	221.1
11	169	.216	.110	.132	62.1	220.1
12	168	.234	.096	.121	63.1	219.1
13	167	.251	.083	.112	64.1	218.1
14	166	.267	.069	.102	65.1	217.1
15	165	+ 0.283	+ 1.056	+ 1.094	66.1	216.1
16	164	.300	.043	.086	67.1	215.1
17	163	.315	.030	.078	68.1	214.1
18	162	.331	.018	.070	69.1	213.1
19	161	.346	.005	.064	70.1	212.1
20	160	+ 0.362	+ 1.993	+ 1.057	71.1	211.1
21	159	.377	.981	.051	72.1	210.1
22	158	.392	.969	.045	73.1	209.1
23	157	.406	.957	.040	74.1	208.1
24	156	.421	.945	.035	75.1	207.1
25	155	+ 0.436	+ 1.933	+ 1.030	76.1	206.1
26	154	.450	.922	.026	77.1	205.1
27	153	.464	.910	.022	78.1	204.1
28	152	.479	.899	.018	79.1	203.1
29	151	.493	.887	.015	80.1	202.1
30	150	+ 0.507	+ 1.876	+ 1.012	81.1	201.1
31	149	.520	.865	.010	82.1	200.1
32	148	.534	.854	.007	83.1	199.1
33	147	.548	.843	.005	84.1	198.1
34	146	.561	.832	.004	85.1	197.1
35	145	+ 0.575	+ 1.821	+ 1.002	86.1	196.1
36	144	.588	.810	.001	87.1	195.1
37	143	.602	.799	.001	88.1	194.1
38	142	.616	.788	.000	89.1	193.1
39	141	.630	.777	.000	90.1	192.1
40	140	+ 0.643	+ 1.766	+ 1.000	91.1	191.1
41	139	.657	.755	.001	92.1	190.1
42	138	.670	.744	.002	93.1	189.1
43	137	.684	.733	.003	94.1	188.1
44	136	.697	.722	.004	95.1	187.1
45	135	+ 0.711	+ 1.711	+ 1.006	96.1	186.1
46	134	.724	.700	.008	97.1	185.1
47	133	.738	.689	.010	98.1	184.1
48	132	.752	.678	.013	99.1	183.1
49	131	.766	.666	.016	100.1	182.1

TABLE VI.—*Values of the Factors A, B, C, &c.*—Continued.

Zenith Distance South.	Zenith Distance South.	*A*	*B*	*C*	North Polar Distance.	North Polar Distance.
°	°				°	°
50	130	+ 0.780	+ 1.655	+ 1.019	101.1	181.1
51	129	.794	.644	.023	102.1	180.1
52	128	.809	.632	.027	103.1	179.1
53	127	.823	.620	.031	104.1	178.1
54	126	.838	.608	.036	105.1	177.1
55	125	+ 0.853	+ 1.597	+ 1.041	106.1	176.1
56	124	.868	.585	.046	107.1	175.1
57	123	.882	.573	.052	108.1	174.1
58	122	.897	.561	.058	109.1	173.1
59	121	.913	.548	.065	110.1	172.1
60	120	+ 0.928	+ 1.536	+ 1.072	111.1	171.1
61	119	.944	.523	.079	112.1	170.1
62	118	.959	.510	.087	113.1	169.1
63	117	.976	.497	.095	114.1	168.1
64	116	.992	.484	.104	115.1	167.1
65	115	+ 1.009	+ 1.470	+ 1.114	116.1	166.1
66	114	.026	.456	.123	117.1	165.1
67	113	.043	1.443	.134	118.1	164.1
68	112	.060	0.429	.144	119.1	163.1
69	111	.079	.414	.156	120.1	162.1
70	110	+ 1.097	+ 0.399	+ 1.168	121.1	161.1
71	109	.115	.384	.180	122.1	160.1
72	108	.135	.369	.194	123.1	159.1
73	107	.155	.353	.208	124.1	158.1
74	106	.175	.337	.222	125.1	157.1
75	105	+ 1.195	+ 0.320	+ 1.238	126.1	156.1
76	104	.216	.303	.254	127.1	155.1
77	103	.238	.286	.271	128.1	154.1
78	102	.260	.267	.289	129.1	153.1
79	101	.283	.249	.307	130.1	152.1
80	100	+ 1.306	+ 0.230	+ 1.327	131.1	151.1
81	99	.331	.210	.348	132.1	150.1
82	98	.356	.190	.370	133.1	149.1
83	97	.382	.169	.392	134.1	148.1
84	96	.408	.148	.417	135.1	147.1
85	95	1.436	0.126	1.442	136.1	146.1

Table B, at the end of this introduction, contains the adopted values of the instrumental constants for all occasions on which observations were made. The first and second columns give the mean date, the tenth of a day being added wherever necessary for the identification of short periods. When no tenth is specified, and also when the tenth is 0, it is to be understood that the day begins with the observer's tour of duty, generally about three hours earlier than the commencement of the astronomical day. The constants for the *n*th date at 21^h mean time are therefore placed opposite the $(n + 1)$th date. The column "τ" gives, in Fahrenheit degrees, the approximate mean temperature of the instrument during the time the observations were in progress.

It is employed for computing the collimation from the absolute determinations contained in Table A. The columns *c*, *b*, and *a*, contain respectively the adopted values of the collimation, level, and azimuth constants.

The column "*Clock Appar'nt,*" under the general head "*Corrections,*" contains the apparent clock corrections given by direct observations of stars of the American Ephemeris situated within 40° of the equator. The adopted apparent right ascensions of these stars are obtained by applying the corrections given in Table C to the apparent right ascensions given in the American Ephemeris. From the adopted right ascensions thus found, the sums of the numbers in the columns "*Mean Wire*" and "*Inst.*" are subtracted, and the results are the apparent clock corrections. Reflected observations are not used for finding clock corrections.

On pages 41–43 of Appendix III to the Washington Observations for 1867, Professor Newcomb has given a catalogue of "Mean positions for 1870.0 of Stars of the American Ephemeris, deduced from Observations with the Transit Instrument and the Transit Circle during the years 1862–'67." This has been adopted as the fundamental catalogue, except that its right ascensions have been diminished by $0^s.03$ in order to free them from a somewhat doubtful correction to the position of the equinox. The numbers given in Table C are, therefore, the corrections necessary to reduce the right ascensions of the American Ephemeris to those of the fundamental catalogue, after the latter have been diminished by $0^s.03$.

The column "*Clock Adopted,*" under the general head "*Corrections,*" contains the adopted clock correction for each star, computed from the data given in Table D.

Table D is constructed upon the assumption that for each observing-day the mean of all the apparent clock corrections obtained by a single person corresponds to the mean of the times at which they were observed. Accordingly, for each observing-day during which observations were actually made, the column "*Mean Day and Sidereal Hour*" contains the mean date, together with the sidereal hour and tenth of an hour corresponding to the mean of the right ascensions of all the clock-stars which were observed; while the corresponding means of the apparent clock corrections given by the same stars are contained in the column "*Clock Correction from Mean of Observations.*" The initials of the persons who made the observations are contained in the column "*Observer.*" When clock corrections are determined by two or more persons during a single observing-day, the results are given separately for each person.

On several occasions two or more of the observers were directed to determine independent values of the clock correction for a given instant, and from a comparison of the results their personal equations have been deduced. The best mode of getting the simultaneous clock corrections is for the observers to note the transits of alternate time-stars, one of them taking the first star, the other the next, and so on till each has observed six stars, which may generally be accomplished in less than two hours. The probable errors of the resulting clock corrections will be about $0^s.01$. Sometimes it is more convenient for one of the observers to get all his stars first, and for the other to get his subsequently; but in such cases, to avoid too great dependence upon the clock-rate, the interval between the mean of the right ascensions of the stars taken by the first observer and the mean of the right ascensions of the stars taken by the second observer should not exceed six hours. If the first method is employed, the clock corrections found by the two observers will belong to instants so nearly identical that the clock-rate may be neglected unless it is very large, and the difference between the two corrections will be the difference of personal equation. If the second method is used, the two corrections may belong to widely different instants, and must be reduced to a common epoch, by means of the clock-rate, before the personal equation can be inferred.

The material for determining personal equations during the year 1870 is very scanty, being all comprised in the following table:

	s.		s.
April 26	Ha.— 0.145 = F.	Aug. 12	Ha.— 0.080 = F.
Aug. 6	Ha.— 0.043 = S.	Aug. 12	Ha.— 0.071 = S.
		Aug. 15	Ha.— 0.095 = E.

From these data it has been inferred that the corrections which must be applied to the clock corrections obtained by different observers in order to reduce them to a uniform standard are

	s.
Ha.	— 0.06
E.	+ 0.03
F.	+ 0.04
S.	0.00

Accordingly, applying these quantities to the numbers contained in the column of Table D headed "*Clock Correction from Mean of Observations*" there results the numbers contained in the column "*Clock Correction Corrected for Personal Equation.*" Dividing the differences between the latter quantities by the intervals elapsing between the times at which they were determined gives the daily rates contained in the column "*Apparent Rate between Groups.*" Finally, the "*Adopted Daily Rate*" for each observing-day is obtained by taking the mean of the apparent rates for the two intervals, one of which precedes and the other follows the epoch of the clock correction. In doing this, however, more weight is given to apparent rates depending upon an interval of one day than to those depending on either greater or less intervals.

Returning to the consideration of the observations of right ascensions, the numbers in the column "*Clock Adopted*" are obtained for each object by using the "*Adopted Daily Rate*" to reduce the "*Clock Correction from Mean of Observations*" to the instant at which the object was observed. In the rare cases where clock corrections are required for the reduction of isolated observations, they are obtained by interpolating between the "*Clock corrections Corrected for Personal Equation*" on the nearest preceding and following dates, and applying personal equation to the interpolated value. Usually the same individual observes both the clock-stars and the objects whose right ascensions are required, and then personal equation affects only the clock-rates and very accurate values of it are not essential.

The column "*Apparent Right Ascension*" contains the apparent right ascension of each object, found by adding together its time of transit over the imaginary mean wire, the sum of the instrumental corrections, and the adopted clock correction. The result is therefore in all cases the right ascension of that part of the object which was actually observed.

The column "*Miscellan'us Corrections*" contains

α. For stars whose apparent positions are stated in the American Ephemeris; the correction given by the observation to the right ascension of the Ephemeris.

β. For other stars; the reduction to their mean position for the fictitious epoch 1870.0. This reduction is computed with the constants of the American Ephemeris, and no proper motion is applied.

γ. For the sun, when only one limb has been observed; the sidereal time of its semi-diameter passing the meridian, obtained by correcting the value given in the American Ephemeris, by means of Table XVI, for the personal equation of the observer to whose work it is to be applied.

δ. For the moon or a planet, when only one limb has been observed; the sidereal time of the semi-diameter passing the meridian, as given in the American Ephemeris.

Passing now to the consideration of the right-hand pages, on which are printed the observations of north polar distance,

The column "*Number*" contains the reference number.

The column "*Circle Division*" contains the degrees and minutes indicated by the horizontal microscope of circle A. Designating them by Ω, the divisions of circle B, actually read by means of its micrometer microscopes, were

For Microscope I	314° 56′ $-\Omega$
For Microscope II	44 56 $-\Omega$
For Microscope III	134 56 $-\Omega$
For Microscope IV	224 56 $-\Omega$

Under the general head "*Microscope Microm's*" the columns I, II, III, IV, contain the readings of the microscope micrometers of circle B. The Roman numbers at the heads of the columns correspond to those upon the microscopes which were used during the year. As it is always intended to set the circle so that the readings of these microscopes shall be, as nearly as possible, 10 revolutions, the whole revolutions are not generally recorded unless the readings differ more than 10″ from that quantity. Owing to imperfect adjustment, the whole revolutions given for microscope I do not always apply to all the others; but this can occasion no ambiguity.

Under the general head "*Telescope Micrometer*," the column "*Rev.*" contains for each object the whole revolutions of the zenith-distance micrometer as indicated upon the toothed scale in the eye-piece by the close pair of movable declination wires. The center of the field, as marked by the double fixed wires, corresponds to 30 revolutions. The columns 1, 2, 3, 4, 5, contain the corresponding thousandths of a revolution of the micrometer screw as read from its head for each bisection of the object. The vertical wires at which the bisections were made are indicated as follows: For objects within 5° of the pole the columns 1 to 5 refer to the wires C_1 to C_5; but for objects whose polar distance exceeds 5° they refer to the wires I, II, IV, VI, VII. Whenever it is necessary to depart from this rule a foot-note is appended explaining how the bisections were made.

The usual practice is to reduce all the objects in each group of observations by means of the zenith-point correction determined in connection with them. Accordingly, the numbers in the column "*Zenith Point Correction*" have generally been taken without change from the last column of Table E, at the end of this introduction; but in the rare cases where there is a considerable change in the zenith-point correction during an observing-day its value for each object has been obtained from the observed values by interpolation. The construction of Table E has been already explained.

It sometimes happens that a group of observations is made, but, on account of unsteadiness of the mercury or other causes, no nadir point is determined with it. Under such circumstances the requisite zenith-point correction is obtained from the stars in the group by reducing them as if the zenith-point correction were zero, and at the end of the year comparing their mean north polar distances so found with their mean north polar distances resulting from all the other observations made on them during the year. Each star which has been observed on other nights thus furnishes one value of the zenith-point correction, and the mean of all the values so obtained is employed for the final reduction of the whole group. With a sufficient number of stars, this process gives nearly as good results as a zenith-point correction determined in the usual manner.

The column "*Apparent Zenith Distance South*" contains for each object its apparent zenith distance, measured continuously from the zenith toward, or through, the south, to the object. It is the sum of the following quantities:

1. The approximate zenith distance south; which is equal to the reading of the horizontal microscope of circle A, minus the excess of the mean of the readings of the micrometer microscopes of circle B above ten revolutions.

2. The micrometer equivalent, or, in other words, the correction in arc for the mean of the readings of the zenith-distance micrometer, computed by means of the formula

$$[15''.320 + 0''.0034\ (r - 30.000)] \times [30.000 - r] + 2'\ 0''.0$$

where r is the mean of the readings of the zenith-distance micrometer expressed in revolutions and parts of a revolution, and 2′ 0″.0 is a constant added in order to make the zenith-point correction always positive.

In practice the value of this expression is taken from a table, constructed as follows: Upon a sheet of paper of convenient size lines were ruled dividing it into seven vertical columns. In the left-hand one the numbers 0, 1, 2, 3, &c., to 60, were written and marked as seconds of arc. At the head of the fourth column, opposite 0″, was written 30.000 revolutions; from this was subtracted the fraction of a micrometer revolution corresponding to 1″, and the remainder was written in the same column opposite 1″; from that remainder the fraction of a revolution corresponding to 1″ was again subtracted, and the remainder written opposite 2″; and by continuing this process the whole table was filled up. Of course, in filling the second and third columns continual additions of the fraction of a revolution corresponding to 1″ were employed instead of subtractions. The table so constructed extended from 37 revolutions, at the head of the second column, to 14 revolutions, at the foot of the seventh column; and the numbers in each column corresponded to a range of 1′. The seconds corresponding to each number were fixed, but as yet the minutes had been left indeterminate, and, as they are entirely arbitrary,[1] it was convenient so to assume them as to make the zenith-point correction always positive. For that purpose a nadir observation was reduced, and thus the minutes necessary to be attributed to its micrometer equivalent to bring the zenith-point correction between the limits $+30''$ and $+90''$ became known. That number of minutes was written at the head of the column in which the mean of the zenith-distance micrometer readings of the nadir observation in question was found, and the table was completed by writing the consecutive minutes at the heads of the other columns. It is scarcely necessary to add that in the table thus formed the minutes and seconds corresponding to 30.000 revolutions are the constant ($+2'\ 0''.0$) of the formula given above.

3. The reduction to the meridian on account of the deviation of the path of the object from a great circle; computed by means of the formula

$$\begin{aligned}\mu &= -112.5 \sin 1''\, i^2 \tan \delta + 1''.80 \\ &= -[6.7367]\, i^2 \tan \delta + 1''.80\end{aligned}$$

in which μ is the reduction to the meridian, in seconds of arc; i, the equatorial interval, in seconds of time, between the middle vertical wire and the wire at which the bisection of the object with the zenith-distance micrometer was made; δ, the declination of the object; and $1''.80$, a constant added for the purpose of making μ generally positive. In order to save computation, the values of μ have been tabulated for all the vertical wires, and for each degree of declination from one horizon to the other.

Occasionally objects are bisected with the zenith-distance micrometer when they are not at any vertical wire. In such cases the clock-time is noted at the instant of bisection, and the reduction to the meridian is computed by means of the formula

$$\begin{aligned}\mu &= -56.25 \sin 1''\, I^2 \sin 2\delta + 1''.80 \\ &= -[6.4357]\, I^2 \sin 2\delta + 1''.80\end{aligned}$$

in which I is the distance of the object from the meridian at the time the bisection was made, expressed in seconds of time; and the other letters retain the same signification as above.

4. In the case of unsymmetrical observations, the corrections for inclination of wires and motion of object.

The correction for inclination was determined from time to time by means of the formula given on page xxvi, care being taken to employ a sufficient number of stars to furnish a reliable mean value of $r_{\mathrm{I}} - r_{\mathrm{VII}}$. The correction was sensibly constant during the year. Its amount for each of the vertical wires from I to VII is given on page 3 of the observations.

The correction for motion of object was computed by means of the formula

$$\varDelta'\delta = -\frac{\varDelta\delta}{3600}\, i \sec \delta = -[6.4437]\, \varDelta\delta\, i \sec \delta$$

in which $\varDelta'\delta$ is the correction for motion of object, and $\varDelta\delta$ the hourly motion of the object in declination, both expressed in seconds of arc; i is the equatorial interval, in seconds of time, between the middle wire and the wire at which the object was bisected; and δ is the declination of the object.

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[1] This is evident when it is remembered that the corrected circle reading is the sum of the observed circle reading and the micrometer equivalent; and also that the apparent zenith distance south is only affected by the difference between the corrected circle reading for the object and that for the nadir point. Hence, so far as the zenith-distance micrometer is concerned, the quantity entering the apparent zenith distance is the difference of two micrometer equivalents, and this difference will remain the same no matter what constant is added to each equivalent.

5. For those observations in which wire A or B was used, the correction for the distance of the wire employed from the center of the space between the close pair of declination wires. The amount of this correction at each of the vertical wires from I to VII is given on page 3 of the observations.

6. The zenith-point correction, taken from the preceding column.

The corrections for flexure and division errors are omitted from the reductions, and applied once for all to the concluded mean places of the stars, and to the apparent places of the sun, moon, and planets.

The column "*Sympiesometer*" contains the observed readings of that instrument. Two or three times during each observing-day, readings of the open-air thermometer, the barometer, and the attached thermometer were made simultaneously with a reading of the sympiesometer, in order to determine the errors of the scale of the latter. These readings are recorded at the foot of the same page with, and with the same reference numbers as, the readings of the sympiesometer to which they correspond.

The column "*Refraction*" contains the correction for refraction, computed by means of Bessel's formula, using only four places of decimals in the logarithms, and employing the tables given in the Appendix to the Washington Observations for 1845. The computation with these tables has been considerably abridged by obviating the necessity for taking out the three logarithms corresponding to the readings of the open-air thermometer, the barometer, and the attached thermometer. This has been done by the use of the sympiesometer, whose scale is so graduated that the application of a small correction converts its observed reading into the sum of the logarithms in question. The small corrections were obtained thus: In each case where simultaneous readings were made of the sympiesometer, open-air thermometer, barometer, and attached thermometer, the readings of the three latter instruments were employed to compute the sum of the logarithms, and this sum was subtracted from the reading of the former instrument. A series of residuals resulted, which were plotted as ordinates, (the corresponding readings of the sympiesometer being the abscissas,) and a smooth curve was traced as nearly as possible through their extremities. From this curve the adopted values of the correction were read, and are as follows:

Reading of Sympiesometer.	Correction.	Reading of Sympiesometer.	Correction.
200	− 6	650	− 26
250	8	700	28
300	11	750	30
350	14	800	32
400	16	850	34
450	18	900	35
500	20	950	36
550	22	1000	− 37
600	− 24		

The units of the sympiesometer reading, and its correction, both correspond to the fourth place of decimals in the logarithm of the refraction.

When an object was too near the horizon to permit its refraction being regarded simply as a function of the height of the sympiesometer, the refraction was computed in the usual way.

The numbers in the column "*Apparent North Polar Distance*" were formed for each object by correcting its apparent zenith distance south for refraction, and then adding it to the co-latitude in the case of a direct observation, or subtracting it in the case of a reflected one. The adopted co-latitude is $+ 51^\circ\ 6'\ 21''.2$.

The column "*Miscellan'us Corrections*" contains

α. For stars whose apparent positions are stated in the American Ephemeris; the correction given by the observation to the north polar distance of the Ephemeris.

β. For other stars; the reduction to their mean position for the fictitious epoch 1870.0. This reduction is computed with the constants of the American Ephemeris, and no proper motion is applied.

γ. For the asteroids; the correction for parallax, computed by means of the formula

$$p = \frac{8''.85 \times 0.9987}{\varDelta} \sin(z' - d\varphi) = \frac{8''.837}{\varDelta} \sin(z' - d\varphi)$$

in which p is the correction for parallax; $\varDelta$, the distance between the centers of the earth and asteroid, expressed in terms of the earth's mean distance from the sun as unity; z', the apparent zenith distance of the asteroid, corrected for refraction; $d\varphi$, the angle of the vertical, which is $11'\ 14''.5$ at Washington; $8''.85$, the adopted value of the sun's mean equatorial horizontal parallax; and 0.9987, the distance from the transit circle to the center of the earth. The values of $\varDelta$ are taken from the Berliner Jahrbuch.

For the sun, moon, and planets other than the asteroids, the corrections for parallax, semi-diameter, and defective illumination are given at the foot of the pages containing the observations.

The corrections for parallax are all computed from the data contained in the American Ephemeris; using for the sun and planets, the formula

$$p = [9.9994]\ \pi \sin(z' - d\varphi)$$

and for the moon, the formulæ

$$\sin p' = [9.999430] \sin \pi \sin(z' - d\varphi)$$

$$\delta p = \frac{p \mp s}{2} \sin p \sin s$$

$$p = p' \mp \delta p$$

in which the upper signs must be taken for the upper limb, and the lower signs for the lower limb. π is the moon's equatorial horizontal parallax; s, the moon's apparent semi-diameter; and [9.999430], the logarithm of the distance between the transit circle and the earth's center. The other letters have the same signification as above. Table VII gives the values of δp to the arguments π and p.

TABLE VII.—*Values of δp.*

p	Upper Limb Observed.			Lower Limb Observed.		
	Value of π.			Value of π.		
	54′	58′	62′	54′	58′	62′
′	″	″	″	″	″	″
0	+ 0.02	+ 0.02	+ 0.02	0.00	0.00	0.00
10	.00	.00	+ .01	+ .01	+ .01	+ .01
15	.00	.00	.00	.02	.02	.02
20	.00	.00	.00	.03	.03	.03
25	− .01	− .01	− .01	.04	.04	.04
30	.02	.02	.02	.05	.05	.06
35	.03	.03	.03	.06	.07	.08
40	.04	.04	.04	.08	.09	.10
45	.05	.05	.05	.10	.11	.12
50	− 0.07	− 0.07	− 0.07	+ 0.12	+ 0.13	+ 0.14

When both limbs of an object have been observed, half the difference between their apparent north polar distances is the correction for semi-diameter; but when only a single limb has been observed, the correction is taken from the American Ephemeris. In the case of the sun, however, the semi-diameters taken from the Ephemeris are corrected by means of Table XVI for the personal equation of the observer to whose work they are to be applied.

The corrections for defective illumination are computed from the data of the American Ephemeris by means of formulæ given in a subsequent part of this introduction.

CORRECTIONS TO THE RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THE AMERICAN EPHEMERIS, GIVEN BY INDIVIDUAL OBSERVATIONS OF STARS WITH THE TRANSIT CIRCLE.

The tables containing these corrections are to be found on pages 185 to 202, and exhibit (1) the date of each observation and (2) the initial of the observer, the latter being given to facilitate any discussion of personal peculiarities.

Next follows the correction to the right ascension, which is copied, without change, from the last column of the left-hand page of the observations. In the case of clock-stars, it is not put down unless it depends either on three other clock-stars, or on one or two stars distant more than six hours in right ascension. In this and the following column, an interrogation-mark signifies that the result is doubtful; an *r*, that it is rejected on account of discordance.

The next column contains the correction to the polar distance, also copied from the last column of the observations, without change except for erroneous micrometer revolutions.

The mean polar distances thus found still require the following corrections, which have not been applied in the reductions:

1. For error of division.
2. For flexure.
3. For possible constant error in zenith point.
4. For error of assumed latitude.

The corrections for errors of division were determined in November and December, 1865. They are given in the following table,[1] which contains for each circle the correction to be applied to the mean of the readings of its own four micrometer microscopes, in order to free this mean from the effect of errors of division. The argument for entering the table is the reading of the horizontal microscope belonging to the circle for which the correction is desired. If this reading exceeds 90° it must be brought into the first quadrant by subtracting from it 90°, 180°, or 270°, as may be necessary.

TABLE VIII.—*Correction which must be applied to the Mean of the Readings of the Four Micrometer Microscopes, in order to free that Mean from the effect of Errors of Division.*

[Argument.—Reading of Horizontal Microscope belonging to Circle for which correction is required.]

Arg.	Circle A.	Circle B.	Arg.	Circle A.	Circle B.	Arg.	Circle A.	Circle B.
°	″	″	°	″	″	°	″	″
0	+ 0.12	+ 0.30	30	− 0.16	+ 0.27	60	− 0.05	+ 0.22
1	+ 0.06	+ 0.23	31	− 0.23	+ 0.24	61	+ 0.05	+ 0.26
2	0.00	+ 0.18	32	− 0.29	+ 0.22	62	+ 0.05	+ 0.28
3	− 0.05	+ 0.18	33	− 0.32	+ 0.19	63	+ 0.05	+ 0.27
4	− 0.11	+ 0.22	34	− 0.35	+ 0.15	64	+ 0.02	+ 0.25
5	− 0.17	+ 0.27	35	− 0.37	+ 0.11	65	0.00	+ 0.22
6	− 0.10	+ 0.27	36	− 0.36	+ 0.12	66	+ 0.02	+ 0.22
7	− 0.02	+ 0.26	37	− 0.36	+ 0.15	67	+ 0.09	+ 0.22
8	0.00	+ 0.26	38	− 0.36	+ 0.14	68	+ 0.15	+ 0.22
9	+ 0.04	+ 0.27	39	− 0.29	+ 0.08	69	+ 0.14	+ 0.23
10	+ 0.07	+ 0.29	40	− 0.22	+ 0.02	70	+ 0.08	+ 0.24
11	+ 0.08	+ 0.29	41	− 0.17	− 0.07	71	− 0.03	+ 0.25
12	+ 0.10	+ 0.29	42	− 0.12	− 0.12	72	− 0.12	+ 0.27
13	+ 0.13	+ 0.36	43	− 0.06	− 0.13	73	− 0.12	+ 0.28
14	+ 0.20	+ 0.44	44	− 0.02	− 0.07	74	− 0.05	+ 0.31
15	+ 0.28	+ 0.52	45	+ 0.02	− 0.01	75	+ 0.04	+ 0.35
16	+ 0.27	+ 0.56	46	0.00	0.00	76	+ 0.04	+ 0.40
17	+ 0.24	+ 0.57	47	− 0.02	0.00	77	+ 0.02	+ 0.45
18	+ 0.23	+ 0.57	48	− 0.04	0.00	78	0.00	+ 0.46
19	+ 0.20	+ 0.52	49	− 0.04	+ 0.06	79	+ 0.01	+ 0.45
20	+ 0.18	+ 0.48	50	− 0.04	+ 0.12	80	+ 0.12	+ 0.44
21	+ 0.17	+ 0.49	51	− 0.08	+ 0.12	81	+ 0.16	+ 0.41
22	+ 0.16	+ 0.52	52	− 0.22	+ 0.12	82	+ 0.17	+ 0.38
23	+ 0.10	+ 0.53	53	− 0.20	+ 0.13	83	+ 0.18	+ 0.36
24	− 0.02	+ 0.50	54	− 0.16	+ 0.14	84	+ 0.19	+ 0.36
25	− 0.14	+ 0.46	55	− 0.12	+ 0.15	85	+ 0.20	+ 0.36
26	− 0.18	+ 0.44	56	− 0.12	+ 0.16	86	+ 0.23	+ 0.40
27	− 0.22	+ 0.42	57	− 0.12	+ 0.17	87	+ 0.25	+ 0.44
28	− 0.24	+ 0.40	58	− 0.12	+ 0.19	88	+ 0.25	+ 0.44
29	− 0.20	+ 0.34	59	− 0.12	+ 0.20	89	+ 0.19	+ 0.37
						90	+ 0.12	+ 0.30

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[1] Extracted from the Washington Observations for 1865, Description of Transit Circle, § 72.

This table was formed from observations taken with the micrometer microscopes in their normal positions; that is, at the extremities of two diameters which intersect each other at right angles, and each of which makes an angle of 45° with the vertical. If, from any cause, they are ever differently arranged, the table as here given will no longer be applicable.

Let

$R_0 =$ reading shown, when the telescope is pointed to the zenith, by the horizontal microscope belonging to the circle with which an object was observed.

$\Delta =$ observed north polar distance of that object. For objects below the pole, $360^\circ - \Delta$ must be substituted instead of Δ. For objects observed by reflection, the numerical value of Δ is the same as if they had been observed directly.

Then Table IX furnishes for all possible cases, 1st, the argument with which to enter Table VIII in order to find the correction which must be applied to the observed north polar distance to free it from the effect of errors of division; and, 2d, the sign of that correction; the words "same" and "changed" indicating respectively that it is the same as, or the opposite to, that given in Table VIII. m is a whole number so taken as to bring the argument into the first quadrant.

TABLE IX.

Clamp.	Circle.	Observation.	Argument.	Sign of Correction.
West.	A.	Direct.	$R_0 + 51^\circ.1 - \Delta - m \times 90^\circ$	Changed.
		Reflection.	$R_0 + 38.9 + \Delta - m \times 90$	Same.
	B.	Direct.	$R_0 + 38.9 + \Delta - m \times 90$	Same.
		Reflection.	$R_0 + 51.1 - \Delta - m \times 90$	Changed.
East.	A.	Direct.	$R_0 + 38.9 + \Delta - m \times 90$	Same.
		Reflection.	$R_0 + 51.1 - \Delta - m \times 90$	Changed.
	B.	Direct.	$R_0 + 51.1 - \Delta - m \times 90$	Changed.
		Reflection.	$R_0 + 38.9 + \Delta - m \times 90$	Same.

The correction to an observed circle reading for flexure of circle is,[1] for circle A

$$+ 0''.37 \sin R - 0''.01 \cos R$$

and for circle B

$$+ 0''.84 \sin R - 0''.86 \cos R$$

where R is the reading given, when the telescope is pointed to the object, by the horizontal microscope belonging to the circle for which the flexure is required. When R_0 is known R can readily be found for any object whose polar distance is given, if the following facts are borne in mind: When the transit circle has the clamp end of its axis to the west, turning the telescope from the zenith toward the southern horizon diminishes the reading of circle A, and increases the reading of circle B. When the clamp end of the axis is to the east, turning the telescope from the zenith toward the southern horizon increases the reading of circle A, and diminishes the reading of circle B.

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[1] Washington Observations for 1865. Description of the Transit Circle, § 61.

However, it will generally be more convenient to have the formula so arranged as to give the correction which must be applied to an observed north polar distance in order to free it from the effect of circle flexure, and to have this correction itself expressed as a function of the north polar distance. For that purpose the correction to circle A may be written

$$+0''.37 \sin (R - 1^\circ 33')$$

and that to circle B

$$+1''.20 \sin (R - 45^\circ 40')$$

Substituting for R its value, and making the changes of sign indicated in Table IX, we obtain the desired expressions, which are given for all possible cases in the following table:

TABLE X.—*Formulæ for computing the Correction which must be applied to an Observed North Polar Distance in order to free it from the effect of Flexure of Circle.*

Clamp.	Circle.	Observation.	Formula.
			$'' \qquad\qquad\quad ^\circ$
West.	A.	Direct.	$-0.37 \sin (R_0 + 49.6 - \Delta)$
		Reflection.	$+0.37 \sin (R_0 + 127.4 + \Delta)$
	B.	Direct.	$+1.20 \sin (R_0 + 263.2 + \Delta)$
		Reflection.	$-1.20 \sin (R_0 + 185.4 - \Delta)$
East.	A.	Direct.	$+0.37 \sin (R_0 + 307.4 + \Delta)$
		Reflection.	$-0.37 \sin (R_0 + 229.6 - \Delta)$
	B.	Direct.	$-1.20 \sin (R_0 + 5.4 - \Delta)$
		Reflection.	$+1.20 \sin (R_0 + 83.2 + \Delta)$

If Z is the zenith distance of an object, counted from the zenith around by the south, the correction which must be applied to its observed north polar distance in order to free it from the effect of flexure of the telescope is,[1] for a direct observation

$$-0''.78 \sin Z \pm 0''.30 \cos Z$$

where the upper sign of the cosine term is to be taken when the head of the zenith-distance micrometer is below the screw when the telescope looks south—that is, when the clamp is west; and the lower sign is to be taken when the micrometer head is above the screw when the telescope looks south—that is, when the clamp is east. The sine flexure is due partly to actual flexure of the telescope tube, and partly to the effect of gravity in changing the position of the declination-micrometer slide relatively to the fixed plates of the eye-piece. The cosine flexure is due wholly to the latter cause, the severest tests having failed to show any cosine flexure of the telescope tube.

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[1] Washington Observations for 1865. Description of the Transit Circle, §§ 64–67.

When an object is observed by reflection, the surface of the mercury is usually about eight feet from the axis of the instrument. Hence, owing to the convexity of a level surface, the zenith distance obtained is too small by $0''.16 \sin Z$. Allowing for this in the expression given above, the correction for flexure of telescope and curvature of level to be applied to a north polar distance found from a reflection observation is

$$+0''.94 \sin Z \pm 0''.30 \cos Z$$

where Z is measured from the reflected zenith point.

These expressions may be written thus:

For a direct observation, clamp west, . . . $-0''.84 \sin (Z - 21^\circ\ 2')$
For a reflection observation, clamp west, . . . $+0''.99 \sin (Z + 17^\circ\ 42')$
For a direct observation, clamp east, ... $-0''.84 \sin (Z + 21^\circ\ 2')$
For a reflection observation, clamp east, . . . $+0''.99 \sin (Z - 17^\circ\ 42')$

Substituting for Z its value, $\Delta - 51^\circ.1$, we obtain formulæ very convenient for use, which are given in the following table:

Table XI.—*Formulæ for computing the Correction which must be applied to an Observed North Polar Distance in order to free it from the effect of Flexure of Telescope and Curvature of Level.*

Clamp.	Observation.	Formula.
West.	Direct. Reflection.	$-0''.84 \sin (\Delta - 72^\circ.1)$ $+0''.99 \sin (\Delta - 33^\circ.4)$
East.	Direct. Reflection.	$-0''.84 \sin (\Delta - 30^\circ.1)$ $+0''.99 \sin (\Delta - 68^\circ.8)$

The correction for constant error in the zenith point is obtained from a comparison of the direct and reflection observations, assuming that the true polar distance of any star is the mean of the values resulting from these two methods of observation.

If D and R represent the north polar distance of any star as found respectively from direct and reflection observations, corrected for errors of graduation and flexure; and if ΔZ represents the zenith-point correction, then

$$2\Delta Z = D - R$$

Thus, each star which has been observed, both directly and by reflection, furnishes one equation of condition for determining the value of ΔZ, and from all the equations thus formed the final value of ΔZ is obtained. But before this can be done, weights must be introduced, because, in general, the number of observations will vary from star to star. Giving to a single observation the weight unity, it has been assumed that for n observations

$$\text{Weight} = \frac{12\,n}{n + 11}$$

which amounts to supposing that each star is affected with a probable constant error nearly one-third as great as the accidental error of an individual observation. But if p' and p'' are respectively the weights of two quantities, the weight of the sum or difference of these quantities is

$$\frac{p'p''}{p'+p''}$$

Hence, if there are m direct and n reflection observations of any star, and p is the weight to be given to the zenith-point correction derived from it, then

$$p=\frac{12mn}{2mn+11\,(m+n)}$$

Our equations of condition therefore take the form

$$2p\,\varDelta Z=p\,(D-R)$$

and we have finally

$$\varDelta Z=\frac{\Sigma\{p\,(D-R)\}}{2\Sigma p}$$

where Σ is the sign of summation. The correction to the observed north polar distances on account of error in the assumed zenith point is therefore

To direct observations, ... $-\varDelta Z$
To reflection observations, . . . $+\varDelta Z$

The correction for error of assumed latitude is derived from stars observed both above and below the pole, upon the assumption that the polar distances obtained in these two positions must be identical. The process employed is similar to that used in finding the correction for constant error in the zenith point.

Let $\varDelta\varphi$ represent the correction to the assumed latitude, and let U and L represent the north polar distance of any star as found respectively from observations made above and below the pole, corrected for errors of graduation, flexure, and assumed zenith point. Then that star furnishes the equation of condition

$$2\varDelta\varphi=U+L-360^\circ$$

where L is measured from the pole through the zenith and nadir to the star. If the star has been observed m times above and n times below the pole, the weight p of this equation is

$$\frac{12mn}{2mn+11\,(m+n)}$$

and the weighted equation is

$$2p\,\varDelta\varphi=p\,(U+L-360^\circ)$$

As each star observed both above and below the pole furnishes an equation of condition of this form, we have finally

$$\varDelta\varphi=\frac{\Sigma\{p\,(U+L-360^\circ)\}}{2\Sigma p}$$

where Σ is the sign of summation. Hence, if φ is the assumed latitude, the true latitude is $\varphi+\varDelta\varphi$; and the correction to the observed north polar distances on account of error in the assumed latitude is $-\varDelta\varphi$, the sign being the same for reflection observations as for direct ones.

During the year 1870 the transit circle stood with the clamp end of its axis toward the east, and polar distances were measured by means of circle B, whose horizontal microscope read $0^\circ\ 0'\ 0''$ when the telescope pointed to the zenith. With these data the systematic corrections to the observed north polar distances were obtained as follows:

Table IX gives $51^\circ.1 - \Delta - m \times 90$ for direct, and $38^\circ.9 + \Delta - m \times 90$ for reflection observations, as the arguments with which to enter Table VIII in order to find the corrections for errors in the graduation of the circle. The results for each degree of north polar distance are given in the column "*Division Correction*" of Table XIV.

Table X gives $- 1''.20 \sin (5^\circ.4 - \Delta)$ for direct, and $+ 1''.20 \sin (83^\circ.2 + \Delta)$ for reflection observations, as the formulæ for computing the corrections for flexure of circle B. Table XI gives $- 0''.84 \sin (\Delta - 30^\circ.1)$ for direct, and $+ 0''.99 \sin (\Delta - 68^\circ.8)$ for reflection observations, as the formulæ for computing the corrections for flexure of telescope and curvature of level. After a simple reduction, the sums of these formulæ become, for direct observations, $+ 0''.56 \sin (\Delta + 33^\circ.5)$, and for reflection ones, $+ 0''.57 \sin (\Delta + 28^\circ.3)$, by means of which expressions the quantities contained in the column "*Flexure*" of Table XIV were computed.

The computation of the correction for constant error in the zenith point is given in Table XII. The first column contains the names of all stars observed, both directly and by reflection, during the year. These stars are divided into two groups, one embracing those which culminated north, the other those which culminated south of the zenith. The second column contains the mean values of the north polar distances given by direct observations; and the third column, the seconds of the mean values of the north polar distances given by reflection observations. The small subscript figures indicate the number of observations made on each star. The fourth column contains the excess of the seconds in the second column over those in the third column. The fifth column contains the corrections which must be applied to the numbers in the fourth column to free them from the effects of errors of graduation, flexure of telescope and circle, and erroneous value of zenith point.[1] Each of these corrections is the sum of the following quantities taken from Table XIV, namely:

Division and Flexure Corrections for Direct Observations — Division and Flexure Corrections for Reflection Observations — $0''.60$.

The sixth column contains the sums of the quantities in the fourth and fifth columns; or, in other words, the values of twice the correction for constant error in the zenith point. The seventh column contains the weights of the values of $2\Delta Z$ given in the sixth column. The eighth column contains the values of $2p\Delta Z$. The final results are

For observations north of the zenith, ... $\Delta Z = - 0''.43$
For observations south of the zenith, ... $\Delta Z = - 0''.12$

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[1] It has been already explained that the zenith-point corrections used during 1870 were all too great by $0''.30$.

Thus it appears that this correction changes its value by 0″.31 somewhere near the zenith, and, in applying it to the observed north polar distances, the change is made to occur progressively between 355° and 5° of zenith distance.

TABLE XII.—*Computation of the Value of ΔZ from the Observations made in* 1870.

Name of Star.	Observed North Polar Distance.				$D-R$	Corr. to $D-R$	$2\Delta Z$	Weight $=p$	$2p\Delta Z$
	Direct.			Ref.					
NORTHERN STARS.	°	′	″	″	″	″	″		″
α Ursæ Majoris . .	27	32	51.84_{13}	51.79_{1}	+ 0.05	− 1.31	− 1.26	0.87	− 1.10
κ Draconis	19	29	41.11_{1}	39.41_{1}	+ 1.70	− 0.99	+ 0.71	0.50	+ 0.36
τ Herculis	43	22	33.30_{7}	31.90_{1}	+ 1.40	− 1.22	+ 0.18	0.82	+ 0.15
ω Draconis	21	10	54.90_{3}	56.32_{2}	− 1.42	− 1.08	− 2.50	1.08	− 2.70
ψ^1 Draconis	17	47	16.59_{2}	18.49_{1}	− 1.90	− 0.92	− 2.82	0.65	− 1.83
γ Draconis	38	29	41.09_{10}	39.65_{2}	+ 1.44	− 1.37	+ 0.07	1.41	+ 0.10
δ Draconis	22	34	1.95_{3}	1.28_{1}	+ 0.67	− 1.21	− 0.54	0.72	− 0.39
α Cephei	27	57	53.65_{2}	53.00_{2}	+ 0.65	− 1.34	− 0.69	0.92	− 0.63
SOUTHERN STARS.									
α Tauri	73	45	15.85_{19}	17.35_{1}	− 1.50	− 1.37	− 2.87	0.88	− 2.53
δ Leonis	68	45	52.04_{17}	52.54_{1}	− 0.50	− 1.46	− 1.96	0.88	− 1.72
κ Ophiuchi	80	25	14.78_{10}	13.75_{1}	+ 1.03	− 1.19	− 0.16	0.84	− 0.13
α^1 Herculis	75	27	34.05_{12}	32.41_{1}	+ 1.64	− 1.32	+ 0.32	0.86	+ 0.28
1 Aquilæ	98	19	57.91_{17}	54.37_{1}	+ 3.54	− 0.52	+ 3.02	0.88	+ 2.66
ζ Aquilæ	76	19	40.39_{11}	39.20_{1}	+ 1.19	− 1.31	− 0.12	0.86	− 0.10
γ Aquilæ	79	42	6.23_{14}	3.64_{1}	+ 2.59	− 1.27	+ 1.32	0.87	+ 1.15
ε Pegasi	80	43	10.68_{9}	10.52_{1}	+ 0.16	− 1.16	− 1.00	0.84	− 0.84
α Aquarii	90	57	0.67_{3}	1.04_{1}	− 0.37	− 0.80	− 1.17	0.72	− 0.84
α Pegasi	75	29	37.54_{7}	36.07_{1}	+ 1.47	− 1.32	+ 0.15	0.82	+ 0.12

The computation of the correction for error in the assumed value of the latitude is given in Table XIII, whose construction is so analagous to that of Table XII that it does not require description. The letters and symbols at the heads of the columns have the same signification as in the preceding general formulæ. The final result is

Correction to Assumed Latitude = + 0″.34

TABLE XIII.—*Computation of the Value of $\Delta\varphi$ from the Observations made in* 1870.

Name of Star.	Observed North Polar Distance.				$U+L-360°$	Corr. to $U+L-360°$	$2\Delta\phi$	Weight $=p$	$2p\,\Delta\phi$
	Upper Culmination.			L. C.					
	°	′	″	″	″	″	″		″
λ Ursæ Minoris . .	1	4	55.01_{7}	4.41_{9}	− 0.58	+ 0.64	+ 0.06	2.50	+ 0.15
Polaris	1	23	1.92_{35}	58.74_{38}	+ 0.66	+ 0.67	+ 1.33	4.59	+ 6.10
51 Cephei	2	45	36.55_{1}	21.73_{13}	− 1.72	+ 0.71	− 1.01	0.87	− 0.88
δ Ursæ Minoris . .	3	23	38.56_{23}	21.00_{3}	− 0.44	+ 0.73	+ 0.29	1.96	+ 0.57
1 Draconis	8	6	10.11_{4}	48.01_{1}	− 1.88	+ 0.79	− 1.09	0.76	− 0.83
κ Cephei	12	40	52.41_{5}	8.53_{2}	+ 0.94	+ 0.50	+ 1.44	1.25	+ 1.80
γ Cephei	13	5	34.73_{1}	25.55_{6}	+ 0.28	+ 0.48	+ 0.76	0.80	+ 0.61
9 Draconis	13	37	7.67_{7}	52.50_{1}	+ 0.17	+ 0.49	+ 0.66	0.82	+ 0.54
β Ursæ Minoris . .	15	18	47.57_{7}	14.34_{2}	+ 1.91	+ 0.52	+ 2.43	1.33	+ 3.23
Groombridge 4163 .	16	18	46.22_{1}	11.28_{1}	− 2.50	+ 0.52	− 1.98	0.50	− 0.99
τ Draconis	16	53	12.10_{1}	48.10_{1}	+ 0.20	+ 0.48	+ 0.68	0.50	+ 0.34
79 Draconis	16	54	45.91_{1}	14.79_{5}	+ 0.70	+ 0.48	+ 1.18	0.79	+ 0.93
ψ^1 Draconis	17	47	16.59_{2}	40.91_{1}	− 2.50	+ 0.44	− 2.06	0.65	− 1.34
β Cephei	20	0	34.70_{3}	27.20_{3}	+ 1.90	+ 0.35	+ 2.25	1.28	+ 2.88
ε Draconis	20	3	47.41_{2}	15.04_{1}	+ 2.45	+ 0.35	+ 2.80	0.65	+ 1.82
22 Camelopardalis . .	20	38	21.57_{1}	37.68_{4}	− 0.75	+ 0.32	− 0.43	0.76	− 0.33
3 Ursæ Majoris . .	21	8	50.34_{4}	10.33_{3}	+ 0.67	+ 0.29	+ 0.96	1.43	+ 1.37
67 Piazzi	21	16	21.81_{1}	36.49_{2}	− 1.70	+ 0.28	− 1.42	0.65	− 0.92

Collecting our results, the total systematic correction to be applied to a north polar distance observed during the year 1870 is

For Objects North of the Zenith:

Observed Directly, . . Div. Corr. $+ 0''.56 \sin (\Delta + 33°.5) - 0''.30 + 0''.43 - 0''.34$

Observed by Reflection, Div. Corr. $+ 0''.57 \sin (\Delta + 28°.3) + 0''.30 - 0''.43 - 0''.34$

For Objects South of the Zenith:

Observed Directly, . . Div. Corr. $+ 0''.56 \sin (\Delta + 33°.5) - 0''.30 + 0''.12 - 0''.34$

Observed by Reflection, Div. Corr. $+ 0''.57 \sin (\Delta + 28°.3) + 0''.30 - 0''.12 - 0''.34$

The numerical values of these expressions are given in Table XIV, the argument being, for objects observed directly, their north polar distances; and for stars observed by reflection, their names. As the total corrections are made up of three very different classes of quantities, it has been thought best to tabulate the individual components as well as their sums. Accordingly, the column "*Division Correction*" contains the corrections for errors in the division of circle B. The column "*Flexure*" contains the sums of the corrections for flexure of circle B, flexure of telescope, effect of gravity on the movable parts of the zenith-distance micrometer, and, in the case of reflection observations, curvature of a level surface. The column "*Latitude, Zenith Point, &c.,*" contains the sums of the corrections for error in the assumed value of the latitude, constant error in the zenith point, and erroneous constant used in computing the zenith-point corrections from the nadir observations. Finally, the column "*Total*" contains the sums of the quantities in the three preceding columns, and these sums are the corrections to the observed north polar distances given on the lines "*Div., Flex., etc.,*" on pages 187 to 202.

TABLE XIV.—*Systematic Corrections to be applied to the Reduced North Polar Distances of Objects observed in the Year* 1870.

DIRECT OBSERVATIONS.

N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, &c.	Total.	N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, &c.	Total.
°	″	″	″	″	°	″	″	″	″
0	− 0.12	+ 0.31	− 0.21	− 0.02	40	− 0.29	+ 0.54	− 0.21	+ 0.04
1	.12	.32	.21	− 0.01	41	.29	.54	.21	.04
2	.07	.33	.21	+ 0.05	42	.27	.54	.21	.06
3	.01	.33	.21	.11	43	.26	.54	.21	.07
4	.00	.34	.21	.13	44	.26	.55	.21	.08
5	.00	+ 0.35	− 0.21	+ 0.14	45	− 0.27	+ 0.55	− 0.21	+ 0.07
6	+ 0.01	.35	.21	.15	46	.27	.55	.21	.07
7	.06	.36	.21	.21	47	.22	.55	.24	.09
8	.12	.37	.21	.28	48	.18	.55	.27	.10
9	.12	.38	.21	.29	49	.18	.56	.30	.08
10	+ 0.07	+ 0.39	− 0.21	+ 0.25	50	− 0.23	+ 0.56	− 0.33	.00
11	− 0.02	.39	.21	.16	51	.29	.56	.37	− 0.10
12	.07	.40	.21	.12	52	.36	.56	.40	.20
13	.13	.40	.21	.06	53	.43	.56	.43	.30
14	.15	.41	.21	.05	54	.44	.56	.46	.34
15	− 0.12	+ 0.42	− 0.21	+ 0.09	55	− 0.40	+ 0.56	− 0.49	− 0.33
16	.11	.43	.21	.11	56	.36	.56	.52	.32
17	.15	.43	.21	.07	57	.36	.56	.52	.32
18	.19	.44	.21	.04	58	.36	.56	.52	.32
19	.22	.44	.21	.01	59	.38	.56	.52	.34
20	− 0.24	+ 0.45	− 0.21	.00	60	− 0.41	+ 0.56	− 0.52	− 0.37
21	.27	.46	.21	− 0.02	61	.44	.56	.52	.40
22	.33	.46	.21	.08	62	.45	.56	.52	.41
23	.39	.47	.21	.13	63	.46	.56	.52	.42
24	.42	.47	.21	.16	64	.45	.56	.52	.41
25	− 0.44	+ 0.48	− 0.21	− 0.17	65	− 0.40	+ 0.55	− 0.52	− 0.37
26	.46	.48	.21	.19	66	.35	.55	.52	.32
27	.50	.49	.21	.22	67	.31	.55	.52	.28
28	.53	.49	.21	.25	68	.28	.55	.52	.25
29	.52	.50	.21	.23	69	.27	.55	.52	.24
30	− 0.49	+ 0.50	− 0.21	− 0.20	70	− 0.25	+ 0.54	− 0.52	− 0.23
31	.48	.51	.21	.18	71	.24	.54	.52	.22
32	.52	.51	.21	.22	72	.23	.54	.52	.21
33	.57	.51	.21	.27	73	.22	.54	.52	.20
34	.57	.52	.21	.26	74	.22	.53	.52	.21
35	− 0.56	+ 0.52	− 0.21	− 0.25	75	− 0.22	+ 0.53	− 0.52	− 0.21
36	.52	.52	.21	.21	76	.22	.53	.52	.21
37	.45	.53	.21	.13	77	.25	.52	.52	.25
38	.37	.53	.21	− 0.05	78	.27	.52	.52	.27
39	.30	.53	.21	+ 0.02	79	.28	.52	.52	.28

TABLE XIV.—*Systematic Corrections, &c.*—Continued.

DIRECT OBSERVATIONS.

N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, &c.	Total.
°	″	″	″	″
80	− 0.26	+ 0.51	− 0.52	− 0.27
81	.22	.51	.52	.23
82	.20	.51	.52	.21
83	.19	.50	.52	.21
84	.17	.50	.52	.19
85	− 0.16	+ 0.49	− 0.52	− 0.19
86	.15	.49	.52	.18
87	.14	.48	.52	.18
88	.13	.48	.52	.17
89	.12	.47	.52	.17
90	− 0.12	+ 0.47	− 0.52	− 0.17
91	.12	.46	.52	.18
92	.07	.46	.52	.13
93	.01	.45	.52	.08
94	.00	.44	.52	.08
95	.00	+ 0.44	− 0.52	− 0.08
96	+ 0.01	.43	.52	.08
97	.06	.43	.52	− 0.03
98	.12	.42	.52	+ 0.02
99	.12	.41	.52	+ 0.01
100	+ 0.07	+ 0.40	− 0.52	− 0.05
101	− 0.02	.40	.52	.14
102	.07	.39	.52	.20
103	.13	.39	.52	.26
104	.15	.38	.52	.29
105	− 0.12	+ 0.37	− 0.52	− 0.27
106	.11	.36	.52	.27
107	.15	.35	.52	.32
108	.19	.35	.52	.36
109	.22	.34	.52	.40
110	− 0.24	+ 0.33	− 0.52	− 0.43
111	.27	.33	.52	.46
112	.33	.32	.52	.53
113	.39	.31	.52	.60
114	.42	.30	.52	64
115	− 0.44	+ 0.29	− 0.52	− 0.67
116	.46	.28	.52	.70
117	.50	.28	.52	.74
118	.53	.27	.52	.78
119	.52	.26	.52	.78
120	− 0.49	+ 0.25	− 0.52	− 0.76
121	.48	.24	.52	.76
122	.52	.23	.52	.81
123	.57	.22	.52	.87
124	.57	.21	.52	.88
125	− 0.56	+ 0.21	− 0.52	− 0.87
126	.52	.20	.52	.84
127	.45	.19	.52	.78
128	.37	.18	.52	.71
129	.30	.17	.52	.65
130	.29	.16	.52	.65
330	− 0.41	+ 0.03	− 0.21	− 0.59
331	.44	.04	.21	.61
332	.45	.05	.21	.61
333	.46	.06	.21	.61
334	.45	.07	.21	.59
335	− 0.40	+ 0.08	− 0.21	− 0.53
336	.35	.09	.21	.47
337	.31	.10	.21	.42
338	.28	.11	.21	.38
339	.27	.12	.21	.36
340	− 0.25	+ 0.13	− 0.21	− 0.33
341	.24	.14	.21	.31
342	.23	.15	.21	.29
343	.22	.16	.21	.27
344	.22	.17	.21	.26
345	− 0.22	+ 0.18	− 0.21	− 0.25
346	.22	.19	.21	.24
347	.25	.20	.21	.26
348	.27	.21	.21	.27
349	.28	.21	.21	.28
350	− 0.26	+ 0.22	− 0.21	− 0.25
351	.22	.23	.21	.20
352	.20	.24	.21	.17
353	.19	.25	.21	.15
354	.17	.26	.21	.12
355	− 0 16	+ 0.27	− 0.21	− 0.10
356	15	.28	.21	.08
357	14	.28	.21	.07
358	13	.29	.21	.05
359	12	.30	.21	.03
360	12	.31	.21	.02

TABLE XIV.—*Systematic Corrections, &c.*—Continued.

REFLECTION OBSERVATIONS.

Name of Star.	Division Correction.	Flexure.	Latitude, Zenith Point, &c.	Total.
	″	″	″	″
α Tauri	+ 0.53	+ 0.56	− 0.16	+ 0.93
α Ursæ Majoris . .	.22	.47	.47	.22
δ Leonis	.57	.57	.16	.98
κ Draconis . . .	.19	.42	.47	.14
τ Herculis . . .	.37	.54	.47	.44
κ Ophiuchi . . .	+ 0.32	+ 0.54	− 0.16	+ 0.70
α¹ Herculis . . .	.48	.55	.16	.87
ω Draconis . . .	.23	.43	.47	.19
ψ¹ Draconis . . .	.17	.41	.47	.11
γ Draconis . . .	.45	.52	.47	.50
1 Aquilæ	.00	+ 0.46	− 0.16	+ 0.30
ζ Aquilæ	+ 0.46	.55	.16	.85
δ Draconis . . .	.27	.44	.47	.24
γ Aquilæ	.37	.54	.16	.75
α Cephei	.22	.48	.47	.23
ε Pegasi	+ 0.30	+ 0.54	− 0.16	+ 0.68
α Aquarii	.04	.50	.16	.38
α Pegasi	.48	.55	.16	.87

The assumed value of the latitude being $+ 38° 53' 38''.8$, the final value given by any year's work is $+ 38° 53' 38''.80 + \Delta\varphi$. But the observed north polar distances employed in computing $\Delta\varphi$ had previously been corrected for constant error in the zenith point. Hence, if it is desired to separate the results of the direct observations from those of the reflection ones, we have

Latitude from Direct Observations, . . . $= + 38° 53' 38''.80 + \Delta\varphi + \Delta Z$

Latitude from Reflection Observations, . . $= + 38° 53' 38''.80 + \Delta\varphi - \Delta Z$

in which the value of ΔZ is that given by stars culminating north of the zenith, such being the position of those used in computing $\Delta\varphi$. By means of these expressions, the following table has been computed:

TABLE XV.—*Latitude of the Transit Circle as given respectively by the Direct and Reflection Observations made during each Year that the Instrument has been in use.*

Year.	Latitude from Direct Observations.	Latitude from Reflection Observations.	Mean.
	° ′ ″	° ′ ″	″
1866	+ 38 53 38.73	+ 38 53 37.67	38.20
1867	39.16	37.48	38.32
1868	38.69	37.73	38.21
1869	38.62	38.90	38.76
1870	38.71	39.57	39.14

It thus appears that while the values given by the direct observations are quite uniform, those given by the reflection ones vary greatly; and this of course tends to throw suspicion upon the latter class of observations, and also upon the latitudes derived from them. However, the concluded values of the north polar distances have always been reduced to what they would have been if measured from a visible pole, and consequently they are independent of any error in the latitude.

It may also be remarked that had the reflection observations been entirely rejected, there would have been no systematic differences between the polar distances of northern objects then deduced and those actually concluded, while the actually concluded polar distances of southern objects would have been changed by the quantity

$$\{-\Delta Z \text{ given by Northern Stars} + \Delta Z \text{ given by Southern Stars}\}$$

the numerical values of which for each year are as follows:

	″
1866,	− 0.47
1867,	− 0.60
1868,	− 0.68
1869,	− 0.18
1870,	+ 0.31

The application of these corrections to the concluded north polar distances of objects culminating south of the zenith will reduce them to values not differing *systematically* from those which would have been obtained from the direct observations alone.

RIGHT ASCENSIONS, NORTH POLAR DISTANCES, AND SEMI-DIAMETERS OF THE SUN, MOON, AND PLANETS, DEDUCED FROM OBSERVATIONS WITH THE TRANSIT CIRCLE, AND COMPARED WITH THE TABLES.

These results are given on pages 241 to 248, and require very little explanation.

When both limbs of an object presenting a fully illuminated disk have been observed, the right ascension of its center is the mean of the values given for the two limbs in that column of the observations which is headed "*Apparent Right Ascension.*" When only one limb has been observed, and that was fully illuminated, the right ascension of the center is derived from that of the limb by applying to it the sidereal time of the semi-diameter passing the meridian, as given in the column "*Miscellan'us Corrections.*"

If one of the limbs observed was defective, the observed difference of right ascension of limbs is multiplied by the computed ratio of this difference to the true semi-diameter, and the observed semi-diameter thus deduced is applied to the right ascension of the full limb to obtain that of the center. The formulæ employed are as follows: Let

$i =$ elongation of earth and sun as seen from planet;

$b = \cos i$;

$\delta, \delta' =$ declinations of planet and sun;

$A =$ difference of right ascensions of planet and sun;

$\theta =$ angle which the line of cusps makes with the meridian;

$f, f' =$ factors by which measured horizontal and vertical diameters must be multiplied to obtain true semi-diameters, Then, to find f, we have

$$\tan\theta = \frac{\cos\delta\tan\delta'}{\sin A} - \frac{\sin\delta}{\tan A}$$

When the planet is gibbous

$$g = \cos\theta\sqrt{b^2 + \tan^2\theta} = \cos\theta'' \qquad \text{when } \sin\theta'' = \cos\theta\sin i$$

$$g' = \sin\theta\sqrt{b^2 + \cot^2\theta} = \cos\theta' \qquad \text{when } \sin\theta' = \sin\theta\sin i$$

$$f = \frac{1}{1+g}$$

$$f' = \frac{1}{1+g'},$$

When the illuminated disk is a crescent,

$$g = \cos\theta; \qquad f = \frac{1}{1+g}$$

$$g' = \sin\theta; \qquad f' = \frac{1}{1+g'},$$

When the center of light of Mercury has been observed, the reduction to the center of the planet is denoted by ε, and its value is obtained from the empiriral formulæ

$$n = \frac{(1-b)\,(5+b)}{12}$$

In R. A. . . . . $\varepsilon = \text{semi-diam.} \times n\cos\theta$

In N. P. D. . . . . $\varepsilon = \text{semi-diam.} \times n\sin\theta$

The north polar distances are reduced from the part actually observed to the center in the same way as the right ascensions, and by the formulæ and numbers just given, but the following further corrections are applied to them:

1. The parallax in altitude found at the foot of the pages of observations.
2. The corrections for division, flexure, latitude, and constant error in the zenith point, taken from Table XIV.

A discussion of all the semi-diameters of the sun measured during the year 1870 gave the following results for personality:

Table XVI.—*Corrections which must be applied to the Semi-diameters of the Sun given in the American Ephemeris in order to reduce them to the Semi-diameters actually found from the Mean of all the Measures made by each Observer in the Year* 1870.

Observer.	Sidereal Time of Semi-diameter passing the Meridian.	Vertical Semi-diameter.
	s.	″
Harkness . . .	− 0.07	− 1.4
Eastman. . . .	− 0.04	− 0.8
Frisby.	− 0.04	− 0.6
Stone	− 0.07	− 1.1

Whenever only one limb of the sun was observed, the quantity contained in that column of the observations headed "*Miscellan'us Corrections*" is the semi-diameter given in the American Ephemeris corrected by means of the above table.

As the places of the moon for the time of its transit at Washington are not given either in the American Ephemeris or in the English Nautical Almanac, they are computed from each of these works in the following manner: The observed right ascension of the center, considered as sidereal time, is reduced to Washington mean time, and then increased by $5^h\ 8^m\ 12^s$, which converts it into Greenwich mean time. With this as an argument, the tabular place is interpolated from the hourly ephemeris for Greenwich. When only the polar distance is observed, the Washington mean time of transit of center is taken at once from the "*Moon Culminations*" of the American Ephemeris. The places thus found from the American Ephemeris and from the English Nautical Almanac are respectively those of Peirce's and Hansen's tables.

The places of Venus, according to Le Verrier's tables, are obtained by applying to the positions given in the American Ephemeris for the time of transit at Washington, the differences between the positions for Greenwich noon, given respectively in that Ephemeris and in the English Nautical Almanac. As a check, a place is occasionally interpolated directly from the latter work.

TABLE A.—*Absolute Determinations of the Collimation Constant of the Transit Circle, made in the Year* 1870.

NOTE.—The eye-piece was removed from the telescope on February 5, February 16, and March 29. Consequently the adjustment of the collimination was changed at these dates.

Date.	M	M'	$M+M'$	$0.510 \times (M+M')$	c_τ	τ	$-0^{s}.004\,\tau$	c_0
	r.	r.	r.	s.	s.	°	s.	s.
February 2	+ 0.197	− 0.185	+ 0.012	+ 0.006	− 0.018	47.0	− 0.188	− 0.206
7	+ .302	− .126	+ .176	+ .090	+ .066	40.0	.160	.094
14	+ .160	.000	+ .160	+ .082	+ .058	38.0	.152	.094
21	− .094	− .096	− .190	− .097	− .121	16.0	.064	.185
March 1	+ 0.025	− 0.101	− 0.076	− 0.039	− 0.063	41.5	− 0.166	− 0.229
7	− .042	− .030	− .072	− .037	− .061	36.0	.144	.205
14	+ .064	− .125	− .061	− .031	− .055	38.5	.154	.209
21	− .031	+ .064	+ .033	+ .017	− .007	62.5	.250	.257
28	+ .196	− .144	+ .052	+ .027	+ .003	47.0	.188	.185
April 1	+ 0.040	− 0.121	− 0.081	− 0.041	− 0.065	43.4	− 0.174	− 0.239
11	+ .086	− .125	− .039	− .020	− .044	59.0	.236	.280
18	+ .136	− .137	− .001	.000	− .024	51.0	.204	.228
25	+ .065	.000	+ .065	+ .033	+ .009	60.9	.243	.234
May 3	+ 0.188	− 0.152	+ 0.036	+ 0.018	− 0.006	57.1	− 0.228	− 0.222
9	+ .207	− .130	+ .077	+ .039	+ .015	68.5	.274	.259
16	+ .255	− .116	+ .139	+ .071	+ .047	80.2	.321	.274
24	+ .142	.000	+ .142	+ .072	+ .048	76.8	.307	.259
30	+ .044	− .056	− .012	− .006	− .030	68.0	.272	.302
June 6	− 0.014	− 0.120	− 0.134	− 0.068	− 0.092	73.0	− 0.292	− 0.384
13	− .083	+ .184	+ .101	+ .052	+ .028	78.7	.315	.287
20	− .105	+ .318	+ .213	+ .109	+ .085	81.5	.326	.241
27	− .084	+ .246	+ .162	+ .083	+ .059	87.0	.348	.289
July 5	− 0.074	+ 0.198	+ 0.124	+ 0.063	+ 0.039	76.0	− 0.304	− 0.265
11	− .047	+ .230	+ .183	+ .093	+ .069	82.8	.331	.262
18	− .072	+ .325	+ .253	+ .129	+ .105	91.3	.365	.260
25	− .027	+ .252	+ .225	+ .115	+ .091	86.3	.345	.254
August 1	− 0.172	+ 0.372	+ 0.200	+ 0.102	+ 0.078	82.0	− 0.328	− 0.250
7	− .018	+ .220	+ .202	+ .103	+ .079	88.5	.354	.275
16	− .072	+ .213	+ .141	+ .072	+ .048	77.2	.309	.261

TABLE B.—*Adopted Values of the Collimation, Level, and Azimuth Constants of the Transit Circle in the Year* 1870.

[NOTE.—An * indicates that the constant to which it is attached is an interpolated value. A † indicates that none of the regular azimuth stars were observed, and that the constant to which it is attached has been obtained by the method of least squares from all the observations of the night.]

Date.		τ	c	b	a
		°	s.	s.	s.
February	2	37	− 0.06	− 0.28	+ 0.02
	3	49	.01	.15	+ 0.02*
	4	34	− 0.07	.14	.00*
	6	29	+ 0.02	.12	.00*
	9	34	.04	.15	− 0.08
	10	37	.05	.16	.08
	12	35	.05	.15	.23
	13	32	+ 0.03	.12	.04
	16	35	− 0.07	.18	− 0.06*
	17	52	.00	.13	.00*
	19	32	.08	.00*	+ 0.17
	20	14	.16	.04	− 0.16
	21	12	.16	− 0.13	.23
	24	35	.07	+ 0.04	.30
	25	36	.07	− 0.06	.40
	26	33	.08	.05	.19
March	1	32	.08	.05	.33
	2	32	.08	.09	.17
	3	32	.08	− 0.10	.03
	5	31	.09	+ 0.07	.00
	7	38	.06	− 0.04	.07
	8	35	.07	.06	.12*
	9	32	.08	.08	.15
	10	40	.05	.29	.27
	11	48	.02	.28	.26*
	15	40	.05	.17*	.20*
	16	28	.10	.14	.20
	18	41	.05	.23	.41
	19	40	.05	.22	.25
	21	46	.03	.22	.01
	22	54	.00	.21	− 0.03
	23	45	.03	.10	+ 0.12
	24	37	.06	.14	− 0.07
	25	45	.03	.13	− 0.06
	30	56	.02	.12*	+ 0.10
April	5	38	.09	.14	− 0.32
	6	54	.02	.15	.26
	7	48	.05	.16	.28
	8	57	− 0.01	.20	.17
	9	59	.00	.16	− 0.08
	12	60	.00	.15	+ 0.05
	13	70	+ 0.04	.21	+ 0.06
	18	44	− 0.06	.08	− 0.14
	22	53	− 0.03	.13	.25
	23	67	+ 0.03	− 0.16	− 0.11
April	23	56	− 0.02	− 0.14	− 0.11
	25	50	− 0.04	.08	− 0.15
	26	59	.00	.08	+ 0.01
	27	66	+ 0.02	.11	− 0.13
	30	63	+ 0.01	.03	+ 0.02
	30	55	− 0.02	.11	+ 0.02
May	2	56	− 0.03	.14	− 0.04
	4	70	+ 0.03	.17	.04
	5	56	− 0.03	.16	.03
	6	69	+ 0.03	.20	− 0.03
	7	74	+ 0.05	.22	+ 0.01
	8	60	− 0.01	.15	+ 0.01
	9	69	+ 0.03	.16	− 0.12
	9	62	.00	.18	.12
	11	51	− 0.05	.18	.30
	12	69	+ 0.03	.20	.24
	12	57	− 0.02	.18	.24
	13	71	+ 0.03	.24	.18
	14	72	.04	.24	.17
	14	62	.00	.24	.17
	15	66	.01	.23	.15
	16	82	.08	.22	.03
	16	65	.01	.19	− 0.03
	17	79	.07	.21	+ 0.21
	19	74	.05	.22	− 0.20
	19	68	.02	.19	− 0.20
	20	81	.07	.20	+ 0.03
	20	66	.01	.18	.03
	21	78	.06	.10	.56†
	25	81	+ 0.06	− 0.02	.35†
June	6.4	73	− 0.01	+ 0.02	.82
	7.0	78	+ 0.01	.04	.83
	7.1	72	− 0.01	.04	0.83
	8.3	74	.00	.03	1.05
	10.3	72	.01	.12	0.92
	11.5	61	.06	.10	.62
	14.6	68	.03	.04	.73
	15.0	74	.00	+ 0.02	.73
	17.6	66	.04	.00	.54
	18.5	71	.02	− 0.02	.57
	20.4	74	.00	.02	.74
	21.5	61	.06	.08	.48
	22.3	72	.01	.12	.36
	22.8	69	− 0.02	.12	.36
	23.4	81	+ 0.02	− 0.13	+ 0.38

TABLE B.—*Adopted Values of the Collimation, &c.*—Continued.

Date,		τ	c	b	a	Date.		τ	c	b	a
		°	s.	s.	s.			°	s.	s.	s.
June	24.4	86	+ 0.04	− 0.15	+ 0.37	July	20.0	90	+ 0.10	− 0.11	+ 0.49
	24.8	73	− 0.01	.13	.37		21.0	88	.09	.17	.30
	25.5	74	.00	.12	.40		21.5	78	.05	.15	.30
	26.8	78	+ 0.01	.11	.38		22.0	88	.09	.21	.22*
	28.0	91	.06	.09	.64		23.0	89	.10	.22	.20
	28.8	81	.02	.03	.64		23.5	81	.06	.16	.20
	29.0	92	.07	.10	.42		25.0	94	.12	.18*	.24*
	29.8	75	.00	.10	.42		26.0	91	.10	.20	.28
	30.3	92	.07	.12	.41		28.0	90	.10	.24	+ 0.16†
	30.5	79	.02	.12	.41		29.0	84	.08	.27	− 0.06†
July	1.0	88	.05	.07	.41		30.0	76	.04	.28	+ 0.04
	5.3	81	.06	.15	.05		30.5	69	.02	.23	+ 0.04
	6.3	79	.06	.18	.05	August	1.0	82	.07	.28	− 0.03
	8.5	70	.02	.12	.05		1.5	72	.03	.25	.03
	9.0	79	.05	.16	.09		2.0	86	.08	.30	.11
	9.5	69	.02	.16	+ 0.09		2.4	77	.05	.28*	.11
	11.0	93	.11	.19	− 0.02		3.0	88	.09	.27	.15
	11.5	75	.04	.16	− 0.02		3.5	79	.05	.27	.15
	12.0	86	.08	.18	.00*		4.0	89	.09	.24	.18
	13.0	84	.07	.13	+ 0.15		4.5	80	.06	.24*	.18
	13.5	75	.04	.07	.15		5.0	83	.07	.24	.03
	14.0	86	.08	.18	.01		5.5	76	.04	.21	.03
	14.5	76	.04	.14	.01		6.0	86	.08	.26	.18
	15.0	89	.09	.14	.18		6.5	77	.04	.29	.18
	15.5	80	.06	.14	.18		8.0	89	.09	.26	.02
	16.0	90	.10	.10*	.44		8.5	78	.05	.24	.02
	16.5	79	.05	.07	.44		9.0	84	.07	.28	.02*
	18.0	92	.11	.06	.57		12.0	85	.08	.18	.01
	18.5	79	.05	.05	.57		12.5	78	+ 0.05	.23	.01
	19.0	89	.09	.09	.38		15.5	65	0.00	− 0.27	− 0.24
	19.5	78	+ 0.05	− 0.07	+ 0.38						

TABLE C.—*Adopted Corrections to the Positions of Clock-Stars, given in the American Ephemeris for the Year* 1870.

	s.
α Andromedæ	+ 0.02
γ Pegasi	.00
β Ceti	+ .05
ε Piscium	+ .02
θ^1 Ceti	+ .02
η Piscium	+ 0.07
ο Piscium	− .03
β Arietis	+ .02
α Arietis	+ .01
ξ^1 Ceti	+ .04
γ Ceti	0.00
α Ceti	+ .02
ζ Arietis	− .04
η Tauri	.00
ζ Persei	− .01
γ^1 Eridani	+ 0.04
γ Tauri	+ .01
ε Tauri	− .01
α Tauri	− .02
ι Aurigæ	− .04
11 Orionis	− 0.07
β Orionis	.00
β Tauri	− .02
δ Orionis	− .03
α Leporis	− .04
ε Orionis	− 0.01
α Columbæ	− .04
α Orionis	− .03
μ Geminorum	− .04
γ Geminorum	− .03
α Canis Majoris	− 0.08
ε Canis Majoris	− .05
δ Canis Majoris	− .05
δ Geminorum	− .06
α^2 Geminorum	+ .24
α Canis Minoris	− 0.14
β Geminorum	− .03
φ Geminorum	− .08
15 Argûs	− .06
ε Hydræ	− .04
κ Cancri	− 0.01
α Hydræ	− .03
ε Leonis	− .06
μ Leonis	− .01
α Leonis	− .04
γ^1 Leonis	− 0.02
ρ Leonis	− .07
l Leonis	.00
δ Leonis	− .06
δ Crateris	− .02
τ Leonis	− 0.02
υ Leonis	− .04
β Leonis	− .02
ο Virginis	− .02
η Virginis	− .02
β Corvi	− 0.04
12 Canum Venaticorum	.00
θ Virginis	− .04
α Virginis	− .02
ζ Virginis	.00
η Bootis	− 0.05
α Bootis	.00
ε Bootis	− .02
α^2 Libræ	− .01
β Libræ	.00
μ^1 Bootis	− 0.01
α Coronæ Borealis	.00
α Serpentis	+ .02
ε Serpentis	.00
δ Scorpii	+ .01
β^1 Scorpii	+ 0.03
δ Ophiuchi	+ .02
α Scorpii	− .01
ζ Ophiuchi	.00
η Herculis	+ .01
κ Ophiuchi	+ 0.04
α^1 Herculis	+ .02
b Ophiuchi	+ .03
α Ophiuchi	+ .03
μ Herculis	.00
γ^2 Sagittarii	+ 0.01
μ^1 Sagittarii	.00
η Serpentis	+ .06
1 Aquilæ	+ .07
α Lyræ	+ .02
β Lyræ	+ 0.03
σ Sagittarii	+ .01
ζ Aquilæ	+ .08
d Sagittarii	+ .02
δ Aquilæ	+ .05
κ Aquilæ	+ 0.04
γ Aquilæ	+ .03
α Aquilæ	+ .04
β Aquilæ	+ .03
τ Aquilæ	+ .02
α^2 Capricorni	+ 0.04
π Capricorni	+ .03
ε Delphini	+ .05
α Cygni	+ .02
μ Aquarii	+ .07
ν Cygni	+ 0.06
61^1 Cygni	− .04
ζ Cygni	+ .01
1 Pegasi	− .05
β Aquarii	+ .03
ξ Aquarii	+ 0.02
ε Pegasi	+ .01
μ Capricorni	+ .03
α Aquarii	+ .03
θ Aquarii	+ .02
π Aquarii	+ 0.02
η Aquarii	+ .03
ζ Pegasi	+ .06
λ Aquarii	+ .08
α Piscis Australis	+ .04
α Pegasi	+ 0.03
θ Piscium	+ .06
ι Piscium	.00
ω Piscium	+ .01

TABLE D.—*Adopted Corrections and Rates of the Kessels Sidereal Clock in the Year* 1870.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Rate between Groups.	Adopted Daily Rate.
d. h.		s.	s.	s.	s.	d. h.		s.	s.	s.	s.
Feb. 2 9.5	Ha.	− 45.84	− 45.90		+ 0.50	Mar. 25 7.3	Ha.	− 9.11	− 9.18		+ 0.48
				+ 0.50						+ 0.42	
3 22.2	E.	45.66	45.63		0.75	30 2.6	F.	7.23	7.19		0.42
				1.00						0.43	
6 18.5	F.	41.83	41.79		0.96	Apr. 5 12.7	F.	4.47	4.43		0.26
				0.93						0.08	
9 4.5	E.	39.56	39.53		0.90	5 23.9	Ha.	4.33	4.39		0.27
				0.86						0.46	
10 5.8	F.	38.68	38.64		0.94	7 9.7	Ha.	3.68	3.75		0.41
				1.03						0.37	
12 7.4	E.	36.54	36.51		0.94	8 7.8	F.	3.45	3.41		0.35
				0.86						0.33	
13 8.2	F.	35.67	35.63		0.87	9 12.1	Ha.	2.97	3.03		0.32
				0.89						0.31	
16 9.9	F.	32.92	32.88		0.69	12 12.0	Ha.	2.03	2.10		0.37
				0.48						+ 0.42	
16 20.6	Ha.	32.62	32.68		0.68	12 0.6	E.	1.91	1.88		+ 0.42
				0.87						− 0.30	
19 23.7	F.	30.89	30.85		0.92	18 12.6	Ha.	3.09	3.15		− 0.38
				0.98						0.46	
20 15.0	Ha.	29.19	29.25		0.84	22 12.0	E.	5.01	4.98		0.60
				0.71						0.74	
21 11.2	E.	28.69	28.66		0.67	23 12.2	F.	5.76	5.72		0.60
				0.63						0.46	
23 20.6	E.	27.18	27.15		0.76	25 12.1	E.	6.66	6.63		0.57
				0.88						0.68	
25 7.0	F.	25.92	25.88		0.83	26 9.1	F.	7.26	7.22		0.56
				0.78						0.45	
26 10.2	Ha.	24.93	24.99		0.81	27 13.5	Ha.	7.68	7.75		0.45
				0.84						0.47	
Mar. 1 11.0	Ha.	22.38	22.44		1.01	30 9.8	Ha.	9.00	9.06		0.40
				1.18						0.32	
2 8.9	E.	21.40	21.37		0.94	May 2 13.9	F.	9.80	9.76		0.30
				0.71						0.28	
3 7.5	F.	20.75	20.71		0.76	4 7.8	E.	10.28	10.25		0.39
				0.82						0.50	
5 8.9	E.	19.05	19.02		0.80	5 13.8	F.	10.91	10.87		0.56
				0.78						0.63	
7 2.0	Ha.	17.63	17.69		0.86	6 0.9	E.	11.83	11.80		0.56
				0.95						0.50	
7 21.1	E.	16.96	16.93		0.93	8 10.0	F.	12.53	12.49		0.50
				0.91						0.51	
9 7.1	F.	15.69	15.65		0.76	9 11.7	Ha.	12.97	13.04		0.53
				0.60						0.55	
10 7.1	Ha.	14.98	15.05		0.68	11 14.6	F.	14.25	14.21		0.62
				0.76						0.69	
11 5.3	E.	14.34	14.31		0.76	12 10.0	Ha.	14.70	14.76		0.63
				0.26						0.57	
16 10.4	Ha.	12.55	12.61		0.19	14 9.4	F.	15.93	15.89		0.55
				0.12						0.53	
18 6.6	F.	12.43	12.39		0.24	15 16.7	Ha.	16.52	16.59		0.55
				0.36						0.57	
19 9.2	Ha.	11.92	11.98		0.40	16 12.2	E.	17.08	17.05		0.71
				0.45						0.85	
21 11.4	F.	11.08	11.04		0.44	17 5.2	F.	17.69	17.65		0.68
				0.44						0.52	
22 7.5	Ha.	10.61	10.67		0.40	19 14.4	E.	18.91	18.88		0.62
				0.35						0.72	
23 10.8	E.	10.31	10.28		0.50	20 12.5	F.	19.59	19.55		0.68
				0.64						0.64	
24 12.2	F.	− 9.64	− 9.60		+ 0.58	21 11.9	Ha.	− 20.12	− 20.18		− 0.64
				+ 0.53						− 0.41	

TABLE D.—*Adopted Corrections and Rates of the Kessels Clock, &c.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Rate between Groups.	Adopted Daily Rate.
d. h.		s.	s.	s.	s.	d. h.		s.	s.	s.	s.
May 25 6.3	E.	− 22.36	− 22.33	− 0.18	− 0.30	July 13 14.5	F.	− 36.42	− 36.38	− 0.25	− 0.24
June 6 14.0	F.	24.60	24.56	0.13	0.15	14 13.8	E.	36.66	36.63	0.44	0.34
7 12.2	E.	24.71	24.68	0.42	0.28	15 16.7	S.	37.12	37.12	0.39	0.42
8 11.3	F.	25.13	25.09	0.34	0.38	16 22.3	E.	37.63	37.60	0.26	0.32
10 14.8	E.	25.84	25.81	0.19	0.26	18 7.9	S.	37.96	37.96	0.36	0.31
11 14.2	F.	26.03	25.99	0.50	0.35	19 17.4	E.	38.49	38.46	0.74	0.55
14 15.3	F.	27.55	27.51	0.36	0.43	19 7.0	F.	38.92	38.88	0.09	0.42
14 5.2	S.	27.72	27.72	0.46	0.41	21 11.5	S.	38.97	38.97	0.60	0.34
17 12.8	F.	28.82	28.79	0.27	0.36	21 5.3	E.	39.45	39.42	0.32	0.46
18 15.3	S.	29.09	29.10	0.53	0.40	23 16.1	F.	39.92	39.88	0.33	0.32
19 0.0	E.	29.84	29.81	0.44	0.48	26 8.2	F.	40.81	40.78	0.34	0.34
20 16.8	F.	30.16	30.12	0.11	0.28	27 6.4	E.	41.45	41.42	0.33	0.33
21 11.7	S.	30.21	30.21	0.69	0.40	28 8.4	Ha.	41.71	41.77	− 0.33	0.33
22 10.8	E.	30.89	30.86	0.35	0.52	30 15.9	F.	42.25	42.21	0.00	− 0.17
23 14.0	F.	31.30	31.26	0.08	0.22	Aug. 1 19.5	Ha.	42.15	42.21	+ 0.03	+ 0.01
24 16.9	S.	31.34	31.34	0.43	0.25	2 8.8	E.	42.26	42.23	− 0.07	− 0.02
25 11.8	E.	31.71	31.68	0.33	0.38	3 15.0	F.	42.36	42.32	0.24	0.15
26 4.0	S.	31.90	31.90	0.49	0.41	4 15.6	S.	42.56	42.56	− 0.50	0.37
28 10.7	E.	32.56	32.53	0.25	0.37	5 17.6	Ha.	43.04	43.10	+ 0.04	0.23
29 8.1	F.	32.79	32.75	0.20	0.23	6 14.9	E.	43.10	43.07	− 0.23	0.10
30 13.5	S.	32.99	33.00	0.80	0.50	8 11.4	S.	43.47	43.47		0.25
30 4.2	E.	33.52	33.49	0.24	0.52	8 18.5	Ha.	43.51	43.57	0.26	0.25
July 5 13.6	F.	34.59	34.55	0.22	0.23	12 17.8	S.	44.55	44.55		0.26
8 16.9	F.	35.27	35.23	0.19	0.20	12 14.3	F.	44.65	44.61		0.26
9 14.6	S.	35.40	35.40	0.21	0.20	12 18.0	Ha.	44.52	44.59	− 0.27	0.26
11 18.2	F.	35.90	35.86	0.02	0.12	15 18.6	Ha.	45.37	45.43		0.27
11 5.5	S.	− 35.86	− 35.87	− 0.22	− 0.12	15 18.7	E.	− 45.45	− 45.42		− 0.27

TABLE E.—*Observations of the Nadir Point, together with the Resulting Zenith-Point Corrections of the Transit Circle, in the Year* 1870.

Day and Sidereal Hour.			Observer.	Readings of Microscope Micrometers.					Telescope Micrometer.	Circle Reading.	Zenith-Point Correction.
				I.		II.	III.	IV.			
										179° 58′	0° 0′
1870.	d.	h.		r.	"	"	"	"	r.	"	"
Feb.	2	7.0	Ha.	9	22.0	22.2	21.4	20.3	27.634	44.73	74.63
	3	22.5	E.	9	14.1	15.4	17.7	15.6	27.945	45.76	73.60
	3	7.0	E.	9	22.2	21.3	22.2	23.3	27.633	43.98	75.38
	4	23.3	F.	10	6.8	8.2	10.1	10.2	26.459	45.23	74.13
	7	0.0	F.		0.6	1.6	2.6	0.7	26.028	59.42	59.94
	9	5.2	E.		8.2	11.1	12.5	11.5	25.334	60.55	58.81
	10	6.0	F.		1.5	2.1	3.2	4.2	25.827	61.12	58.24
	10	9.5	F.		3.2	4.9	6.0	6.9	25.676	60.92	58.44
	12	8.5	E.		12.0	12.5	15.1	14.6	25.227	59.48	59.88
	13	8.5	F.		1.8	2.3	5.2	5.8	25.764	61.05	58.31
	16	9.0	F.		3.2	5.1	7.4	7.9	25.446	63.79	55.57
	16	12.0	F.		3.7	6.7	9.5	10.0	25.290	64.60	54.76
	17	22.7	Ha.		12.5	14.0	10.4	8.9	24.990	65.21	54.15
	19	1.0	F.		9.8	12.0	15.0	15.9	24.990	63.48	55.88
	19	8.5	F.		5.3	7.8	10.1	12.0	25.290	63.28	56.08
	21	23.0	E.		4.5	5.9	5.5	8.5	25.268	66.31	53.05
	22	22.5	F.		1.0	2.2	1.9	3.3	25.498	66.80	52.56
	24	23.0	E.		7.0	6.1	8.7	9.1	25.271	64.65	54.71
	25	1.0	F.		1.4	3.0	5.3	5.6	25.313	67.90	51.46
	25	7.0	F.		3.6	5.0	7.2	8.4	25.245	66.72	52.64
	25	12.0	F.		1.7	3.5	5.4	7.8	25.282	67.60	51.76
	26	10.0	Ha.		10.2	9.3	6.0	4.2	25.155	66.72	52.64
Mar.	1	10.0	Ha.		8.0	6.0	3.5	2.3	25.244	67.83	51.53
	2	9.0	E.		3.2	4.2	4.6	8.2	25.221	67.57	51.79
	3	1.5	F.		3.6	6.2	8.0	10.9	25.038	68.75	50.61
	3	11.5	F.	9	29.8	0.9	3.2	6.5	25.315	69.09	50.27
	5	9.3	E.		0.8	0.2	3.0	5.5	25.502	66.46	52.90
	7	9.2	Ha.		2.7	0.6	28.2	28.6	25.568	67.81	51.55
	8	23.8	E.		7.8	2.7	5.4	6.7	25.286	66.46	52.90
	9	2.0	F.		4.1	28.6	1.3	1.8	25.457	68.07	51.29
	9	12.5	F.		8.5	3.0	5.4	8.0	25.194	67.33	52.03
	10	23.8	Ha.	9	22.5	22.7	20.6	27.6	26.108	66.22	53.14
	10	9.2	Ha.		0.8	27.2	24.8	2.7	25.719	66.64	52.74
	11	23.3	E.	9	26.5	26.4	23.3	26.2	25.874	67.55	51.81
	11	8.2	E.		5.0	1.8	28.3	0.7	25.504	67.36	52.00
	16	0.3	Ha.	9	26.3	20.3	23.7	28.1	26.024	66.25	53.11
	16	12.2	Ha.	9	27.6	23.7	22.1	24.6	26.014	66.52	52.84
	18	2.0	F.		1.5	29.1	27.7	28.6	25.523	69.30	50.06
	18	11.7	F.		6.3	2.7	0.0	2.2	25.368	68.08	51.28
	19	0.3	Ha.	9	26.7	26.2	23.3	25.2	25.782	69.20	50.16
	19	12.3	Ha.		0.3	27.0	24.0	26.8	25.935	65.19	54.17
	21	14.0	F.		9.6	7.4	0.1	2.4	25.602	62.43	56.93
	22	0.6	Ha.		4.7	5.6	27.8	0.6	25.774	62.49	56.87
	23	0.5	E.		5.4	4.4	0.4	0.8	25.720	62.75	56.61
	24	23.5	F.	9	27.9	20.1	21.0	24.0	26.274	63.78	55.58
	24	13.0	F.		0.4	27.3	22.0	23.8	26.101	63.79	55.57
	25	0.8	Ha.		1.0	0.6	25.3	27.7	25.865	64.64	54.72

TABLE E.—*Observations of the Nadir Point, &c.*—Continued.

Day and Sidereal Hour.			Observer.	Readings of Microscope Micrometers.				Telescope Micrometer.	Circle Reading.	Zenith-Point Correction.
				I.	II.	III.	IV.			
									179° 58′	0° 0′
1870.	d.	h.		r. ″	″	″	″	r.	″	″
Mar.	25	10.0	Ha.	3.0	1.8	25.3	27.6	25.866	63.86	55.50
	30	1.7	F.	3.2	1.7	25.3	28.8	26.304	56.82	62.54
Apr.	5	1.3	F.	9 26.9	22.9	17.5	20.9	26.798	56.47	62.89
	6	1.8	Ha.	3.0	2.7	27.0	29.6	26.236	57.03	62.33
	7	12.9	Ha.	6.7	5.6	28.4	0.4	26.058	57.56	61.80
	8	1.7	F.	6.4	4.5	27.1	0.7	26.126	57.11	62.25
	8	10.7	F.	1.6	29.7	22.1	19.8	26.483	58.03	61.33
	9	2.0	Ha.	7.5	9.0	0.5	1.7	25.903	58.02	61.34
	9	13.5	Ha.	12.3	11.2	2.3	4.3	25.824	56.40	62.96
	12	1.8	Ha.	15.0	14.6	5.8	7.5	25.516	57.91	61.45
	12	13.5	Ha.	13.7	13.3	3.7	4.7	25.738	56.38	62.98
	13	1.8	E.	7.4	7.5	26.6	0.2	26.028	57.88	61.48
	18	14.0	Ha.	11.2	9.1	0.6	2.4	25.986	57.15	62.21
	22	13.5	E.	13.4	12.3	2.4	4.0	25.884	54.98	64.38
	22	21.3	E.	7.0	7.6	28.3	0.8	26.024	57.44	61.92
	23	2.8	F.	9 27.6	25.3	5.4	4.0	26.168	58.08	61.28
	23	14.0	F.	4.0	1.6	21.2	24.6	26.553	54.91	64.45
	23	21.8	F.	1.9	1.1	20.9	24.4	26.588	55.15	64.21
	25	13.5	E.	6.9	4.2	25.7	28.4	26.372	54.24	65.12
	26	2.7	F.	9 28.6	29.0	20.0	22.2	26.567	57.60	61.76
	26	14.2	F.	8.6	6.0	26.1	28.0	26.306	54.36	65.00
	27	15.0	Ha.	9.3	9.1	27.6	29.3	26.134	55.35	64.01
	30	3.2	Ha.	13.0	13.2	3.2	3.5	25.879	54.86	64.50
	30	15.5	Ha.	13.4	11.9	0.6	2.5	25.994	54.22	65.14
May	2	14.0	F.	13.0	10.8	29.6	0.9	25.994	55.24	64.12
	4	12.0	E.	15.0	12.8	0.7	2.8	25.908	54.81	64.55
	5	14.7	F.	13.8	29.1	10.7	13.8	26.036	54.59	64.77
	6	3.6	Ha.	9.0	8.7	27.4	29.4	26.218	54.26	65.10
	7	3.5	E.	4.5	4.4	22.3	25.6	26.456	55.04	64.32
	8	10.3	F.	5.9	2.8	21.3	23.9	26.550	54.33	65.03
	9	4.5	Ha.	4.2	4.6	22.5	25.0	26.444	55.35	64.01
	9	12.8	Ha.	6.4	4.6	21.6	25.0	26.478	54.51	64.85
	11	14.7	F.	3.6	0.2	19.3	21.6	26.688	54.51	64.85
	12	3.8	Ha.	9 29.7	0.4	19.5	22.0	26.715	54.87	64.49
	12	14.9	Ha.	2.3	29.8	18.8	22.2	26.730	54.27	65.09
	13	3.8	E.	1.0	2.0	21.4	24.3	26.400	57.93	61.43
	14	3.8	F.	9 28.6	29.9	18.5	21.8	26.748	55.08	64.28
	14	15.0	F.	8.8	5.4	22.4	26.5	26.376	54.69	64.67
	15	15.0	Ha.	9.0	7.6	24.1	26.9	26.346	54.03	65.33
	16	14.3	E.	7.8	8.0	25.2	27.8	26.222	55.78	63.58
	16	17.3	E.	14.5	11.3	27.5	29.1	26.106	54.00	65.36
	17	4.8	F.	6.5	7.5	25.0	26.8	26.360	54.27	65.09
	19	6.2	E.	5.0	5.9	23.6	25.8	26.390	55.18	64.18
	19	14.0	E.	11.9	10.6	26.9	29.1	26.233	53.04	66.32
	19	21.0	E.	12.6	11.1	27.7	0.0	26.150	53.58	65.78
	20	4.8	F.	9.2	8.5	25.5	26.6	26.350	53.42	65.94
	20	15.6	F.	10.5	8.3	23.1	25.0	26.496	51.91	67.45
	21	12.8	Ha.	20.0	18.9	3.2	3.4	26.048	49.11	70.25
	25	6.0	E.	12.8	17.6	3.6	3.5	26.014	51.64	67.72

TABLE E.—*Observations of the Nadir Point, &c.*—Continued.

Day and Sidereal Hour.			Observer.	Readings of Microscope Micrometers.				Telescope Micrometer.	Circle Reading.	Zenith-Point Correction.
				I.	II.	III.	IV.			
									179° 58′	0° 1′
1870.	d.	h.		r. ″	″	″	″	r.	″	″
June	5	10.8	F.	15.5	18.0	2.6	1.9	26.091	50.33	9.03
	6	14.0	F.	18.4	17.0	2.4	1.6	26.168	48.81	10.55
	7	5.5	E.	14.2	20.2	5.4	3.6	25.981	50.67	8.69
	7	14.5	E.	21.0	21.8	5.8	5.5	25.982	48.00	11.36
	8	5.5	F.	25.6	27.4	10.9	10.9	25.537	49.83	9.53
	10	16.0	E.	17.0	17.1	1.5	29.8	26.248	48.58	10.78
	11	6.7	S.	21.6	25.2	9.0	7.0	25.668	50.59	8.77
	11	15.7	S.	21.5	20.4	5.5	4.6	25.898	49.78	9.58
	14	17.5	F.	18.0	17.5	1.7	1.3	26.160	49.16	10.20
	15	6.8	S.	18.8	20.1	4.4	3.7	25.951	50.23	9.13
	17	6.1	F.	17.1	18.5	4.5	3.9	25.914	51.54	7.84
	17	17.9	F.	14.9	14.4	28.8	28.7	26.251	50.84	8.52
	17	22.8	F.	25.0	24.7	8.6	8.4	25.601	50.64	8.72
	18	6.6	S.	15.4	16.3	1.8	1.6	26.120	50.60	8.76
	18	15.3	S.	20.6	21.3	4.7	3.4	25.858	50.90	8.46
	19	0.3	E.	16.5	17.7	2.6	1.8	26.176	48.89	10.47
	20	6.5	F.	9.9	12.7	27.1	26.7	26.452	50.21	9.15
	20	18.5	F.	15.5	15.2	29.7	28.5	26.308	49.28	10.08
	21	5.0	E.	11.3	13.8	27.2	28.0	26.438	49.46	9.90
	21	16.0	S.	19.6	19.5	4.0	3.1	25.916	50.95	8.45
	21	19.2	S.	18.4	18.2	2.9	2.5	25.958	51.37	7.99
	22	8.0	E.	13.3	15.8	0.4	0.4	26.087	52.41	6.95
	22	15.5	E.	19.0	17.0	1.6	2.3	26.064	50.26	9.10
	22	1.5	E.	10.6	13.2	28.5	29.3	26.237	52.20	7.16
	23	6.8	F.	8.3	10.7	26.2	26.4	26.326	53.33	6.03
	23	18.4	F.	11.9	10.6	25.4	26.9	26.422	51.07	8.29
	24	7.0	S.	16.9	19.8	3.8	2.8	25.820	53.16	6.20
	24	14.5	S.	22.5	22.2	6.0	5.7	25.754	50.90	8.46
	24	19.0	S.	21.6	20.5	4.9	4.0	25.802	51.49	7.87
	25	6.7	E.	18.8	20.4	4.8	4.0	25.738	53.38	5.98
	25	18.0	E.	24.1	23.6	6.2	6.2	25.748	50.06	9.30
	26	4.0	S.	20.1	20.2	4.0	3.8	25.914	50.52	8.84
	27	18.0	S.	26.6	27.3	9.2	7.0	25.620	49.51	9.85
	28	7.1	E.	12.4	14.7	26.9	27.3	26.323	50.96	8.40
	28	1.5	E.	19.9	22.2	5.7	4.6	25.900	49.65	9.71
	29	7.3	F.	16.3	19.5	2.6	0.6	25.993	51.43	7.93
	30	9.0	S.	22.0	24.0	6.5	5.2	25.730	50.93	8.43
	30	14.0	S.	28.1	28.0	10.6	9.4	26.470	50.01	9.35
	30	18.0	S.	23.1	22.7	5.4	3.4	25.832	50.15	9.21
July	1	5.5	E.	20.4	22.5	4.8	4.4	25.804	51.19	8.17
	5	13.7	F.	9.4	9.9	25.3	25.8	26.398	52.54	6.82
	8	7.8	F.	14.2	15.8	29.4	29.1	26.022	53.77	5.59
	8	19.3	F.	14.2	13.3	27.8	26.8	26.282	51.38	7.98
	11	8.2	F.	16.8	16.8	1.1	2.0	25.988	52.23	7.13
	11	19.5	F.	16.5	15.7	29.8	29.1	26.191	50.53	8.83
	12	7.8	S.	14.2	16.1	29.1	28.4	26.166	51.74	7.62
	13	7.9	F.	13.2	16.1	29.4	28.5	26.159	52.00	7.36
	13	19.2	F.	18.3	16.8	1.3	0.5	26.065	51.01	8.35
	14	7.0	E.	16.5	18.5	3.6	1.9	25.902	52.60	6.76

TABLE E.—*Observations of the Nadir Point, &c.*—Continued.

Day and Sidereal Hour.			Observer.	Readings of Microscope Micrometers.				Telescope Micrometer.	Circle Reading.	Zenith-Point Correction.
				I.	II.	III.	IV.			
									179° 58′	0° 1′
1870.	d.	h.		r. ″	″	″	″	r.	″	″
July	14	20.5	E.	19.8	19.7	3.2	1.8	25.930	51.17	8.19
	15	8.0	S.	15.3	16.9	29.5	29.4	26.058	52.26	6.80
	15	18.0	S.	20.2	20.4	2.4	0.8	25.981	50.57	8.79
	15	21.3	S.	17.6	17.8	29.9	29.1	26.153	50.28	9.08
	16	8.0	E.	20.8	23.2	6.4	3.9	25.681	52.51	6.85
	16	0.5	E.	16.5	16.7	28.6	28.2	26.328	48.70	10.66
	18	7.2	S.	21.5	23.5	5.3	2.6	25.810	50.90	8.46
	18	19.0	S.	21.5	21.0	2.7	0.5	26.060	48.89	10.47
	19	8.0	E.	20.1	22.6	4.7	2.6	25.855	50.94	8.42
	19	18.3	E.	24.7	24.7	7.0	4.8	25.734	49.99	9.37
	19	2.3	E.	16.2	17.5	28.4	28.8	26.233	49.94	9.42
	20	8.4	F.	14.7	17.6	29.4	27.6	26.182	51.12	8.24
	21	7.7	S.	20.5	22.0	3.2	1.4	25.829	52.06	7.30
	21	19.2	S.	21.9	21.2	3.7	1.0	25.831	51.86	7.50
	22	8.5	E.	19.3	20.5	3.5	2.5	25.898	51.33	8.03
	23	8.7	F.	19.1	20.6	3.4	2.9	25.829	52.34	7.02
	23	20.2	F.	21.3	20.9	4.2	0.5	25.899	51.04	8.32
	26	8.8	F.	13.3	16.2	26.6	25.6	26.248	52.01	7.35
	28	9.0	E.	18.1	19.8	1.6	0.4	25.939	52.17	7.19
	29	9.1	Ha.	21.2	22.7	4.4	2.3	25.731	52.69	6.67
	30	8.2	F.	14.9	15.3	29.7	28.8	26.084	52.75	6.61
	30	19.7	F.	18.0	17.4	29.4	29.1	25.991	52.89	6.47
Aug.	1	9.9	Ha.	16.8	18.2	0.5	29.5	25.973	52.89	6.47
	1	20.8	Ha.	18.4	18.7	29.9	29.9	25.942	52.89	6.47
	2	9.0	E.	16.2	19.7	1.3	0.2	25.859	54.03	5.33
	3	10.0	F.	11.2	13.4	25.3	24.1	26.313	52.93	6.43
	3	21.0	F.	18.3	16.7	29.0	28.1	26.068	52.16	7.20
	4	9.5	S.	19.8	20.3	1.9	0.2	25.867	52.71	6.65
	5	9.5	Ha.	17.2	18.8	1.0	29.8	25.956	52.70	6.66
	5	16.7	Ha.	20.7	20.2	1.8	0.8	25.902	51.84	7.52
	5	21.0	Ha.	16.6	15.7	27.4	27.4	26.161	51.98	7.38
	6	9.5	E.	17.4	19.3	1.2	0.9	25.917	52.79	6.57
	6	18.0	E.	22.4	21.6	2.7	2.3	25.723	53.21	6.15
	6	21.0	E.	20.6	20.4	1.6	1.8	25.803	53.13	6.23
	8	9.5	S.	21.4	19.4	2.0	0.2	25.812	53.34	6.02
	8	21.0	S.	21.8	20.4	0.9	29.5	25.930	51.64	7.72
	9	10.2	Ha.	17.5	18.8	28.2	28.0	26.078	51.65	7.71
	12	9.0	S.	12.1	12.3	23.6	23.2	26.432	51.81	7.55
	12	19.0	S.	18.0	17.1	27.8	26.9	26.112	52.06	7.30
	12	22.7	S.	18.8	17.0	27.6	27.0	26.162	51.16	8.21

THE MERIDIAN TRANSIT INSTRUMENT.

During the year this instrument was used for observing stars whose positions in declination had been previously determined by the Mural Circle or the Prime Vertical Transit Instrument, and for a portion of the year the moon and the larger planets were likewise observed. The method of observation was that used in previous years.

The transit system consists of five groups or tallies of vertical threads, and in addition to these there are three vertical threads, movable by a micrometer-screw, and two stationary horizontal ones. With the clamp-end of the axis to the east, the tallies are named, in the order of the transit of stars above the pole, A, B, C, D, and E.

The tally over which an object has been observed is shown by the inspection of the intervals between the threads. The individual threads of each tally are designated by the numbers 1, 2, 3, 4, 5, for A, C, and E, and 1, 2, and 3 for B and D, respectively. One vertical thread, A_0, is outside of tally A, and another, E_6, is outside of E. These two, with A_5, B_1, C_3, D_3, and E_1, constitute a system over which transits with eye and ear may be conveniently observed.

From the mean of a number of observations of Polaris and δ Ursæ Minoris, the equatorial intervals between each thread and the mean of B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, were found to be as follows, the notation corresponding to clamp east:

Equatorial Intervals.

Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.
	s.		s.		s.		s.		s.
A_1	+35.702	.	. .	C	+ 2.365	D_1	−11.901	E_1	−30.147
A_2	+34.583	.	. .	C_2	+ 1.257	D_2	−13.091	E_2	−32.605
A_3	+33.253	B_1	+14.715	C_3	+ 0.125	D_3	−14.715	E_3	−33.828
A_4	+31.951	B_2	+12.927	C_4	− 1.167	.	. .	E_4	−35.017
A_5	+29.831	B_3	+11.785	C_5	− 2.303	.	. .	E_5	−36.289

The intervals for A_0 and E_6, not having been used, are not given.

The times of transit of all objects more than 5° distant from the pole were recorded by means of the Morse register.

INSTRUMENTAL ERRORS.

Aided by a collimating eye-piece, the error of level and collimation were obtained by reversing the instrument over a basin of mercury, and measuring with the micrometer-screw of the eye-piece the distance between the central thread and its image seen in the mercury. If we represent by 2Δ the distance of the central thread west of its image when the clamp-end of the axis is east; by $2\Delta^1$, the same quantity, when the clamp is west; by p, the excess of the radius of the clamp-pivot divided by the distance between the pivots; and by $-r$ the reduction of the central thread to the mean of the system B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, and by a the correction for diurnal *aberration* $= -0^s.016$ in this latitude, we have:

$$c = \tfrac{1}{2}(\varDelta - \varDelta^1) - p + r + a, \text{ for clamp east.}$$
$$c = -\tfrac{1}{2}(\varDelta - \varDelta^1) + p - r + a, \text{ for clamp west.}$$
$$b = -\tfrac{1}{2}(\varDelta + \varDelta^1) - p, \text{ for clamp east.}$$
$$b = -\tfrac{1}{2}(\varDelta + \varDelta^1) + p, \text{ for clamp west.}$$

The value of p, as determined in 1864, was $p = +0^s.008$; the numerical value of r for the current year is $r = -0^s.125$. All the observations for determining the errors of collimation and their results are given in the subjoined table, in which r, the value of a revolution of the micrometer, is $1^s.5865$. When great changes occur in the values of c between consecutive dates, they have been caused by adjustment with the collimating screws.

Date.	2Δ	$2\Delta^1$	C. E.	C. W.	Date.	2Δ	$2\Delta^1$	C. E.	C. W.
1870.	r.	r.	s.	s.	1870.	r.	r.	s.	s.
January 26	0.00	0.00	−0.149	+0.117	October 3	0.00	0.00	−0.149	+0.117
March 11	+ 0.12	+ 0.08	−0.133	+0.101	October 26	+ 0.22	+ 0.20	−0.141	+0.109
May 5	− 0.48	− 0.53	−0.129	+0.097	November 14	+ 0.34	+ 0.29	−0.129	+0.097
June 21	− 0.60	− 0.75	−0.089	+0.057	December 20	+ 0.57	+ 0.50	−0.121	+0.089
August 18	− 0.23	− 0.27	−0.133	+0.101					

When observations to determine the value of c are tolerably accordant on successive dates, a mean is adopted for the whole period of such accordance; and where the differences are too great to permit the inference that they may be due to errors of observation, the changes are assumed to have been uniformly progressive.

The values used in the reductions are stated at the bottom of each page of the printed observations.

The distance which the line of collimation passes from the pole and the point in which the meridian intercepts the equator are used instead of errors of level and azimuth. When the error of collimation is known, the first distance is directly obtained by observations of stars very near the pole, and may be represented by n. The second distance is determined by combining the value of n with the error of the level. Designating the latter by b, the latitude of the Observatory by φ, and representing this second distance by m, we obviously have,

$$m = -n \tan \varphi + b \sec \varphi$$

and the correction applicable to the observed transit of any star, to reduce it to the meridian, will be obtained by the formula,

$$\text{Correction} = m + n \tan \delta + c \sec \delta$$

in which δ represents the apparent declination of the star.

An approximate clock-error having been first obtained from one or more equatorial stars, the value of n was determined generally by comparing the time of transit of Polaris, δ Ursæ Minoris, λ Ursæ Minoris, or 51 Cephei, with the right ascension given in the American Ephemeris and Nautical Almanac for the year 1870, reduced to the date of the observation.

The value of n, found in this manner and used in the reduction of the stars, is published in the table at the bottom of the page of the published observations, under the head of corrections, &c.

It will be readily seen that if m is neither large nor subject to great variation, it will be eliminated through the clock-error. It has not been used separately from the clock-error except when the instrument was used for regulating the mean time of the Observatory, or when large enough to affect the reduction of the moon, and is therefore not always published in its usual place.

The clock-error was obtained from the corrected transits of one or more of the standard stars whose mean place for 1870.0 is given in the American Ephemeris.

The apparent place of these stars for the date was taken from the Ephemeris for 1870.

The clock used in observing was that of Charles Frodsham.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date and initial letter of the observer's name, the day commencing at apparent noon.

Column 2 contains the name of the object, or its approximate declination.

The following system of nomenclature was adopted. Stars contained in the Catalogue of the British Association are designated in the order of precedence:

1. By the constellation and Bayer letter there given.
2. By the constellation and Flamsteed number there given.
3. By their number in the catalogue.

Other stars found in published catalogues are designated by the name and number in the catalogue.

Column 3 contains the number for reference.

The following abbreviations occur:

O. Arg. N. for Oeltzen's Catalogue from Argelander's Northern Zones.

O. Arg. S. for Oeltzen's Catalogue from Argelander's Southern Zones.

Weisse (2) for Weisse's Catalogue from Bessel's Zones, from 15 to 25 degrees of north declination.

Some anonymous stars, used in the comparisons of the equatorial, are denominated by a number, followed by the letter W, or the word Washington.

Columns 4 to 14, inclusive, contain the seconds and tenths of the transits over the several threads, as noted by the observer at the time, or as subsequently read from the chronographic record; but as there are twenty-one threads, over each of which observations were taken at different times, the numbers over the columns may not represent the thread at which a star was observed, and this can only become known by comparing the observation with the equatorial intervals.

Column 15 contains the minutes, seconds, and decimals of a second obtained by taking the mean of the preceding times of transits over the threads observed.

Column 16 contains the sum of the corrections necessary to reduce the numbers of the preceding column to the clock-time at which the object crossed the great circle passing through the pole, and the point in which the line of collimation intersects the equator. It consists of two parts:

1. For broken observations of stars, from the mean of the threads B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, by the formula,

$$R = \text{equatorial interval} \times \sec \delta$$

or, if the star was so near the pole that the difference between the sine and arc of the reduction was sensible,

$$\sin R = \sin \text{equatorial interval} \times \sec \delta$$

In case of the moon, the reduction was computed by Professor Airy's formula, published in the Greenwich Observations,

$$\frac{3600 + I}{3600} \times \frac{\sin ☽\text{'s Geo. } Z.\,D.}{\sin ☽\text{'s App. } Z.\,D.} \text{ sec. } ☽\text{'s Geo. } Z.\,D.$$

in which I represents, in seconds of time, the moon's increase of right ascension in one hour of longitude, as given in the Nautical Almanac.

2. The correction for collimation and polar azimuth computed by the formula,

$$\text{Correction} = n \tan \delta + c \sec \delta$$

of which the method of obtaining the factors n and c has already been stated.

Column 17 contains the correction for clock-errors, obtained as stated, and brought forward to the instant of observation by the rate.

Column 18 contains the apparent right ascension of the object observed, obtained from the sum of the three columns immediately preceding.

Column 19 contains the corrections applicable to the preceding column to reduce the observations of the stars to their mean places, 1870.0, or the instant when the sun's mean longitude was 280°. These were computed from "*Constants for the reduction of fixed stars*," given in the American Ephemeris and Nautical Almanac. The corrections include no proper motions except those used in the list of time and azimuth stars.

There will be found at the foot of the page the adopted clock and instrumental corrections, observations of the reflected image of the middle thread, position of the clamp E. or W., and such notes as the observations called for. The several observations of each fixed star reduced to its mean place for 1870.0 are collected in pages 205–215.

As a general rule, the results for the fundamental stars are not given when there were less than four observations in the group used for determining clock-errors.

The magnitude of each star, when estimated by the observer at the time of observation, is given in the tables.

The observations of the year with this instrument were made by Professor M. Yarnall, and Messrs. Frisby, Skinner, and Stone, assistant observers. The observations were reduced by Professor Yarnall, and copied by Mr. Thomas Harrison, the clerk of the Observatory. The list of mean places was made by Mr. Skinner.

THE MURAL CIRCLE.

During the year 1870 the Mural Circle was employed in observing stars whose right ascensions had been previously determined by the Transit Instrument, and for a portion of the year the moon and larger planets were also observed.

MICROMETER AND TRANSIT THREADS.

The diaphragm inserted in October, 1864, was in use throughout 1870. The intervals of the threads were as follows:

Thread.	I.	II.	III.	IV.	1.	2.	3.	4.	5.	VI.	VII.	VIII.	IX.
	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Interval.	+53.6	+40.6	+28.8	+15.7	+3.3	+1.6	0.0	−1.7	−3.5	−16.3	−28.8	−40.8	−52.9

The value of the Micrometer-screw used was determined from the following observations made in 1870; the readings being for intervals of five minutes of arc:

	r.	r.	r.
March 22,	21.7081	31.3027	40.8596
April 18,	20.3742	29.9793	39.5384
May 4,	20.4879	30.0818	39.6453
May 6,	20.4637	30.0667	39.6156

These observations, being reduced, give the value of r at 30 revolutions, $r = 31''.316$.

From this value tables were made in which the variable value from the nadir to each extreme reading was considered as uniform and allowed for as such.

The following notes, bearing on the adjustment, &c., of the instrument, have been extracted from the observing-books:

March 23. Changed the reading of the nadir point.
April 21. Changed the nadir reading 100°.
June 23. Before observing, adjusted microscope D.
June 23. After observing, re-adjusted microscope D.

THE NADIR POINT.

For determination of the nadir point a cap is provided, which fits loosely over any of the eye-pieces of the telescope. Just above the eye-lens the cap has a plate of thin glass inclined at an angle of 45°. This arrangement has the advantage of enabling the observer to collimate without removing the eye-piece used in observation, and thereby avoids the risk of injury to the threads, and prevents the frequent admission of dust by air-currents, &c.

The mode of observation is as follows: The circle telescope is so pointed that when the nadir divisions of the former are accurately under the zeros of the microscopes, the images of the horizontal threads in the field of the latter may be seen at a small distance from the threads themselves. The circle microscopes are read then or at the conclusion of the reflection measures.

MURAL CIRCLE.

The micrometer reading for the true nadir being that which corresponds to the coincidence of each thread seen directly with the image of the other seen by reflection, the images were alternately made to measure, on each side of the threads, spaces equal to their distance apart. As the nadir point thus determined always depends upon the same set of divisions of the circle, and is made with the same part of the micrometer-screw, it is uniformly affected with the errors of those divisions and by an inaccuracy peculiar to that portion of the screw.

METHOD OF OBSERVING.

The method of observing was the same as in previous years, and consisted essentially in transferring the subdivision of the circle from the microscopes to the micrometer eye-piece. The circle was set so that the divisions nearest to the reading for the given declination were as accurately as possible under the zero of the microscopes. The circle microscopes were read either before or after the observation.

The observations of Professor Yarnall were made by bisecting the objects with the southern horizontal thread, while Mr. Frisby and Mr. Bardwell observed them at an equal distance from each of the horizontal threads. For bisection observations the nadir reading was corrected by half the distance of the horizontal threads, made from the observations of each night.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Columns 1 to 3 and 7 to 12 need no explanation beyond that given in former years. The magnitudes in column 4 are those estimated by the observer at the time of observation.

Columns 5 and 6 show the number of micrometer readings, generally three for each star, and the transit threads over which these readings were made. When the number of micrometer readings does not correspond to the number of threads included between the limits given in column 6, it is understood that the observations were made at equal intervals between those limits.

Column 13 contains the mean of the six microscope readings.

Column 14 contains the mean of the observed micrometer readings.

Column 15 contains the adopted "nadir correction," expressed in micrometer revolutions. It is formed by subtracting the excess of the micrometer reading above 30 revolutions from the excess of the mean circle reading above 100°, and after April 21 above 200°, the reading of microscope A when the telescope pointed to the nadir, that excess being first expressed in micrometer revolutions.

Column 16 gives the corrected meridian micrometer reading formed by applying the following corrections to column 14:

1. The nadir correction.

2. The reduction to the meridian. For observations made on any of the vertical wires, the reduction is given by the formula,

$$\Delta m = -\frac{\sin^2 \frac{1}{2} h}{2 r \sin 1''} \tan \delta$$

h being the equatorial interval in arc of the vertical wire, and r the value of one revolution of the micrometer. Expressing h in seconds of time, and putting for r its value already given, this expression becomes

$$\Delta m = -[5.2405]\, h^2 \tan \delta$$

the value of which, for different wires, is tabulated on pages xxxii and xxxiii of the Introduction to the Washington Observations for 1863.

For stars near the pole, the time having been recorded, this expression becomes

$$\Delta m = -\frac{225 \sin 1''}{4 r} (t - \alpha) \sin 2 \delta$$

t being the true sidereal time of observations and α the right ascension of the star.

3. The correction of unsymmetrical observations of the sun, moon, and planets, on account of motion in declination. In the case of the moon the correction was computed by the formula,

$$\Delta m = [4.943]\, hs \sec \delta\, \Delta \delta$$

hs being the equatorial interval in seconds of time of the vertical wire at which the observation is made, and $\Delta\delta$ the change of declination in seconds of arc for one hour of terrestrial longitude.

4. The correction of unsymmetrical observations for inclination of the micrometer-threads to the horizon. This was:

Jan. 1 to April 9, ... $i = -0.43h$
April 9 to June 23, ... $i = -0.27h$
June 24 to Sept. 9, ... $i = -0.29h$
Sept. 9 to Nov. 10, ... $i = -0.25h$
Nov. 12 to Dec. 29, ... $i = -0.28h$

i denoting the correction for inclination in thousandths of a micrometer revolution, and h the equatorial interval in seconds of time, used with its proper algebraic sign.

Columns 18, 19, and 20 contain the reading of the Newman barometer, its attached thermometer, and the external thermometer. The external thermometer is designated No. 3 in the Appendix to the Washington Observations for 1845, page 54. It is placed outside of the north aperture, several inches beyond the wall, and is read by the help of a sextant telescope attached to the window-frame.

Column 21, entitled "*Instrumental corrections,*" contains the micrometer equivalent, or the difference between the corrected micrometer reading and 30 revolutions converted into arc. If the former quantity is denoted by m, the values in this column will be given by the formula,

$$\text{Corr.} = (30 \text{ rev.} - m)\, r$$

Column 22 contains the apparent zenith distance, equal to the sum of columns 13 and 21, diminished by 90° if the sum be greater than 90°, or subtracted from 90° if less. In the former case the result is marked S, as south; in the latter N, as North.

Column 23 contains the correction for refraction corresponding to the apparent zenith distance and the barometer and thermometer readings. This quantity is computed from Bessel's tables, as given in an expanded form in the Appendix to the Washington Observations for 1845. This correction, added to the apparent zenith distance, gives the corrected geocentric zenith distance, which is not printed.

The following corrections are applied to the thermometer readings for irregularities in the bore of the tube:

Corrections of Thermometer.

Ther. scale.	Corr.	Δ log. ref.	Ther. scale.	Corr.	Δ log. ref.
°	°		°	°	
30	− 0.04	+ .00004	66	+ 0.20	− .00016
32	− .06	+ 5	68	+ .25	− 21
34	− .11	+ 10	70	+ .22	− 18
36	− .08	+ 7	72	+ .12	− 10
38	− .05	+ 4	74	+ .03	− 3
40	− .02	+ 2	76	− .01	+ 1
42	− .01	+ 1	78	− .04	+ 3
44	.00	0	80	− .04	+ 3
46	− .01	+ 1	82	− .01	+ 1
48	− .03	+ 3	84	.00	0
50	− .04	+ 3	86	− .06	+ 5
52	− .03	+ 3	88	− .12	+ 10
54	− .01	+ 1	90	− .14	+ 11
56	− .01	+ 1	92	− .14	+ 11
58	− .03	+ 3	94	− .14	+ 11
60	.00	0	96	− .13	+ 11
62	+ .05	− 4	98	− .12	+ 10
64	+ 0.12	− .00010	100	− 0.12	+ .00010

2. The correction for parallax for observations of the sun, moon, and planets, computed for the first and last, by the formula,

$$p = \pi \,.\, \sin\,(z' - 11'.2)$$

For the moon:

$$\sin p' = \sin \pi \,.\, \sin\,(z' - 11'\ 14''.54) \,.\, [9.9994302]$$

or,

$$p' = \pi \,.\, (z' - 11'\ 14''.54) \,.\, [9.9994302] \,.\, \frac{\sin \pi}{\text{arc}\ \pi} \,.\, \frac{\text{arc}\ p'}{\sin p'}$$

and

$$p = p' \mp \tfrac{1}{2}\,(p \mp s)\, \sin p\, \sin s$$

the upper signs corresponding to observations of the upper limb, and *vice versa*. The quantities

$$\frac{\sin \pi}{\text{arc}\, \pi} \text{ and } \frac{\text{arc}\, p}{\sin p}$$

are given in Tables IX and X, and the correction of p' in the last formula is given in Table XI of the Appendix to the Washington Observations for 1845.

In these formulas

z' represents the observed zenith distance, corrected for refraction.

π, the equatorial horizontal parallax, as given in the American Ephemeris.

s, the semi-diameter of the object.

p, the required correction for parallax.

3. In cases when only one limb of an object is observed, the correction for semi-diameter is included under this head. This correction is in all cases taken from the American Ephemeris.

Column 24 contains the declination of the star, using the assumed north latitude, 38° 53′ 39″.25.

Column 25 contains the reduction from the apparent declination at date to the mean declination for 1870.0.

It was computed by Bessel's formulæ, with the constants of the American Ephemeris and Nautical Almanac; and, in addition to the terms included in that work, it includes also those depending on twice the moon's longitude. Corrections for proper motion have not been applied to any star. The resulting mean places of the stars are collected in pages 217–239.

The right ascensions and declinations of the moon and planets, as determined by the Transit Instrument and Mural Circle, are given in pages 253 and 254.

Column 25 contains the initials of the observer's names:

Y.—Professor M. Yarnall.

F.—Mr. Edgar Frisby.

B.—Mr. F. W. Bardwell.

The observations were reduced by Professor Yarnall, and Mr. A. N. Skinner, assistant observer.

THE EQUATORIAL.

The results of the observations with this instrument will be found on pages 257–259.

The observations of the minor planets are differential observations made with the filar micrometer. The difference of right ascension is found by observing the transits, by means of a chronograph, over three wires, whose equatorial intervals are about 12 seconds. The difference of declination is observed in the common manner, with the exception that, in order to avoid too much use of the screw, a system of five wires is used, whose intervals are frequently measured with one of the high magnifying-powers. Expressed in revolutions of the micrometer-screw, these intervals are as follows:

r.
1 — 2 = 16.835
1 — 3 = 29.912
1 — 4 = 43.289
1 — 5 = 60.076

The use of wires 1 and 5 is avoided as much as possible. The value of one revolution of the micrometer-screw was assumed to be $15''.337$. The magnifying-power was generally 132, but on a few occasions, 209.

The observations are printed in the same form as the equatorial observations of 1868. The signification of the quantities will be understood from the headings of the columns. The right ascensions and declinations have not been corrected for parallax, but the parallactic co-efficients are given in the columns headed $l\Delta p$. These co-efficients have been computed with a value of the solar parallax equal to $8''.85$. The corrections for differential refraction are given in the column $\Delta\rho$. The positions of the stars of comparison have been computed directly from the catalogues, and no "systematic corrections" have been applied.

The observed occultations of stars by the moon will be found on page 259.

After the 1st of October the observer was absent in connection with the expedition to Sicily, to observe the solar eclipse of December 22, 1870.

OBSERVATIONS

WITH THE

TRANSIT CIRCLE.

1870.

SUMMARY OF THE PRINCIPAL CONSTANTS USED IN REDUCING OBSERVATIONS MADE WITH THE TRANSIT CIRCLE DURING THE YEAR 1870.

Approximate distance between any two consecutive wires from I to VII	12¼*s.*
One revolution of the microscope micrometers	30″
One revolution of zenith distance micrometer	$15''.320+0''.0068\ (r.-30)$

CORRECTIONS FOR INCLINATION AND DISTANCES OF DECLINATION WIRES.

Vertical Wire.	Inclination of Central Wires.	Correction for Wire A.	Correction for Wire B.
	″	′ ″	′ ″
I	+ 1.35	+ 2 35.19	− 2 26.70
II	+ 0.90	+ 2 34.92	− 2 27.48
III	+ 0.45	+ 2 34.65	− 2 28.26
IV	0.00	+ 2 34.38	− 2 29.03
V	− 0.45	+ 2 34.11	− 2 29.80
VI	− 0.90	+ 2 33.84	− 2 30.58
VII	− 1.35	+ 2 33.58	− 2 31.36

Constant { Added to reduction to meridian Subtracted from zenith point correction }	″ 1.80
Adopted latitude of the instrument	° ′ ″ 38 53 38.80
One division of hanging level	*s.* 0.058
Position of the instrument.	Clamp east.

Circle B, on the west end of the axis, was this year used in observation, its zenith reading being 0°.

In reversing the instrument the notation of the transit wires is also reversed, so that the wire first reached by an equatorial star is always called wire I.

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s
Feb. 2	1	λ Ursæ Minoris, S.P.	Ha.	. .	. .	38.0	48.0	0.0	13.0	24.0	. .	. .	54 0.20	+13.00	. .	. .	. . . .	. .
	2	ε Hydræ	Ha.	27.9	30.6	32.2	38.3	40.3	42.3	48.5	49.9	52.6	40 40.29	− 0.29	−45.89	−45.85	39 54.15	0.00
	3	ι Ursæ Majoris . .	Ha.	. .	. .	59.1	1.9	5.1	8.2	11.3	. .	. .	51 5.13	− 0.51	. .	−45.85	8 50 18.77	+ 0.08
	4	α Hydræ	Ha.	46.4	49.0	50.6	56.7	58.8	1.0	7.0	8.6	11.1	21 58.20	− 0.24	−45.85	−45.84	9 21 12.72	− 0.02
	5	ε Leonis	Ha.	1.5	4.2	5.8	12.8	14.9	17.2	23.7	25.6	28.3	39 14.89	− 0.36	−45.81	−45.84	9 38 28.69	− 0.08
	6	μ Leonis	Ha.	55.0	57.9	59.7	6.4	8.7	11.2	18.0	19.7	22.5	46 8.79	− 0.36	−45.86	−45.84	9 45 22.59	+ 0.01
	7	α Leonis	Ha.	1.0	5.2	9.2	11.4	13.5	15.6	17.7	21.8	26.1	2 13.50	− 0.31	−45.78	−45.83	10 1 27.36	− 0.09
	8	α Aquilæ	E.	58.2	0.8	2.3	8.5	10.5	12.5	18.8	20.3	23.0	45 10.54	− 0.13	−45.75	−45.76	19 44 24.65	+ 0.05
	9	α Cygni	E.	26.8	30.5	32.5	41.2	44.0	46.8	55.6	57.7	1.3	37 44.04	− 0.23	. .	−45.73	20 36 58.08	+ 0.12
3	10	Sun II, N. . . .	E.	31.7	34.3	36.0	42.3	44.5	46.7	52.8	54.5	57.1	10 44.43	− 0.08	. .	−45.71	21 9 58.64	−77.95
	11	Venus I, S. . .	E.	6.0	8.6	10.2	16.1	18.2	20.3	26.3	28.0	30.5	49 18.24	− 0.11	. .	−45.64	22 48 32.49	+ 1.76
	12	α Pegasi	E.	48.6	51.2	52.8	59.3	1.3	3.4	10.2	11.9	14.0	59 1.41	− 0.14	−45.69	−45.63	22 58 15.64	+ 0.09
	13	α Andromedæ . .	E.	10.8	13.5	15.2	22.3	24.6	26.9	33.8	35.6	38.6	2 24.59	− 0.18	−45.52	−45.59	0 1 38.82	− 0.05
	14	δ Ursæ Minoris, S.P.	E.	. .	. .	. .	. .	. .	2.0	31.0	. .	. .	15 37.35	+ 1.92	. .	. .	. . . .	. .
4	15	Sun I, N. . . .	F.	17.4	19.9	21.6	27.7	30.2	32.0	38.4	40.1	42.7	12 30.00	− 0.16	. .	. .	. . . .	. .
	16	Sun II, S. . . .	F.	33.0	35.7	37.4	43.7	45.8	47.6	54.1	55.7	58.4	14 45.71	− 0.16	. .	. .	. . . .	. .
6	17	α Lyræ	F.	56.9	0.1	2.1	10.0	12.5	15.2	23.0	25.0	28.2	33 12.56	− 0.13	−41.83	. .	18 32 30.60	+ 0.02
9	18	Moon I, S. . .	E.	. .	. .	. .	. .	. .	. .	45.1	46.5	49.3	14 36.27	− 0.14	. .	−39.57	4 13 56.56	+65.35
	19	α Tauri	E.	54.7	57.3	58.9	5.2	7.3	9.5	15.8	17.4	20.0	29 7.34	− 0.14	−39.56	. .	. . . .	. .
10	20	Sun I, S. . . .	F.	8.4	11.1	12.6	19.0	21.1	23.3	29.4	31.1	33.8	36 21.09	− 0.11	. .	−39.04	21 35 41.94	. .
	21	Sun II, N. . . .	F.	. .	. .	33.1	35.4	37.5	39.6	43.7	45.3	48.0	38 35.33	− 0.11	. .	−39.04	21 37 56.18	. .
	22	α Piscis Australis .	F.	. .	. .	0.0	2.4	4.8	7.2	9.6	. .	. .	51 4.81	− 0.10	−39.04	−38.99	22 50 25.64	+ 0.08
	23	α Pegasi	F.	42.1	44.6	46.2	52.5	54.6	56.7	3.1	4.6	7.2	58 54.62	− 0.13	−38.93	−38.98	22 58 15.51	− 0.02
	24	11 Orionis. . . .	F.	34.6	37.2	38.9	45.3	47.4	49.3	55.7	57.4	0.0	57 47.32	− 0.13	−38.68	−38.72	4 57 8.41	− 0.11
	25	Moon I, S. . . .	F.	31.0	33.9	35.5	42.1	44.4	46.6	53.3	54.9	57.6	7 44.37	− 0.13	. .	−38.71	5 7 5.53	+67.29
	26	δ Orionis. . . .	F.	48.7	51.2	52.7	58.9	0.9	3.0	9.1	10.5	13.0	26 0.89	− 0.12	−38.66	−38.70	5 25 22.07	− 0.07
	27	α Columbæ . . .	F.	. .	. .	. .	35.7	38.1	40.7	45.6	47.5	50.4	35 35.73	− 0.09	−38.61	−38.70	5 34 56.94	− 0.13
	28	δ Ursæ Minoris, S.P.	F.	10.0	27.5	2.0	53.0	. .	. .	. .	. .	. .	14 44.08	− 0.38	. .	. .	. . . .	. .
	29	ε Canis Majoris. .	F.	56.5	59.5	1.2	8.3	10.6	12.9	19.9	21.7	24.5	54 10.57	− 0.10	−38.61	−38.64	6 53 31.83	− 0.08
	30	δ Canis Majoris. .	F.	32.1	35.0	36.8	43.7	45.8	48.0	54.9	56.6	59.4	3 45.81	− 0.10	−38.55	−38.63	7 3 7.08	− 0.13
	31	δ Geminorum . .	F.	47.5	50.3	51.9	58.5	0.7	2.9	9.5	11.1	13.9	13 0.70	− 0.14	−38.59	−38.62	7 12 21.94	− 0.09
	32	67 Piazzi	F.	. .	. .	49.0	54.5	0.2	5.7	11.3	. .	. .	18 0.16	− 0.13	. .	−38.62	7 17 21.41	− 0.23
	33	α^2 Geminorum . .	F.	43.0	46.0	47.9	55.0	57.4	59.9	7.9	9.0	12.0	26 57.57	− 0.14	−38.70	−38.61	7 26 18.82	+ 0.33
	34	α Canis Minoris. .	F.	. .	. .	4.9	7.0	9.0	11.0	13.1	. .	. .	33 9.01	− 0.13	−38.58	−38.61	7 32 30.27	− 0.17
	35	β Geminorum . .	F.	. .	. .	56.1	58.5	0.8	3.1	5.5	. .	. .	38 0.81	− 0.14	−38.56	−38.61	7 37 22.06	− 0.08
	36	3 Ursæ Majoris . .	F.	57.2	4.1	8.4	25.3	31.0	36.6	53.7	57.9	4.9	0 31.01	− 0.14	. .	−38.59	7 59 52.28	− 0.35
	37	ε Hydræ	F.	20.5	23.2	24.8	30.8	32.9	34.9	41.1	42.6	45.2	40 32.89	− 0.13	−38.62	−38.56	8 39 54.20	+ 0.02
	38	ι Ursæ Majoris . .	F.	39.1	42.9	45.0	54.1	57.3	0.3	9.7	12.2	16.0	50 57.40	− 0.14	. .	−38.55	8 50 18.71	− 0.03
	39	σ^2 Ursæ Majoris . .	F.	3.8	10.2	14.4	30.4	35.8	41.2	57.3	1.0	8.0	59 35.79	− 0.14	. .	−38.55	8 58 57.10	− 0.09
	40	α Hydræ	F.	39.2	41.8	43.3	49.5	51.6	53.6	59.8	1.3	3.7	21 51.53	− 0.12	−38.64	−38.54	9 21 12.87	+ 0.07
12	41	51 Cephei	E.	. .	. .	7.0	48.0	33.0	13.0	57.0	. .	. .	39 31.76	+ 2.54	. .	. .	. . . .	. .
	42	ε Canis Majoris. .	E.	4.8	7.6	9.5	6.0	8.6	11.0	18.0	19.8	22.7	54 8.67	− 0.25	−36.58	−36.56	6 53 31.86	− 0.03
	43	Moon I, N. . .	E.	31.0	33.8	35.6	52.1	54.5	56.9	3.6	5.4	8.1	2 54.56	− 0.18	. .	−36.56	7 2 17.82	+70.50
	44	δ Geminorum . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	45	φ Geminorum . .	E.	55.9	58.7	0.4	7.3	9.6	11.9	18.7	20.5	23.3	46 9.59	− 0.16	−36.51	−36.53	7 45 32.90	− 0.10
	46	3 Ursæ Majoris . .	E.	55.3	2.4	6.7	23.5	29.2	34.8	51.8	56.3	3.4	20 29.27	+ 0.10	. .	−36.52	7 59 52 85	+ 0.24
	47	ι Ursæ Majoris . .	E.	37.1	41.1	43.3	52.6	55.6	58.6	8.0	10.3	14.0	50 55.62	− 0.09	. .	−36.49	8 50 19.04	+ 0.29

18. R. A. observed over set D. Bisection at wire C_1.
21. R. A. observed over C_{2-5} and D.
25. Bisections at wires II–VI. Assumed circle reading 19° 2′.
28. R. A. observed over wires C_1 and B. Bisection at wire B_1.

Number.	Circle Division.	MICROSCOPE MICROMS. I.	II.	III.	IV.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	307 46	9 21.7	22.4	20.6	22.0	27	875	991	040	920	962	74.6	307 49 55.8	700	− 1 16.7	358 55 0.3	− 0.9
2																	
3	350 18	9 21.6	20.8	19.6	19.6	32	. .	. .	. .	170	145	74.6	350 20 52.4	712	− 10.2	41 27 3.4	− 1.6
4	46 54	9 21.0	21.2	20.7	22.6	26	. .	115	. .	942	. .	74.6	46 58 25.8	715	+ 1 1.8	98 5 48.8	− 2.7
5	14 26	9 22.6	23.6	22.5	22.5	23	070	988	. .	890	860	74.6	14 31 11.7	. .	+ 15.5	65 36 48.4	0.0
6	12 12	9 23.1	23.4	22.0	22.0	26	018	. .	. .	. .	812	74.6	12 16 26.7	. .	+ 13.0	63 23 0.9	− 0.7
7	26 12	9 25.4	24.8	24.1	23.9	23	112	. .	. .	. .	990	74.6	26 16 8.3	720	+ 29.6	77 22 59.1	− 0.2
8	30 18	22.2	20.3	21.8	20.3	29	. .	. .	. .	532	503	73.6	30 21 30.6	670	+ 34.7	81 28 26.5	− 0.3
9	354 0	20.2	20.2	20.3	19.7	24	. .	755	. .	670	. .	73.6	354 4 46.5	655	− 6.1	45 11 1.6	− 1.5
10	54 58	21.4	21.4	22.6	21.0	29	805	920	. .	. .	. .	73.6	55 1 26.5	640	+ 1 24.0	106 9 11.7	
11	40 26	21.6	19.0	20.5	19.8	26	. .	125	. .	115	. .	73.6	40 30 24.5	. .	+ 50.2	91 37 35.9	
12	24 18	23.7	23.7	26.3	24.7	23	. .	. .	. .	700	682	73.6	24 22 56.3	. .	+ 26.6	75 29 44.1	+ 2.4
13	10 26	21.7	22.7	23.8	21.6	23	265	200	. .	072	065	73.6	10 31 8.0	625	+ 10.9	61 37 40.1	+ 0.4
14	305 28	5.5	3.3	5.7	7.5	29	655	675	. .	. .	. .	75.4	305 31 16.6	740	− 1 24.1	356 36 13.7	+ 1.2
15	54 38	10 6.2	6.7	3.7	4.5	21	195	104	. .	. .	. .	74.1	54 43 26.6	760	+ 1 25.3	105 51 13.1	
16	55 12	10 8.9	9.5	10.8	9.6	26	. .	. .	. .	440	416	74.1	55 16 0.0	. .	+ 1 27.0	106 23 48.2	
17	0 10	10 1.6	1.8	2.6	1.7	26	. .	312	. .	275	. .	59.9	0 13 56.8	794	+ 0.2	51 20 18.2	+ 0.5
18	22 26	10 10.7	11.1	12.1	12.7	24	. .	130	. .	. .	. .	58.8	22 30 18.5	. .	+ 24.5	73 37 4.2	
19	22 34	10 6.8	8.2	9.4	10.6	23	175	220	. .	160	165	58.1	22 38 36.3	665	+ 24.7	73 45 22.2	+ 1.1
20	53 18	9.0	10.5	10.1	11.5	21	457	300	. .	. .	. .	58.3	53 23 2.3	. .	+ 1 19.5	104 30 43.0	
21	52 46	6.8	6.8	9.2	5.8	23	. .	. .	. .	086	997	58.3	52 50 38.6	665	+ 1 18.0	103 58 17.8	
22																	
23	24 18	2.0	1.0	4.5	4.5	22	295	254	. .	138	122	58.3	24 22 56.5	664	+ 26.8	75 29 44.5	+ 1.9
24	23 36	10 5.0	5.8	7.9	8.2	25	375	375	. .	320	295	58.3	23 40 4.8	738	+ 26.4	74 46 52.4	+ 0.8
25	19 48	10 12.5	15.4	16.7	16.7	17	550	550	. .	1105	1158	58.3	19 57 50.7	. .	+ 21.8	71 4 33.7	
26	39 13	8 8.2	8.5	11.3	11.2	26	112	030	. .	952	935	58.3	39 16 51.5	. .	+ 49.3	90 24 2.0	− 0.7
27	72 56	5.2	5.4	6.4	6.5	27	. .	. .	. .	920	895	58.3	72 59 24.8	748	+ 3 14.7	124 9 0.7	+ 1.0
28	305 28	10 2.2	29.8	1.7	2.7	29	002	. .	. .	. .	. .	58.3	305 31 12.9	762	− 1 24.5	356 36 9.6	− 1.2
29	67 36	3.7	4.5	4.7	5.7	28	. .	775	. .	588	. .	58.3	67 39 15.5	770	+ 2 26.5	118 48 3.2	+ 0.4
30	64 58	5.5	4.8	5.1	5.8	21	742	728	. .	687	629	58.3	65 3 1.6	. .	+ 2 9.7	116 11 32.5	+ 1.8
31	16 36	5.8	5.5	7.8	7.9	24	740	692	. .	550	535	58.3	16 40 15.8	. .	+ 18.2	67 46 55.2	0.0
32	330 6	5.6	6.0	6.8	8.0	23	. .	. .	. .	598	608	58.3	330 10 31.2	. .	− 34.7	21 16 17.7	− 2.8
33	6 38	2.6	3.7	4.9	4.7	20	. .	. .	. .	505	500	58.3	6 43 20.6	. .	+ 7.1	57 49 48.9	+ 1.0
34	33 16	3.5	4.8	6.5	6.6	26	. .	. .	. .	700	662	58.3	33 19 44.5	. .	+ 39.9	84 26 45.6	− 0.9
35	10 30	5.0	5.7	7.1	7.8	28	. .	. .	. .	648	600	58.3	10 33 14.0	776	+ 11.3	61 39 46.5	− 0.9
36	330 0	2.5	3.4	4.5	5.0	29	. .	. .	. .	670	720	58.3	330 3 1.2	780	− 35.0	21 8 47.4	− 0.7
37	31 54	4.9	4.8	7.5	7.8	19	. .	917	. .	855	. .	58.3	31 59 28.5	. .	+ 38.0	83 6 27.7	+ 0.1
38	350 16	4.9	5.8	7.1	8.0	22	465	420	. .	292	345	58.3	350 20 50.8	. .	− 10.4	41 27 1.6	− 2.0
39	331 10	3.3	4.0	5.0	5.8	23	. .	412	. .	305	. .	58.3	331 14 38.0	. .	− 33.4	22 20 25.8	− 3.0
40	46 54	9 21.1	21.3	19.5	21.0	24	. .	. .	. .	. .	945	58.3	46 58 25.3	796	+ 1 5.2	98 5 51.7	− 1.2
41	311 36	10 11.4	11.1	13.5	15.0	24	590	555	580	500	520	59.9	311 40 12.4	650	− 1 6.2	2 45 27.4	− 1.4
42	67 34	10 7.5	8.4	10.8	9.8	20	. .	250	. .	145	. .	59.9	67 39 22.2	. .	+ 2 22.7	118 48 6.1	+ 2.9
43	17 25	7 24.8	24.3	26.7	28.8	22	820	750	720	750	720	59.9	17 29 56.6	. .	+ 18.6	68 36 36.4	
44	16 36	10 9.5	12.0	16.1	15.7	24	. .	215	. .	155	. .	59.9	16 40 17.4	. .	+ 17.7	67 46 56.3	+ 1.2
45	11 44	10 9.2	9.5	13.5	12.5	27	325	300	. .	260	180	59.9	11 47 32.6	. .	+ 12.4	62 54 6.2	+ 1.8
46	329 58	10 9.7	10.0	12.7	13.2	21	562	. .	470	. .	445	59.9	330 3 0.5	. .	− 34.2	21 8 47.5	− 0.1
47	350 16	12.0	12.2	9.7	7.5	22	. .	190	. .	105	. .	59.9	350 20 51.8	. .	− 10.1	41 27 2.9	− 0.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	30.090	36.5	71.5
15	30.436	34.1	68.0
19	29.678	34.0	57.0
21	29.924	37.0	64.5
41	. .	35.0	

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″		′ ″
10	− 7.3	+ 16 14.8	. .	+ 16 7.5
11	− 17.6	− 26.3	. .	− 43.9
15	− 7.2	+ 16 17.5	. .	+ 16 10.3
16	− 7.3	− 16 17.5	. .	− 16 24.8
18	−20 57.7	− 15 5.1	. .	− 36 2.8
20	− 7.1	− 16 12.6	. .	− 16 19.7
21	− 7.1	+ 16 12.6	. .	+ 16 5.5
25	−18 54.9	− 15 16.7	. .	− 34 11.6
43	−17 9.1	+ 15 45.1	. .	− 1 23.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 13	1	φ Geminorum . .	F.	. .	. .	. .	. .	. .	. .	17.9	19.6	22.4	46 8.71	− 0.11	−35.68	−35.69	7 45 32.91	− 0.09
	2	λ Ursæ Minoris, S.P.	F.	. .	. .	42.0	55.0	5.0	. .	. .	. .	. .	54 6.03	+ 0.63	. .	. .	. . . .	. .
	3	Moon I, N. . .	F.	28.9	31.7	33.3	39.7	42.1	44.0	51.3	53.0	55.7	3 42.19	− 0.10	. .	−35.67	8 3 6.42	+71.19
	4	ε Hydræ	F.	17.6	20.1	21.6	27.9	29.9	32.0	38.2	39.5	42.2	40 29.89	− 0.09	−35.66	−35.65	8 39 54.15	− 0.03
16	5	Uranus, (center) .	F.	40.2	43.0	44.6	51.2	53.4	55.7	2.3	3.9	6.6	20 53.43	− 0.28	. .	−33.06	7 20 20.09	. .
	6	α Canis Minoris .	F.	50.2	53.7	55.3	1.4	3.5	5.6	11.7	13.2	15.9	33 3.39	− 0.26	−32.77	−32.99	7 32 30.14	− 0.26
	7	ε Hydræ	F.	14.9	17.5	19.1	25.2	27.3	29.3	35.6	37.0	39.7	40 27.29	− 0.26	−32.89	−32.96	8 39 54.07	− 0.11
	8	ι Ursæ Majoris . .	F.	33.5	37.5	39.7	48.9	52.0	55.1	4.4	6.7	10.5	50 52.03	− 0.36	. .	−32.96	8 50 18.71	− 0.04
	9	σ^2 Ursæ Majoris . .	F.	. .	. .	20.2	25.4	30.8	36.4	41.7	. .	. .	59 30.92	− 0.53	. .	−32.95	8 58 57.44	+ 0.24
	10	1 Draconis . . .	F.	. .	. .	33.0	47.4	2.0	16.5	30.0	. .	. .	19 1.83	− 1.14	. .	−32.94	9 18 27.75	+ 1.21
	11	ε Leonis	F.	48.9	51.4	53.2	0.0	2.1	4.4	11.0	12.8	15.4	39 2.13	− 0.28	−32.99	−32.93	9 38 28.92	+ 0.01
	12	μ Leonis	F.	42.4	45.2	46.9	53.8	56.0	58.3	5.3	7.0	9.9	45 56.09	− 0.29	−33.00	−32.93	9 45 22.87	+ 0.16
	13	32 Ursæ Majoris . .	F.	46.1	49.6	59.7	4.6	9.4	14.5	19.3	29.5	33.4	9 9.57	− 0.50	. .	−32.91	10 8 36.16	+ 0.44
	14	γ_1 Leonis	F.	9.0	11.6	13.4	19.9	22.1	24.3	30.8	32.4	35.2	13 22.08	− 0.28	−32.93	−32.91	10 12 48.99	0.00
	15	9 Draconis . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .		. .	. . . .	. .
	16	l Leonis	F.	46.8	49.4	51.0	57.2	59.3	1.4	7.6	9.2	11.8	42 59.30	− 0.26	−32.96	−32.89	10 42 26.15	+ 0.08
	17	α Ursæ Majoris . .	F.	49.8	55.5	58.6	12.0	16.5	20.0	33.9	37.1	42.6	56 16.22	− 0.46	. .	−32.88	10 55 42.88	+ 0.27
	18	Moon II, N. . .	F.	39.7	42.3	43.9	50.3	52.4	54.5	0.8	2.4	5.3	7 52.40	− 0.26	. .	−32.88	11 7 19.26	−69.64
	19	τ Leonis	F.	36.7	39.2	40.8	46.9	49.0	51.1	57.0	58.6	1.1	21 48.93	− 0.25	−32.90	−32.87	11 21 15.84	+ 0.01
	20	υ Leonis	F.	39.1	41.6	43.3	49.2	51.3	53.4	59.5	1.1	3.6	30 51.30	− 0.25	−32.80	−32.87	11 30 18.18	− 0.01
	21	α Cygni	Ha.	13.8	17.3	19.4	28.0	30.9	33.6	42.5	44.5	48.2	37 30.91	− 0.18	−32.62	. .	. . . .	. .
17	22	Sun I, S. . . .	Ha.	22.2	24.6	26.3	32.5	34.6	36.7	43.0	44.5	47.2	3 34.62	− 0.08	. .	−32.57	22 3 1.97	. .
	23	Sun II, N. . . .	Ha.	35.0	37.5	39.2	45.4	47.4	49.6	55.8	57.4	0.1	5 47.49	− 0.08	. .	−32.57	22 5 14.84	. .
18	24	γ Aquilæ	F.	21.7	24.6	26.0	32.1	34.5	36.6	43.0	44.3	47.0	40 34.42	0.00	−31.14	−31.04	19 40 3.38	+ 0.13
	25	α Aquilæ	F.	43.6	46.1	47.5	53.8	55.9	57.9	4.1	5.6	8.2	44 55.86	0.00	−30.93	−31.04	19 44 24.82	− 0.07
	26	Mercury, (center) .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .		. .	. . . .	. .
	27	ε Pegasi	F.	4.9	7.5	9.1	15.1	17.4	19.6	25.5	26.9	29.7	38 17.30	0.00	−30.91	−30.96	21 37 46.34	− 0.04
19	28	Sun I, N. . . .	F.	2.5	5.2	6.8	13.1	15.1	17.1	23.3	24.9	27.4	11 15.04	+ 0.05	. .	−30.95	22 10 44.14	. .
	29	Sun II, S. . . .	F.	15.0	17.9	19.2	25.5	27.6	29.7	35.8	37.3	40.1	13 27.57	+ 0.05	. .	−30.95	22 12 56.67	. .
	30	α Andromedæ . .	F.	55.8	58.7	0.4	7.3	9.7	12.0	19.0	20.7	23.7	2 9.70	− 0.06	−30.88	−30.86	0 1 38.84	+ 0.10
	31	Polaris	F.	. .	. .	. .	4.0	27.0	53.0	17.0	. .	. .	11 28.34	− 8.56	. .	−30.83	. . . .	. .
	32	α^2 Geminorum . .	F.	34.8	37.8	39.7	46.9	49.3	51.7	59.0	0.8	3.9	26 49.32	− 0.07	−30.59	−30.62	7 26 18.63	+ 0.21
20	33	Polaris, S. P. . .	Ha.	. .	. .	6.0	42.0	18.0	55.0	29.0	. .	. .	11 17.68	+ 0.36	. .	. .	. . . .	. .
	34	η Bootis	Ha.	46.5	49.2	50.8	57.2	59.5	1.5	7.9	9.6	12.3	48 59.39	− 0.19	−29.27	−29.22	13 48 29.98	0.00
	35	α Draconis . . .	Ha.	53.7	59.6	3.3	17.7	22.5	27.2	41.6	45.2	51.3	1 22.46	− 0.13	. .	−29.28	14 0 53.12	+ 0.04
	36	α Bootis	Ha.	0.5	3.2	4.7	11.4	13.4	15.7	22.3	23.8	26.5	10 13.50	− 0.19	−29.22	−29.21	14 9 44.10	+ 0.01
	37	α^2 Libræ	Ha.	58.3	0.9	2.4	8.8	10.9	13.0	19.3	21.0	23.6	44 10.91	− 0.28	−29.16	−29.20	14 43 41.43	+ 0.01
	38	Moon II, S. . .	Ha.	. .	. .	43.3	45.5	47.6	49.8	52.0	. .	. .	56 47.65	− 0.27	. .	−29.19	14 56 18.19	−68.86
	39	μ^1 Bootis	Ha.	48.4	51.8	53.8	1.4	4.0	6.5	14.2	16.2	19.5	20 3.98	− 0.15	−29.18	−29.18	15 19 34.65	− 0.01
	40	α Coronæ Borealis .	Ha.	26.4	29.3	31.0	37.9	40.1	42.5	49.2	51.0	54.0	29 40.16	− 0.17	−29.17	−29.17	15 29 10.82	0.00
	41	α Serpentis . . .	Ha.	8.8	11.2	12.8	18.9	21.1	23.1	29.3	30.7	33.2	38 21.01	− 0.21	−29.15	−29.17	15 37 51.63	0.00
	42	ε Serpentis . . .	Ha.	36.8	39.5	41.2	47.2	49.2	51.3	57.4	59.0	1.5	44 49.23	− 0.22	−29.11	−29.17	15 44 19.84	− 0.06
	43	ζ Cygni	E.	. .	. .	47.4	49.5	51.8	. .	1.2	3.0	6.0	7 51.90	− 0.08	−29.28	−29.11	21 7 22.71	+ 0.18
21	44	Sun I, N. . . .	E&F	41.0	43.5	45.0	51.3	53.4	55.4	1.8	3.4	5.7	18 53.39	− 0.25	. .	−29.08	22 18 24.06	. .
	45	Sun II, S. . . .	E&F	53.7	55.5	57.0	3.3	5.3	7.5	13.6	15.2	17.9	21 5.44	− 0.25	. .	−29.08	22 20 36.11	. .
	46	Polaris	E.	. .	. .	26.0	45.0	15.0	39.0	59.0	. .	. .	11 13.12	+ 4.07	. .	. .	. . . .	. .
	47	Groom. 3241, S. P.	E.	39.7	31.0	26.1	6.4	59.9	53.7	33.7	28.4	20.2	30 59.90	− 0.33	. .	−28.77	20 30 30.80	+ 1.16
	48	ε Hydræ	E.	10.6	13.1	14.8	20.8	22.9	25.0	31.0	32.7	35.2	40 22.90	− 0.18	−28.58	−28.76	8 39 53.96	− 0.22
	49	ι Ursæ Majoris . .	E.	28.8	32.7	35.0	44.2	47.2	50.2	59.5	1.8	5.8	50 47.24	+ 0.01	. .	−28.76	8 50 18.49	− 0.25

3. Bisections at wires II–VI.
10, 13, 15. R. A. observed over sets B and D.
38. N. P. D. increased by one revolution.
43. R. A. observed over wires C_{1-3} and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	11 44	4.5	4.4	6.5	6.3	27	. .	. .	. .	685	680	58.3	11 47 29.3	. .	+ 12.7	62 54 3.2	— 1.2
2	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. . .	. . . . .	794			
3	18 26	3.4	3.4	6.6	7.3	29	086	968	915	782	760	58.3	18 29 11.8	. .	+ 20.4	69 35 53.4	
4	31 56	0.9	0.0	3.5	4.2	28	. .	100	. .	945	. .	58.3	31 59 28.3	796	+ 38.1	83 6 27.6	— 0.1
5	16 10	10 2.0	3.6	7.0	7.2	26	. .	880	. .	752	. .	56.0	16 13 41.7	788	+ 17.7	67 20 20.6	
6	33 16	1.0	2.9	6.3	6.4	26	732	652	. .	572	563	56.0	33 19 45.3	. .	+ 40.0	84 26 46.5	— 0.3
7	31 56	5.7	7.1	11.0	10.7	27	456	408	. .	318	258	55.6	31 59 29.2	804	+ 38.2	83 6 28.6	+ 0.7
8	350 16	5.8	8.2	10.9	12.3	21	. .	956	. .	895	. .	55.6	350 20 51.9	. .	— 10.4	41 27 2.7	+ 0.2
9	338 10	0.0	29.9	3.6	4.4	23	300	280	. .	260	216	55.5	331 14 35.5	. .	— 33.5	22 20 26.2	— 1.0
10	316 56	0.7	1.3	4.8	5.7	22	700	715	. .	645	645	55.5	317 0 46.6	. .	— 56.9	8 6 10.9	+ 2.3
11	14 26	4.2	5.5	8.7	8.0	20	. .	765	. .	720	. .	55.4	14 31 12.3	808	+ 15.8	65 37 49.3	+ 1.4
12	12 12	3.2	4.5	7.6	6.6	23	835	825	. .	618	622	55.3	12 16 27.9	. .	+ 13.3	63 23 2.4	+ 1.5
13	333 4	4.4	4.9	9.3	9.6	21	890	. .	. .	. .	840	55.2	333 8 54.5	. .	— 30.9	24 14 44.8	— 0.1
14	18 20	1.4	3.6	6.6	6.4	27	. .	. .	. .	419	409	55.2	18 23 31.2	. .	+ 20.3	69 30 12.7	+ 0.6
15	322 28	2.8	3.8	6.7	7.4	27	042	018	. .	008	988	55.2	322 31 37.8	. .	— 46.8	13 27 12.2	+ 0.4
16	27 34	8.8	10.8	14.0	14.2	20	177	129	. .	156	142	55.1	27 39 15.6	810	+ 32.0	78 46 8.8	+ 0.2
17	336 22	3.2	5.0	8.1	8.1	21	. .	450	. .	402	. .	55.0	336 27 2.5	. .	— 26.7	27 32 57.0	— 2.1
18	29 16	10 7.3	9.6	13.0	13.5	34	832	675	500	262	095	55.0	29 17 37.4	. .	+ 34.3	80 24 32.9	
19	35 14	2.0	2.5	5.9	5.9	22	. .	930	. .	804	. .	54.9	35 18 41.7	. .	+ 43.3	86 25 46.2	+ 0.6
20	38 54	5.5	6.0	9.8	10.6	20	. .	422	. .	318	. .	54.9	38 59 15.9	810	+ 49.5	90 6 26.6	+ 0.5
21	354 0	10 10.8	9.9	7.7	6.4	21	900	880	. .	782	740	54.1	354 4 52.8	708	— 6.3	45 11 7.7	+ 0.5
22	50 56	4.8	3.8	9.0	7.0	22	740	824	. .	. .	. .	54.1	51 0 40.8	. .	+ 1 12.4	102 8 14.4	
23	50 24	6.0	3.0	7.4	6.2	24	. .	. .	. .	168	155	54.1	50 28 18.8	630	+ 1 11.1	101 35 51.1	
24	28 30	4.1	5.2	8.0	5.1	20	502	. .	. .	. .	394	55.9	28 35 18.2	. .	+ 33.1	79 42 12.5	+ 0.3
25	30 18	3.8	4.9	8.1	5.2	27	515	492	. .	352	338	55.9	30 21 31.7	780	+ 35.6	81 28 28.5	— 0.5
26	56 10	4.0	4.3	7.3	5.0	24	. .	922	. .	790	. .	55.9	56 14 11.1	764	+ 1 30.3	107 22 2.6	
27	29 32	12.3	10.5	10.0	13.5	23	720	698	. .	540	525	55.9	29 36 23.8	742	+ 34.2	80 43 19.2	+ 1.1
28	49 42	7.2	9.5	11.8	11.0	26	158	126	. .	. .	. .	55.9	49 45 47.4	. .	+ 1 10.9	100 53 19.5	
29	50 14	8.2	8.3	10.3	10.5	24	. .	. .	. .	606	525	55.9	50 18 10.7	732	+ 1 12.3	101 25 44.2	
30	10 26	6.1	5.3	6.8	5.9	21	. .	012	. .	930	. .	55.9	10 31 9.9	690	+ 11.0	61 37 42.1	— 0.3
31																	
32	6 40	2.5	5.7	6.7	7.5	28	330	308	. .	. .	. .	56.1	6 43 19.5	755	+ 7.1	57 49 47.8	+ 0.7
33	307 28	10 7.6	. .	5.7	6.3	24	810	820	900	860	780	53.1	307 32 7.3	908	— 1 21.2	358 37 7.3	— 1.1
34	19 46	7.2	. .	5.8	4.5	24	. .	. .	. .	060	080	53.1	19 50 18.9	912	+ 22.6	70 57 2.7	— 2.6
35	333 50	6.0	5.0	5.5	4.0	23	. .	670	. .	515	. .	53.1	333 54 28.5	. .	— 30.6	25 0 19.1	— 4.1
36	18 58	8.0	6.4	5.5	6.0	26	. .	340	. .	220	. .	53.1	19 1 45.5	. .	+ 21.6	70 8 28.3	— 1.6
37	54 18	7.5	6.4	6.6	5.8	24	. .	980	. .	945	. .	53.1	54 22 5.3	. .	+ 1 27.3	105 29 53.8	— 2.1
38	51 20	8.0	6.8	6.6	6.0	18	800	600	350	950	720	53.1	51 26 2.2	. .	+ 1 18.6	102 33 42.0	
39	1 0	6.0	4.2	3.9	3.5	26	. .	605	. .	495	. .	53.1	1 3 43.6	. .	+ 1.2	52 10 6.0	— 2.1
40	11 40	5.7	5.0	4.0	4.5	24	. .	230	. .	170	. .	53.1	11 44 19.0	. .	+ 13.0	62 50 53.2	— 2.8
41	31 58	6.5	5.4	3.6	4.5	22	. .	125	. .	155	. .	53.1	32 2 50.1	. .	+ 39.3	83 9 50.6	— 2.0
42	33 56	5.9	4.5	3.4	5.0	22	. .	840	. .	645	. .	53.1	34 0 41.2	935	+ 42.4	85 7 44.8	— 3.5
43	9 8	3.2	2.8	1.7	4.5	25	. .	. .	. .	600	420	53.1	9 11 59.8	860	+ 10.0	60 18 31.0	+ 5.0
44	48 58	1.0	1.0	1.2	3.8	22	860	025	. .	. .	. .	53.0	49 2 41.6	. .	+ 1 10.7	100 10 13.5	
45	49 30	1.0	1.6	1.0	3.0	21	. .	. .	. .	715	481	53.0	49 35 0.9	835	+ 1 12.0	100 42 34.1	
46	310 14	1.8	0.3	0.8	1.2	26	820	850	765	680	700	53.0	310 17 43.5	. .	— 1 11.6	1 22 53.1	+ 1.4
47	290 58	4.2	3.8	2.8	6.1	26	830	. .	750	. .	855	52.9	291 1 39.1	. .	— 2 42.6	342 5 17.7	— 2.1
48	31 56	29.5	28.2	29.0	2.6	28	. .	040	. .	885	. .	52.9	31 59 26.1	940	+ 39.3	83 6 26.6	— 1.5
49	350 16	4.3	5.3	5.5	9.2	22	. .	225	. .	192	. .	52.9	350 20 48.2	. .	— 10.7	41 26 58.7	— 2.8

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
23	30.346	66.0	52.1
33	30.084	56.5	14.0
43	30.158	60.0	18.2
45	30.150	61.0	20.4
48	30.224	65.0	12.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	—18 22.7	+ 15 59.7	. .	— 2 23.0
5	— 0.1	. . .	. .	— 0.1
18	—29 20.1	+ 16 29.0	. .	— 12 51.1
22	— 6.9	— 16 11.6	. .	— 16 18.5
23	— 6.8	+ 16 11.6	. .	+ 16 4.8
26	— 9.1	. . .	0.0	— 9.1
28	— 6.8	+ 16 12.3	. .	+ 16 5.5
29	— 6.9	— 16 12.3	. .	— 16 19.2
38	—46 18.2	— 16 13.5	. .	— 62 31.7
44	— 6.7	+ 16 10.3	. .	+ 16 3.6
45	— 6.7	— 16 10.3	. .	— 16 7.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 21	1	κ Cancri	E.	59.2	1.8	3.3	9.7	11.7	13.8	19.9	21.6	24.2	1 11.69	− 0.16	−28.56	−28.76	9 0 42.77	− 0.21
	2	α Leonis	E.	44.0	46.5	48.3	54.3	56.5	58.6	4.9	6.4	9.1	1 56.51	− 0.15	−28.78	−28.73	10 1 27.63	+ 0.01
	3	γ^1 Leonis	E.	4.9	7.5	9.2	15.6	17.8	20.0	26.5	28.1	30.8	13 17.82	− 0.12	−28.78	−28.72	10 12 48.98	+ 0.04
	4	ρ Leonis	E.	15.2	17.7	19.4	25.5	27.6	29.6	36.0	37.4	40.0	26 27.60	− 0.16	−28.79	−28.71	10 25 58.73	+ 0.01
	5	l Leonis	E.	42.6	45.0	46.6	52.9	55.0	57.0	3.3	5.0	7.5	42 54.99	− 0.16	−28.70	−28.69	10 42 26.14	+ 0.02
	6	μ Bootis	E.	. .	. .	. .	. .	. .	. .	13.3	15.4	18.7	20 3.10	− 0.04	−28.37	−28.56	15 19 34.50	− 0.20
	7	α Coronæ Borealis .	E.	25.9	28.6	30.4	37.1	39.6	42.0	48.7	50.4	53.3	29 39.56	− 0.09	−28.62	−28.56	15 29 10.91	+ 0.06
	8	α Serpentis . . .	E.	8.1	10.7	12.3	18.4	20.4	22.4	28.7	30.2	32.8	38 20.44	− 0.18	−28.58	−28.55	15 37 51.71	+ 0.05
	9	ε Serpentis . . .	E.	36.4	38.9	40.4	46.6	48.6	50.7	57.1	58.5	1.0	44 48.69	− 0.18	−28.58	−28.55	15 44 19.96	+ 0.03
	10	Moon II . . .	E.	. .	. .	. .	25.1	27.5	29.5	33.8	35.7	38.3	54 25.20	− 0.28	. .	−28.54	15 53 56.38	− 6.94
	11	δ Ophiuchi . . .	E.	48.2	50.8	52.3	58.4	0.5	2.5	8.5	10.3	12.8	8 0.48	− 0.22	−28.62	−28.54	16 7 31.72	+ 0.10
	12	τ Herculis . . .	E.	0.4	4.0	6.1	15.1	18.1	21.1	30.0	32.1	36.0	16 18.10	− 0.10	. .	−28.53	16 15 49.47	− 0.01
	13	ε Ursæ Minoris. .	E.	. .	. .	18.5	34.0	45.0	2.5	20.0	. .	. .	59 48.06	+ 0.97	. .	−28.51	16 59 20.52	− 0.59
23	14	α Cygni	E.	8.3	11.7	14.0	22.6	25.5	28.3	37.0	39.0	42.7	37 25.46	0.00	−27.18	. .	. . . .	. .
24	15	Sun I, N. . . .	E.	. .	. .	. .	. .	. .	. .	24.5	25.6	28.1	30 15.88	− 0.27	. .	−27.13	22 29 48.48	. .
	16	Sun II, S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	37.2	39.9	32 27.42	− 0.27	. .	−27.13	22 32 0.02	. .
	17	Polaris	E.	. .	. .	17.0	40.5	4.0	30.0	55.0	. .	. .	11 5.62	+ 7.56	. .	. .	. . . .	. .
	18	α Aquilæ	F.	39.3	41.9	43.5	49.7	51.7	53.7	0.0	1.6	4.1	44 51.72	− 0.33	−26.33	−26.34	19 44 25.05	+ 0.03
	19	ε Pegasi	F.	0.7	3.3	. .	. .	. .	. .	. .	22.9	25.5	38 13.11	− 0.32	−26.34	−26.27	21 37 46.52	+ 0.08
25	20	Sun I, S. . . .	F.	49.9	52.4	54.0	0.2	2.1	4.2	10.4	12.0	14.7	34 2.21	− 0.41	. .	−26.24	22 33 35.56	. .
	21	Sun II, N. . . .	F.	1.0	3.9	5.4	11.4	13.5	15.7	21.9	23.4	26.1	36 13.59	− 0.41	. .	−26.24	22 35 46.94	. .
	22	α Andromedæ . .	F.	. .	. .	. .	. .	. .	. .	14.6	16.0	19.0	2 5.13	− 0.23	−26.17	−26.18	0 1 38.72	+ 0.01
	23	Polaris	F.	. .	. .	15.0	41.0	6.0	31.0	56.0	. .	. .	11 6.12	+ 8.03	. .	−26.14	1 10 48.01	+ 1.86
	24	β Arietis	F.	40.0	42.6	44.2	50.7	52.9	55.0	1.5	3.3	6.0	47 52.91	− 0.27	−26.10	−26.11	1 47 26.53	0.00
	25	α Arietis	F.	3.0	5.7	7.3	14.0	16.2	18.4	24.9	26.7	29.4	0 16.18	− 0.26	−26.12	−26.11	1 59 49.81	+ 0.02
	26	Uranus, (C.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	27	α Canis Minoris .	F.	44.0	46.6	48.2	54.2	56.2	58.3	4.6	6.1	8.8	32 56.33	− 0.34	−25.82	−25.91	7 32 30.08	− 0.20
	28	φ Geminorum . .	F.	45.2	48.0	49.8	56.6	58.9	1.1	8.0	9.8	13.6	45 59.00	− 0.24	−25.93	−25.89	7 45 32.87	− 0.04
	29	λ Ursæ Minoris, S.P.	F.	. .	. .	53.0	5.0	16.0	30.0	. .	. .	. .	54 17.08	−11.01	. .	−25.89	19 53 40.18	+ 2.27
	30	Groom. 3241, S. P.	F.	. .	. .	10.0	3.4	57.0	49.9	43.6	. .	. .	30 56.76	− 0.91	. .	−25.86	20 30 29.76	+ 0.23
	31	ε Hydræ	F.	7.8	10.5	12.0	18.2	20.2	22.2	28.5	30.0	32.6	40 20.22	− 0.33	−25.77	−25.86	8 39 54.03	− 0.13
	32	ι Ursæ Majoris . .	F.	26.1	30.1	32.2	41.5	44.7	47.8	57.0	59.0	3.1	50 44.61	− 0.10	. .	−25.85	8 50 18.56	− 0.07
	33	12-y'r Cat. 1879, S.P.	F.	. .	. .	9.1	57.7	46.4	34.4	23.1	. .	. .	53 46.19	− 1.45	. .	−25.85	20 53 18.89	+ 0.36
	34	β Cephei, S. P. . .	F.	. .	. .	33.8	28.0	21.9	15.9	10.0	. .	. .	27 21.94	− 0.86	. .	−25.83	21 26 55.25	+ 0.08
	35	ε Leonis	F.	41.6	44.3	46.1	52.5	54.9	57.2	4.0	5.6	8.5	38 54.97	− 0.25	−25.84	−25.83	9 38 28.89	− 0.04
	36	μ Leonis	F.	35.1	38.0	39.7	46.6	48.8	51.1	57.9	59.6	2.5	45 48.81	− 0.24	−25.83	−25.82	9 45 22.75	0.00
	37	α Leonis	F.	41.2	43.8	45.4	51.7	53.7	55.8	2.2	3.8	6.4	1 53.78	− 0.31	−25.87	−25.81	10 1 27.66	+ 0.02
	38	γ^1 Leonis	F.	2.0	4.7	6.2	12.8	15.0	17.2	23.8	25.4	28.0	13 15.01	− 0.27	−25.81	−25.80	10 12 48.94	− 0.01
	39	9 Draconis . . .	F.	35.1	46.4	53.0	19.0	27.7	36.1	1.8	8.8	19.4	24 27.48	+ 0.53	. .	−25.81	10 24 2.21	− 0.02
	40	l Leonis	F.	39.8	42.4	44.0	50.1	52.2	54.3	0.6	2.2	4.6	42 52.24	− 0.32	−25.76	−25.78	10 42 26.14	− 0.01
	41	δ Crateris . . .	F.	5.2	7.8	9.3	15.5	17.6	19.8	26.0	27.8	30.2	13 17.69	− 0.44	−25.78	−25.77	11 12 51.48	− 0.02
	42	τ Leonis	F.	29.6	32.3	33.9	39.9	42.0	44.0	50.2	51.6	54.3	21 41.98	− 0.35	−25.74	−25.76	11 21 15.87	− 0.04
26	43	φ Geminorum . .	Ha.	44.3	47.0	48.9	55.7	58.0	0.3	7.1	8.7	11.8	45 57.98	− 0.19	−24.98	−25.00	7 45 32.79	− 0.10
	44	λ Ursæ Minoris, S.P.	Ha.	. .	. .	42.0	53.0	3.0	. .	. .	. .	. .	54 4.77	− 2.08	. .	. .	. . . .	. .
	45	Groom. 3241, S. P.	Ha.	35.0	26.5	21.3	1.4	55.0	48.6	28.3	23.0	15.5	30 54.96	− 0.25	. .	−24.99	20 30 29.72	− 0.10
	46	ε Hydræ	Ha.	6.9	9.6	11.1	17.0	19.2	21.4	27.5	29.1	31.6	40 19.27	− 0.22	−24.93	−24.98	8 39 54.16	− 0.09
	47	ι Ursæ Majoris . .	Ha.	25.2	29.1	31.2	40.6	43.8	47.0	56.3	58.4	2.4	50 43.78	− 0.15	. .	−24.98	8 50 18.65	− 0.07
	48	12-y'r Cat. 1879, S.P.	Ha.	54.0	40.1	30.8	54.9	43.6	31.5	55.9	47.7	31.9	53 43.38	− 0.36	. .	−24.98	20 53 18.04	− 0.55

10. R. A. observed over wires C_{3-5} and D.
13. Bisections at C_1, C_3, C_5.
15. N. P. D. diminished by one revolution.
33, 35. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan's Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	27 38	3.8	1.5	4.1	6.5	26	. .	226	. .	218	. .	52.9	27 41 48.6	. .	+ 33.1	78 48 42.9	+ 0.1
2	26 12	5.0	5.0	5.6	8.8	21	. .	000	. .	890	. .	52.8	26 17 7.0	955	+ 31.2	77 23 59.4	— 0.5
3	18 20	9 28.0	26.0	26.0	29.8	27	. .	965	. .	870	. .	52.8	18 23 29.2	. .	+ 21.0	69 30 11.4	— 0.5
4	28 50	9 25.0	25.2	25.7	29.5	23	. .	330	. .	195	. .	52.8	28 54 41.4	. .	+ 34.9	80 1 37.5	+ 0.5
5	27 34	10 5.2	3.7	5.2	8.7	20	. .	488	. .	590	. .	52.8	27 39 13.6	955	+ 33.1	78 46 7.9	— 0.9
6	1 0	4.4	3.2	3.6	7.4	26	. .	. .	. .	395	325	52.7	1 3 44.9	962	+ 1.2	52 10 7.3	— 0.9
7	11 40	2.5	0.3	0.0	6.0	24	. .	293	. .	192	. .	52.7	11 44 20.6	. .	+ 13.1	62 50 54.9	— 1.1
8	31 58	2.0	0.0	1.2	5.3	22	. .	290	. .	180	. .	52.7	32 2 51.2	. .	+ 39.6	83 9 52.0	— 0.7
9	33 56	1.6	0.6	1.6	4.0	22	. .	788	. .	700	. .	52.7	34 0 43.6	. .	+ 42.7	85 7 47.5	— 0.9
10																	
11	42 10	5.3	3.4	3.7	7.7	24	. .	885	. .	768	. .	52.7	42 14 8.6	. .	+ 57.4	93 21 27.2	0.0
12	352 12	6.8	7.4	6.3	10.8	23	. .	095	. .	940	. .	52.7	352 16 33.8	. .	— 8.6	43 22 46.4	— 0.9
13	316 36	7.2	7.2	7.7	10.5	24	. .	992	048	962	. .	52.6	316 44 2.8	960	— 59.6	7 45 24.4	— 1.6
14	354 0	2.5	2.2	3.0	4.4	22	350	305	. .	180	200	54.7	354 4 52.4	. .	— 6.2	45 11 7.4	— 1.1
15	47 54	2.5	2.0	4.5	5.7	30	. .	. .	150	. .	. .	54.7	47 56 50.5	645	+ 1 5.2	99 4 16.9	
16	48 26	7.3	5.5	7.8	7.9	28	. .	. .	. .	780	590	54.7	48 29 8.8	. .	+ 1 6.5	99 36 36.5	
17	310 14	10 1.7	0.1	3.0	3.8	.	250	315	260	250	236	54.7	310 17 36.4	626	— 1 9.1	1 22 48.5	— 3.9
18	30 18	5.7	2.9	5.7	5.9	27	. .	202	. .	112	. .	51.5	30 21 31.8	746	+ 35.3	81 28 28.3	— 1.3
19	29 32	9 29.6	0.4	2.0	3.4	24	. .	. .	. .	000	978	51.5	29 36 22.8	662	+ 33.6	80 43 17.6	— 1.1
20	48 2	2.7	3.2	5.5	5.2	22	092	050	. .	. .	. .	51.5	48 6 51.0	. .	+ 1 5.5	99 14 17.7	
21	47 30	3.2	3.0	6.8	7.2	23	. .	. .	. .	223	213	51.5	47 34 31.2	640	+ 1 4.3	98 41 56.7	
22	10 26	5.6	6.8	8.7	9.5	20	. .	. .	. .	450	435	51.5	10 31 10.9	626	+ 10.9	61 37 43.0	— 0.4
23	310 14	4.2	3.9	6.1	6.7	26	. .	656	640	618	. .	51.5	310 17 39.6	618	— 1 9.0	1 22 51.8	— 0.7
24	18 38	10 1.4	1.0	4.5	4.6	21	135	122	. .	002	990	51.5	18 43 7.2	. .	+ 19.9	69 49 48.3	+ 0.4
25	15 58	3.2	3.0	6.7	7.8	22	812	784	. .	642	636	51.5	16 2 39.7	618	+ 16.8	67 9 17.7	+ 0.5
26	16 8	10 3.5	5.0	6.5	9.0	26	. .	245	. .	050	. .	52.6	16 11 47.5	730	+ 17.4	67 18 26.1	
27	33 16	3.3	5.3	7.4	9.2	26	362	338	. .	200	198	52.6	33 19 45.2	. .	+ 39.5	84 26 45.9	— 1.2
28	11 44	4.0	5.4	6.8	8.5	27	465	432	. .	292	288	52.5	11 47 28.7	. .	+ 12.5	62 54 2.4	— 1.2
29	307 46	4.2	3.6	5.8	7.7	25	. .	950	992	042	. .	52.5	307 49 50.2	. .	— 1 17.2	358 54 54.2	— 0.2
30																	
31	31 56	3.5	3.7	6.9	8.4	27	490	465	. .	316	290	52.4	31 59 28.6	726	+ 37.5	83 6 27.3	— 0.9
32	350 16	10 4.8	6.2	9.0	10.6	22	208	176	. .	. .	. .	52.3	350 20 47.6	. .	— 10.2	41 26 58.6	— 2.2
33	298 56	0.2	0.5	1.8	4.1	29	144	180	. .	. .	. .	52.3	298 59 5.3	738	— 1 48.2	350 3 38.3	— 1.1
34	288 52	10 4.5	5.8	7.0	9.1	25	880	788	. .	765	745	52.2	288 55 51.6	. .	— 2 53.7	339 59 19.1	+ 1.8
35	14 26	4.5	6.1	7.5	9.4	20	. .	645	. .	555	. .	52.2	14 31 11.0	. .	+ 15.6	65 37 47.8	+ 0.5
36	12 12	3.6	5.1	7.1	8.6	23	. .	. .	. .	638	620	52.1	12 16 24.4	736	+ 13.1	63 22 58.7	— 1.5
37	26 12	5.7	7.5	9.4	11.6	20	. .	620	. .	560	. .	52.1	26 17 9.3	. .	+ 29.7	77 24 0.2	+ 0.3
38	18 20	2.1	1.8	4.5	6.2	27	. .	406	. .	362	. .	52.1	18 23 30.4	. .	+ 20.0	69 30 11.6	— 0.2
39	322 28	0.6	0.4	1.9	5.0	27	. .	462	. .	310	. .	52.0	322 31 33.2	740	— 46.1	13 37 8.3	— 0.8
40	27 34	5.2	6.2	8.5	10.9	20	265	234	. .	186	176	52.0	27 39 15.8	. .	+ 31.5	78 46 8.5	— 0.3
41	52 52	0.4	0.0	1.8	4.0	22	210	145	. .	012	005	51.9	52 56 52.9	. .	+ 1 19.6	104 4 33.7	— 1.3
42	35 14	1.1	0.8	3.1	5.4	22	. .	. .	. .	675	635	51.9	35 18 42.4	. .	+ 42.6	86 25 46.2	— 0.2
43	11 44	10 10.2	9.5	7.5	6.0	27	. .	160	. .	140	. .	52.6	11 47 29.9	665	+ 12.4	62 54 3.5	0.0
44	307 46	12.0	11.0	8.5	7.5	25	755	715	670	. .	. .	52.6	307 49 50.2	. .	— 1 16.2	358 54 55.2	+ 1.1
45	290 58	8.5	7.1	4.8	4.8	27	. .	135	. .	220	. .	52.6	291 1 30.3	. .	— 2 33.3	342 5 18.2	— 0.2
46	31 56	8.6	8.3	4.9	4.6	27	. .	310	. .	210	. .	52.6	31 59 29.8	680	+ 37.1	83 6 28.1	— 0.1
47	350 16	9.9	8.4	5.9	4.1	22	. .	235	. .	130	. .	52.6	350 20 47.3	. .	— 10.1	41 26 58.4	— 2.2
48	298 54	4.0	2.1	0.3	1.3	21	. .	185	. .	. .	. .	52.6	298 59 6.3	. .	— 1 46.9	350 3 40.6	+ 1.5

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	30.228	8.8	65.0
5	30.212	9.0	65.0
6	30.204	8.0	65.0
13	30.200	9.0	65.0
21	. .	41.0	
43	. .	33.0	

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
15	— 6.6	+ 16 9.8	. .	+ 16 3.2
16	— 6.6	— 16 9.8	. .	— 16 6.4
20	— 6.6	— 16 10.5	. .	— 16 17.1
21	— 6.6	+ 16 10.5	. .	+ 16 3.9
26	— 0.1	. . .	. .	— 0.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 26	1	1 Draconis	Ha.	. .	. .	21.8	36.4	50.6	5.0	19.5	. .	. .	18 50.71	+ 0.08	. .	−24.96	9 18 25.83	− 0.54
	2	α Hydræ	IIa.	25.7	28.3	29.7	36.0	38.0	40.0	46.1	47.8	50.3	21 37.99	− 0.26	−24.94	−24.96	9 21 12.77	− 0.05
	3	ε Leonis	Ha.	40.5	43.3	45.0	51.6	53.9	56.0	3.0	4.7	7.5	38 53.94	− 0.19	−24.87	−24.95	9 38 28.80	− 0.13
	4	μ Leonis	Ha.	34.2	37.0	38.8	45.6	47.9	50.2	56.9	58.6	1.5	45 47.86	− 0.19	−24.92	−24.94	9 45 22.73	− 0.03
	5	ρ Leonis	Ha.	11.4	14.2	15.7	21.8	24.0	26.0	32.2	33.7	36.5	26 23.94	− 0.22	−25.04	−24.92	10 25 58.80	+ 0.05
	6	226 Cephei, S. P.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	7	l Leonis	Ha.	38.8	41.3	42.9	49.1	51.2	53.4	59.5	1.0	3.9	42 51.24	− 0.22	−24.86	−24.91	10 42 26.11	− 0.04
	8	α Ursæ Majoris	Ha.	41.2	47.0	50.1	3.4	7.9	12.3	25.5	28.6	34.3	56 7.81	− 0.11	. .	−24.90	10 55 42.80	+ 0.01
	9	δ Leonis	Ha.	24.2	26.9	28.7	35.2	37.3	39.5	46.2	47.9	50.5	7 37.38	− 0.20	−24.87	−24.90	11 7 12.28	− 0.09
	10	δ Crateris	Ha.	4.2	6.8	8.4	14.5	16.7	18.8	25.1	26.6	29.3	13 16.71	− 0.27	−24.96	−24.90	11 12 51.54	+ 0.03
	11	τ Leonis	Ha.	28.7	31.4	33.0	39.0	41.1	43.2	49.3	50.8	53.4	21 41.10	− 0.23	−24.97	−24.89	11 21 15.98	+ 0.06
	12	υ Leonis	Ha	31.2	33.9	35.5	41.5	43.5	45.6	51.7	53.3	55.7	30 43.54	− 0.24	−24.92	−24.88	11 30 18.42	0.00
Mar. 1	13	Groom. 3241, S. P.	Ha.	. .	. .	5.5	58.7	52.0	46.0	39.2	. .	. .	30 52.30	+ 0.02	. .	−22.48	20 30 29.84	− 0.09
	14	ε Hydræ	Ha.	4.2	6.8	8.6	14.7	16.7	18.7	24.9	26.4	29.0	40 16.67	− 0.14	−22.43	−22.47	8 39 54.06	− 0.08
	15	ι Ursæ Majoris	Ha.	23.1	26.8	. .	. .	. .	. .	. .	. .	. .	50 41.50	− 0.19	. .	−22.47	8 50 18.84	+ 0.14
	16	1 Draconis	Ha.	. .	. .	20.0	35.3	49.2	3.8	18.3	. .	. .	18 49.37	− 0.69	. .	−22.46	9 18 26.22	− 0.04
	17	β Cephei, S. P.	Ha.	52.9	45.8	41.2	23.4	17.6	11.6	53.6	49.2	42.0	27 17.48	+ 0.20	. .	−22.45	21 26 55.53	− 0.03
	18	ε Leonis	Ha.	38.0	40.8	42.6	49.3	51.4	53.6	0.4	2.1	5.0	38 51.47	− 0.15	−22.44	−22.44	9 38 28.88	− 0.05
	19	μ Leonis	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	20	ι Cephei, S. P.	Ha.	. .	. .	33.7	28.6	23.6	18.6	13.8	. .	. .	45 23.68	+ 0.15	. .	−22.39	22 45 1.44	+ 0.86
	21	α Ursæ Majoris	Ha.	39.0	44.6	47.8	1.1	5.5	9.9	23.0	26.4	31.8	56 5.46	− 0.25	. .	−22.38	10 55 42.83	0.00
	22	δ Leonis	Ha.	21.7	24.3	26.1	32.7	34.9	37.1	43.7	45.2	48.0	7 34.86	− 0.14	−22.38	−22.38	11 7 12.34	− 0.06
	23	δ Crateris	Ha.	1.6	4.1	5.6	12.0	14.0	16.2	22.6	24.1	26.6	13 14.09	− 0.14	−22.44	−22.37	11 12 51.58	+ 0.04
	24	τ Leonis	Ha.	26.3	28.8	30.3	36.3	38.4	40.4	46.5	48.0	50.7	21 38.41	− 0.14	−22.34	−22.37	11 21 15.90	− 0.05
	25	υ Leonis	Ha.	28.7	31.2	32.7	38.9	41.0	43.0	49.0	50.6	53.0	30 40.90	− 0.14	−22.35	−22.36	11 30 18.40	− 0.05
	26	β Leonis	Ha.	36.3	38.9	40.4	46.8	49.0	51.0	57.3	59.0	1.6	42 48.92	− 0.14	−22.36	−22.35	11 42 26.43	− 0.01
	27	ο Virginis	Ha.	46.0	48.6	50.0	56.3	58.5	0.5	6.7	8.3	10.9	58 58.42	− 0.14	−22.31	−22.33	11 58 35.95	− 0.04
	28	4 Draconis	Ha.	. .	. .	11.8	22.0	31.7	42.3	52.1	. .	. .	6 32.02	− 0.49	. .	−22.33	12 6 9.20	+ 0.08
	29	η Virginis	Ha.	26.5	28.8	30.4	36.5	38.6	40.7	46.6	48.3	50.8	13 38.58	− 0.14	−22.35	−22.32	12 13 16.12	+ 0.01
	30	Polaris, S. P.	Ha.	. .	. .	. .	. .	. .	. .	23.5	20.0	32.5	11 1.33	+ 3.54	. .	. .	. . . . .	. .
2	31	δ Geminorum	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	32	Uranus, (C.)	E.	57.0	59.7	1.4	8.0	10.1	12.2	19.0	20.7	23.3	19 10.16	− 0.23	. .	−21.45	7 18 48.48	. .
	33	α² Geminorum	E.	25.6	28.8	30.6	37.8	40.2	42.6	49.6	51.6	54.6	26 40.16	− 0.22	−21.41	−21.44	7 26 18.50	+ 0.21
	34	α Canis Minoris	E.	39.5	42.1	43.6	49.6	51.7	54.0	0.0	1.4	4.1	32 51.78	− 0.25	−21.41	−21.44	7 32 30.09	− 0.17
	35	β Geminorum	E.	29.8	32.6	34.4	41.3	43.5	45.9	52.9	54.6	57.5	37 43.61	− 0.23	−21.45	−21.44	7 37 21.94	− 0.02
	36	φ Geminorum	E.	40.8	43.5	45.2	52.1	54.4	56.7	3.5	5.3	8.1	45 54.40	− 0.23	−21.40	−21.43	7 45 32.74	− 0.11
	37	λ Ursæ Minoris, S.P.	E.	. .	. .	34.5	51.0	3.5	16.0	. .	. .	. .	54 2.08	+ 0.03	. .	. .	. . . . .	. .
	38	3 Ursæ Majoris	E.	40.1	46.8	51.0	8.0	13.7	19.1	36.4	40.5	47.6	0 13.69	− 0.21	. .	−21.43	7 59 52.05	− 0.16
	39	Groom. 3241, S. P.	E.	. .	. .	4.6	58.3	51.6	45.0	38.2	. .	. .	30 51.56	− 0.14	. .	−21.42	20 30 30.00	+ 0.03
	40	ε Hydræ	E.	3.5	6.0	7.6	13.6	15.6	17.8	23.9	25.4	28.0	40 15.71	− 0.25	−21.37	−21.41	8 39 54.05	− 0.08
	41	ι Ursæ Majoris	E.	22.0	25.8	27.9	37.1	40.3	43.4	52.6	54.9	58.8	50 40.31	− 0.21	. .	−21.40	8 50 18.70	+ 0.01
	42	12-y'r Cat. 1879, S.P.	E.	. .	. .	4.0	51.8	40.2	28.5	16.2	. .	. .	53 40.19	− 0.15	. .	−21.40	20 53 18.64	− 0.16
	43	κ Cancri	E.	52.7	54.6	56.3	2.5	4.6	6.6	12.9	14.4	17.0	1 4.56	− 0.24	−21.39	−21.40	9 0 42.92	− 0.02
	44	ε Leonis	E.	37.2	40.0	41.6	48.3	50.5	52.7	59.3	1.1	4.0	38 50.52	− 0.23	−21.41	−21.39	9 38 28.90	− 0.03
	45	11 Cephei, S. P.	E.	55.5	47.6	43.1	. .	. .	. .	. .	. .	. .	40 18.40	− 0.14	. .	−21.39	21 39 56.87	− 0.45
	46	μ Leonis	E.	30.8	33.7	35.3	42.1	44.4	46.7	53.4	55.2	58.0	45 44.40	− 0.23	−21.42	−21.38	9 45 22.79	+ 0.03
	47	79 Draconis, S. P.	E.	. .	. .	46.5	39.3	32.3	25.3	18.8	. .	. .	51 32.47	− 0.14	. .	−21.37	21 51 10.96	− 0.35
	48	α Leonis	E.	36.8	39.2	40.9	47.2	49.2	51.4	57.6	59.2	1.8	1 49.26	− 0.24	−21.41	−21.37	10 1 27.65	0.00
	49	32 Ursæ Majoris	E.	27.8	34.0	37.4	52.6	57.4	2.3	17.5	21.0	27.1	8 57.46	− 0.20	. .	−21.27	10 8 35.82	+ 0.07

30. R. A. and bisections observed over set D.
39, 47. Bisections at set C.
45, 49. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° '	r. ''	''	''	''							''	° ' ''		' ''	° ' ''	''
1	316 56	9.0	7.5	5.5	4.5	22	. .	. .	653	. .	. .	52.6	317 0 40.2	. .	− 55.3	8 6 6.1	+ 0.5
2	46 54	10.4	9.2	7.0	7.3	23	. .	200	. .	100	. .	52.6	46 58 30.7	680	+ 1 3.6	98 5 55.5	+ 0.5
3	14 26	9.5	9.0	6.4	5.0	20	. .	615	. .	555	. .	52.6	14 31 11.0	. .	+ 15.4	65 37 47.6	+ 0.4
4	12 12	3.2	3.9	7.2	7.5	23	. .	735	. .	645	. .	52.6	12 16 25.7	678	+ 13.0	63 22 59.9	− 0.3
5	28 50	6.0	3.0	0.8	1.0	22	. .	805	. .	685	. .	52.6	28 54 42.8	. .	+ 32.8	80 1 36.8	− 0.3
6	294 24	6.0	3.6	2.5	3.5	20	780	830	. .	. .	. .	52.6	294 29 7.9	. .	− 2 9.7	345 33 19.4	− 1.2
7	27 34	9.0	7.4	4.1	3.4	20	. .	420	. .	340	. .	52.6	27 39 15.6	684	+ 31.1	78 46 7.9	− 0.9
8	336 22	8.9	7.1	5.0	3.9	21	. .	465	. .	380	. .	52.6	336 27 0.0	. .	− 25.9	27 32 55.3	− 1.3
9	17 36	8.5	7.4	4.5	3.5	28	. .	210	. .	085	. .	52.6	17 39 16.9	. .	+ 18.9	68 45 57.0	− 0.7
10	52 52	9.2	8.0	5.1	5.1	21	. .	. .	. .	610	565	52.6	52 56 55.0	. .	+ 1 18.6	104 4 34.8	− 0.3
11	35 14	6.9	5.5	3.2	3.5	22	. .	625	. .	595	. .	52.6	35 18 42.7	. .	+ 42.1	86 25 46.0	− 0.4
12	38 54	7.2	7.0	4.9	4.2	20	. .	355	. .	220	. .	52.6	38 59 17.1	685	+ 48.1	90 6 26.4	− 0.6
13	290 58	5.3	3.2	1.5	1.6	27	. .	. .	. .	380	355	51.5	291 1 28.0	702	− 2 34.1	342 5 15.1	− 2.4
14	31 56	7.0	5.7	3.4	2.5	27	. .	460	. .	390	. .	51.5	31 59 28.1	. .	+ 37.3	83 6 26.6	− 1.3
15	350 16	6.6	5.1	3.6	1.7	22	440	420	. .	. .	. .	51.5	350 20 46.6	705	− 10.2	41 26 57.6	− 2.4
16	316 56	6.2	3.9	2.5	1.5	22	. .	. .	988	. .	. .	51.5	317 0 37.1	. .	− 55.6	8 6 2.7	− 2.0
17	288 52	6.1	4.7	8.4	2.5	25	. .	955	. .	950	. .	51.5	288 55 50.2	705	− 2 52.5	339 59 18.9	+ 2.9
18	14 26	7.1	6.1	5.4	3.8	20	. .	770	. .	620	. .	51.5	14 31 10.1	. .	+ 15.5	65 37 46.8	− 0.2
19	12 12	5.6	4.6	3.5	2.4	23	. .	788	. .	. .	. .	51.5	12 16 25.4	710	+ 13.0	63 22 59.6	− 0.3
20	284 24	7.0	5.5	3.0	3.1	23	. .	. .	812	. .	. .	51.5	284 28 23.3	705	− 3 47.6	335 30 56.9	0.0
21	336 22	7.1	5.2	3.5	2.0	21	. .	570	. .	410	. .	51.5	336 26 59.6	. .	− 26.0	27 32 54.8	− 1.1
22	17 36	10.0	8.5	6.1	5.6	28	. .	000	. .	890	. .	51.5	17 39 17.4	. .	+ 19.0	68 45 57.6	0.0
23	52 52	11.4	9.5	7.1	7.0	21	. .	432	. .	368	. .	51.5	52 56 56.0	. .	+ 1 18.9	104 4 36.1	+ 0.5
24	35 14	9.5	7.8	5.8	5.5	22	. .	405	. .	320	. .	51.5	35 18 43.0	702	+ 42.2	86 25 46.4	− 0.2
25	38 54	8.1	6.3	3.4	4.5	20	. .	160	. .	130	. .	51.5	38 59 18.4	. .	+ 48.5	90 6 28.1	+ 0.8
26	23 32	10.9	9.0	6.7	5.3	27	. .	525	. .	450	. .	51.5	23 35 23.9	. .	+ 26.1	74 42 11.2	+ 0.9
27	29 22	8.0	6.0	3.9	3.4	25	. .	835	. .	750	. .	51.5	29 25 52.5	. .	+ 33.7	80 32 47.4	+ 0.4
28	320 30	7.2	5.9	3.9	3.8	24	. .	. .	393	. .	. .	51.5	320 34 13.9	. .	− 49.3	11 39 45.8	− 2.0
29	38 46	11.0	9.5	7.0	7.0	26	. .	825	. .	733	. .	51.5	38 49 34.0	710	+ 48.1	89 56 43.3	+ 0.1
30	307 28	7.0	6.8	3.6	4.0	24	. .	. .	985	920	825	51.5	307 32 3.2	713	− 1 17.7	358 37 6.7	+ 0.2
31	16 36	10 8.0	9.5	11.8	13.4	24	. .	000	. .	860	. .	51.8	16 40 15.9	. .	+ 18.0	67 46 55.1	+ 0.7
32	16 6	9.3	12.3	15.0	15.6	21	125	120	. .	965	020	51.8	16 10 11.7	. .	+ 17.5	67 16 50.4	
33	6 40	0.0	29.7	1.0	4.0	28	. .	465	. .	350	. .	51.8	6 43 17.0	. .	+ 7.1	57 49 45.3	− 0.8
34	33 16	3.7	6.0	6.7	8.0	26	. .	240	. .	180	. .	51.8	33 19 45.5	. .	+ 39.6	84 26 46.3	− 0.9
35	10 30	2.6	3.2	4.2	7.2	28	. .	502	. .	426	. .	51.8	10 33 13.0	. .	+ 11.2	61 39 45.4	− 0.5
36	11 44	3.5	4.0	4.8	6.5	27	. .	440	. .	378	. .	51.8	11 47 28.7	748	+ 12.6	62 54 2.5	− 0.7
37	307 46	3.5	4.0	4.8	6.5	26	038	065	058	035	. .	51.8	307 49 49.2	. .	− 1 17.5	358 54 52.9	0.0
38	329 58	4.0	7.2	6.7	9.2	21	. .	572	. .	480	. .	51.8	330 2 57.2	. .	− 34.7	21 8 43.7	+ 0.5
39	290 58	2.8	2.8	4.7	6.2	27	350	270	250	320	328	51.8	291 1 30.7	. .	− 2 35.9	342 5 16.0	− 1.3
40	31 56	4.5	3.8	6.1	8.0	27	. .	258	. .	187	. .	51.8	31 59 30.6	. .	+ 37.7	83 6 29.5	+ 1.2
41	350 16	4.5	6.5	7.0	9.2	22	. .	140	. .	040	. .	51.8	350 20 48.1	. .	− 10.3	41 26 59.0	− 0.8
42	298 54	2.4	2.2	2.7	6.0	21	135	090	170	198	165	51.8	298 59 5.5	. .	− 1 48.7	350 3 38.0	+ 0.1
43	27 38	4.5	6.0	7.2	8.5	25	. .	965	. .	830	. .	51.8	27 41 49.9	. .	+ 31.7	78 48 42.8	− 0.1
44	14 28	3.2	3.7	5.1	6.9	28	. .	635	. .	515	. .	51.8	14 31 10.8	. .	+ 15.7	65 37 47.7	+ 0.8
45	289 36	5.2	6.0	7.0	9.8	28	750	772	. .	. .	. .	51.8	289 39 5.8	. .	− 2 48.1	340 42 38.9	− 0.2
46	12 12	3.0	4.3	6.2	8.2	23	. .	695	. .	610	. .	51.8	12 16 25.4	. .	+ 13.2	63 22 59.8	0.0
47	291 56	4.1	3.8	5.0	7.5	20	480	. .	385	. .	402	51.8	292 1 14.9	. .	− 2 28.7	343 5 7.4	− 0.5
48	26 14	3.5	5.0	5.7	7.7	28	. .	712	. .	535	. .	51.8	26 17 9.3	. .	+ 29.9	77 24 0.4	+ 0.5
49	333 4	4.3	3.9	5.5	8.3	22	. .	158	. .	150	. .	51.8	333 8 48.3	. .	− 30.7	24 14 38.8	− 2.3

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
13	. .	. .	31.5
29	. .	. .	32.1
36	30.074	67.5	30.0

For a summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	' ''	' ''	' ''	' ''
32	− 0.1	. .	. .	− 0.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 2	1	γ^1 Leonis	E.	57.6	0.2	1.8	8.5	10.6	12.7	19.2	21.0	23.7	13 10.59	− 0.24	−21.40	−21.36	10 12 48.99	+ 0.02
	2	ρ Leonis	E.	8.0	10.7	12.1	18.2	20.2	22.3	28.5	30.0	32.6	26 20.29	− 0.24	−21.36	−21.36	10 25 58.69	− 0.07
	3	Mercury, (C.) . .	F.	50.6	53.2	55.0	1.0	3.4	5.7	12.1	13.6	16.3	15 3.43	− 0.17	. .	−21.11	21 14 42.15	− 0.01
3	4	Sun I, S. . . .	F.	15.6	18.1	19.6	25.7	27.8	29.8	36.2	37.6	40.1	56 27.83	− 0.17	. .	−21.05	22 56 6.61	
	5	Sun II, N. . . .	F.	26.0	28.5	30.0	36.3	38.3	40.3	46.6	48.0	50.6	58 38.29	− 0.17	. .	−21.05	22 58 17.07	
	6	α Andromedæ . .	F.	46.1	48.9	50.6	57.5	59.7	2.2	9.2	10.9	14.0	1 59.90	− 0.21	−20.96	−20.99	0 1 38.70	+ 0.02
	7	Polaris	F.	. .	. .	17.0	40.0	5.0	. .	54.0	. .	. .	11 5.40	− 4.97	. .	−20.77	1 10 43.46	+ 1.33
	8	α Arietis	F.	57.5	0.5	2.0	8.5	10.9	13.0	19.6	21.3	24.1	0 10.93	− 0.19	−21.04	−20.94	1 59 49.80	+ 0.09
	9	Uranus I, C. . .	F.	51.1	54.0	55.6	. .	. .	. .	13.2	14.8	17.7	19 4.40	− 0.19	. .	−20.75	7 18 43.46	
	10	Uranus II . . .	F.	. .	. .	0.2	2.4	4.7	7.0	9.1	. .	. .	19 4.69	− 0.19	. .	−20.75	7 18 43.75	
	11	φ Geminorum . .	F.	40.1	42.9	44.6	51.4	53.7	56.0	2.7	4.7	7.4	45 53.72	− 0.21	−20.75	−20.74	7 45 32.77	− 0.07
	12	λ Ursæ Minoris,S.P.	F.	. .	. .	28.0	42.0	53.0	. .	. .	. .	. .	53 53.10	+ 6.17	. .	−20.73	19 53 38.54	− 3.42
	13	15 Argus	F.	8.9	11.5	13.2	20.1	22.2	24.3	31.0	32.7	35.5	2 22.16	− 0.17	−20.72	−20.73	8 2 1.24	− 0.07
	14	ε Hydræ	F.	2.5	5.0	6.7	12.9	14.9	16.9	23.2	24.6	27.2	40 14.88	− 0.18	−20.61	−20.70	8 39 54.0	− 0.07
	15	ι Ursæ Majoris . .	F.	21.0	25.0	27.2	36.6	39.7	42.7	52.0	54.3	58.3	50 39.64	− 0.26	. .	−20.70	8 50 18.68	0.00
	16	σ^2 Ursæ Majoris . .	F.	45.6	52.8	56.4	12.7	18.1	23.5	39.6	43.6	50.2	59 18.06	− 0.43	. .	−20.69	8 58 56.94	− 0.11
	17	α Leonis	F.	35.9	38.6	40.2	46.5	48.5	50.4	56.8	58.3	1.0	1 48.47	− 0.19	−20.68	−20.66	10 1 27.63	− 0.02
	18	γ^1 Leonis	F.	56.7	59.4	1.2	7.6	9.8	12.0	18.5	20.1	22.8	13 9.79	− 0.20	−20.61	−20.65	10 12 48.94	− 0.03
	19	ρ Leonis	F.	7.1	9.7	11.2	17.5	19.5	21.5	27.7	29.1	32.0	26 19.48	− 0.19	−20.59	−20.64	10 25 58.65	− 0.12
	20	226 Cephei, S. P. . .	F.	3.7	53.1	47.6	23.3	15.0	6.3	42.1	36.1	25.8	30 14.78	+ 0.38	. .	−20.64	22 29 54.52	− 0.08
	21	*l* Leonis	F.	34.7	37.2	38.9	45.0	47.1	49.0	55.4	57.0	59.6	42 47.10	− 0.19	−20.72	−20.63	10 42 26.28	+ 0.10
	22	ι Cephei, S. P. . .	F.	. .	. .	30.5	26.0	21.0	16.1	11.2	. .	. .	45 20.98	+ 0.18	. .	−20.63	22 45 0.53	− 0.06
5	23	Uranus I, N. . .	E.	39.7	42.5	44.0	. .	. .	. .	1.8	3.4	6.1	18 52.92	− 0.02	. .	−19.11	7 18 33.79	. .
	24	Uranus II, S. . .	E.	. .	. .	48.9	51.0	53.3	55.5	57.8	. .	. .	18 53.31	− 0.02	. .	−19.11	7 18 34.18	. .
	25	α Canis Minoris. .	E.	36.9	39.5	41.0	47.2	49.2	51.3	57.5	59.0	1.6	32 49.24	− 0.03	−19.13	−19.10	7 32 30.11	− 0.11
	26	β Geminorum . .	E.	27.3	30.0	31.8	38.9	41.2	43.4	50.3	52.1	55.0	37 41.10	− 0.04	−19.17	−19.10	7 37 21.96	+ 0.04
	27	φ Geminorum . .	E.	38.2	40.9	42.7	49.4	51.7	54.0	1.0	2.7	5.4	45 51.78	− 0.02	−19.03	−19.09	7 45 32.67	− 0.14
	28	*f* Draconis, S. P. .	E.	. .	. .	4.8	58.7	52.7	47.0	41.0	. .	. .	48 52.86	+ 0.20	. .	−19.09	19 48 33.97	+ 0.21
	29	λ Ursæ Minoris,S.P.	E.	. .	. .	34.5	46.5	1.5	14.5	. .	. .	. .	54 0.08	+ 2.47	. .	. .	. . . .	. .
	30	3 Ursæ Majoris . .	E.	. .	. .	59.8	5.7	11.0	17.0	22.4	. .	. .	0 11.20	− 0.08	. .	−19.08	7 59 52.04	− 0.07
	31	15 Argus	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	32	Groom. 3241, S. P.	E.	29.0	21.0	15.7	56.2	49.3	42.8	22.9	17.9	9.6	30 49.38	+ 0.21	. .	−19.07	20 30 30.52	+ 0.41
	33	ε Hydræ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	34	ι Ursæ Majoris . .	E.	19.2	23.1	25.5	34.4	37.6	40.7	49.7	52.3	56.0	50 37.61	− 0.03	. .	−19.05	8 50 18.53	− 0.13
	35	12-y'r Cat.1879,S.P.	E.	. .	. .	2.5	50.5	38.1	26.6	15.0	. .	. .	53 38.58	+ 0.32	. .	−19.05	20 53 19.85	+ 0.86
	36	κ Cancri	E.	49.7	52.1	53.7	0.0	2.0	4.0	10.3	11.9	14.4	1 2.01	− 0.03	−19.06	−10.05	9 0 42.93	0.00
	37	β Cephei, S. P. . .	E.	50.1	42.6	39.1	20.6	14.8	9.4	51.3	46.4	38.7	27 14.78	+ 0.20	. .	−19.03	21 26 55.95	+ 0.58
	38	ε Leonis	E.	34.6	37.4	39.0	45.6	47.8	50.1	56.9	58.6	1.3	38 47.92	− 0.02	−19.03	−19.03	9 38 28.87	− 0.05
	39	μ Leonis	E.	28.3	30.9	32.8	39.5	41.6	44.0	50.9	52.7	55.5	45 41.80	− 0.03	−19.03	−19.02	9 45 22.75	0.00
	40	79 Draconis, S. P. .	E.	. .	. .	45.0	37.9	30.7	23.6	16.6	. .	. .	51 30.78	+ 0.22	. .	−19.02	21 51 11.98	+ 0.61
	41	α Leonis	E.	34.2	36.8	38.3	44.6	46.6	48.7	55.0	56.7	59.1	1 46.67	− 0.15	−18.18	−19.01	10 1 27.63	− 0.14
	42	32 Ursæ Majoris . .	E.	25.3	31.5	35.2	50.0	54.5	59.8	14.7	18.4	24.6	8 54.89	− 0.37	. .	−19.01	10 8 35.81	− 0.30
	43	γ^1 Leonis	E.	55.0	57.7	59.4	5.8	8.0	10.2	16.8	18.3	21.0	13 8.02	− 0.02	−19.04	−19.01	10 12 48.99	+ 0.01
	44	9 Draconis . . .	E.	29.0	40.0	46.7	12.4	21.0	29.8	55.9	2.1	13.0	24 21.10	− 0.15	. .	−19.00	10 24 1.95	− 0.29
7	45	Sun I, N. . . .	Ha.	3.0	6.2	7.3	13.4	15.6	17.6	23.7	25.3	28.0	11 15.57	− 0.14	. .	−17.74	23 10 57.69	+64.94
	46	Snn S.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	47	Polaris	Ha.	. .	. .	10.0	35.0	58.0	21.0	49.0	. .	. .	10 58.92	− 1.33	. .	. .	. . . .	. .
	48	α Arietis	Ha.	54.2	56.9	58.7	5.2	7.4	9.7	16.3	18.0	20.7	0 7.46	− 0.13	. .	. .	. . . .	. .
	49	Moon I. . . .	Ha.	55.2	57.8	59.4	5.9	8.0	10.1	16.4	18.1	20.7	5 7.96	− 0.13	. .	−17.59	3 4 50.24	+62.68

20, 22, 28, 30, 32, 35, 37, 40. Bisections at sets B and D.
41. Telescope micrometer changed five revolutions in reductions.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	18 20	1.8	1.3	3.5	5.2	27	. .	532	. .	355	. .	51.8	18 23 29.9	. .	+ 20.2	69 30 11.3	− 0.2
2	28 50	3.5	3.5	5.6	7.3	22	. .	530	. .	480	. .	51.8	28 54 43.3	774	+ 33.5	80 1 38.0	+ 0.9
3	55 34	2.2	2.7	5.1	5.9	27	. .	768	. .	652	. .	50.6	55 37 23.4	768	+ 1 28.3	106 45 12.9	
4	45 46	5.8	5.0	3.0	2.7	22	912	896	. .	. .	. .	50.6	45 50 37.4	742	+ 1 1.9	96 58 0.5	
5	45 14	2.1	0.0	29.0	1.5	24	. .	. .	. .	050	052	50.6	45 18 22.1	. .	+ 1 0.8	96 25 44.1	
6	10 28	9 29.1	0.3	1.2	4.1	28	. .	680	. .	588	. .	50.6	10 31 12.3	725	+ 11.1	61 37 44.6	+ 0.3
7	310 14	1.0	0.5	1.5	4.1	26	558	520	486	550	545	50.6	310 17 43.9	708	− 1 10.4	1 22 54.7	+ 0.7
8	15 58	3.7	5.4	7.0	8.4	22	615	605	. .	508	470	50.6	16 2 40.5	700	+ 17.2	67 9 18.9	+ 0.9
9	16 6	9 27.7	29.6	0.9	3.3	22	478	434	. .	314	280	50.3	16 10 48.5	810	+ 17.7	67 17 27.4	
10	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	50.3					
11	11 44	10 0.7	0.9	2.6	3.7	27	626	570	. .	. .	. .	50.3	11 47 28.2	. .	+ 12.7	62 54 2.1	− 1.1
12																	
13	62 44	3.0	3.7	4.3	6.0	26	. .	210	. .	168	. .	50.3	62 47 46.0	. .	+ 1 58.4	113 56 5.6	+ 0.4
14	31 56	1.1	1.9	3.5	5.9	27	. .	470	. .	320	. .	50.3	31 59 28.90	808	+ 38.2	83 6 28.3	0.0
15	350 16	9 28.3	0.8	2.5	5.3	22	. .	330	. .	180	. .	50.3	350 20 49.2	. .	− 10.4	41 27 0.0	+ 0.4
16	331 10	9 28.0	0.0	1.1	3.2	23	. .	. .	. .	356	266	50.3	331 14 34.0	. .	− 33.5	22 20 21.7	− 1.6
17	26 12	3.6	5.2	6.9	10.2	20	735	700	. .	639	600	50.3	26 17 8.4	808	+ 30.1	77 24 59.7	− 0.2
18	18 20	1.6	3.0	5.5	7.0	27	. .	332	. .	158	. .	50.3	18 23 30.1	. .	+ 20.3	69 30 11.6	+ 0.1
19	28 50	1.6	2.4	4.0	7.0	22	. .	635	. .	505	. .	50.3	28 54 42.0	. .	+ 33.8	80 1 37.0	− 0.1
20	294 24	9 26.5	26.5	28.3	0.3	20	976	936	. .	. .	. .	50.3	294 29 12.6	. .	− 2 13.5	345 33 20.3	+ 1.3
21	27 34	4.5	5.6	8.3	10.7	20	. .	180	. .	095	. .	50.3	27 39 15.6	. .	+ 32.0	78 46 8.8	0.0
22	284 24	1.2	2.5	4.3	6.7	23	660	592	. .	. .	. .	50.3	284 28 26.2	810	− 3 53.1	335 30 54.3	− 2.0
23	16 6	4.0	4.5	6.6	8.5	23	378	265	. .	. .	. .	52.9	16 10 32.3	. .	+ 17.5	67 17 11.0	
24	16 6	4.0	4.5	6.6	8.5	22	. .	. .	. .	968	950	52.9	16 10 35.6	. .	+ 17.5	67 17 14.3	
25	33 16	29.5	0.5	2.5	3.7	26	. .	610	. .	445	. .	52.9	33 19 46.3	750	+ 39.7	84 26 47.2	+ 0.1
26	10 30	2.0	2.7	3.4	5.0	28	. .	563	. .	435	. .	52.9	10 33 14.6	. .	+ 11.2	61 39 47.0	+ 1.3
27	11 44	2.0	2.7	4.5	6.8	27	. .	530	. .	415	. .	52.9	11 47 29.6	. .	+ 12.6	62 54 3.4	+ 0.4
28	288 48	2.5	3.7	4.2	6.4	23	. .	190	162	115	. .	52.9	288 52 35.1	. .	− 2 54.9	339 56 1.4	+ 3.8
29	307 46	1.0	0.5	2.2	4.6	26	195	235	205	220	. .	52.9	307 49 50.1	. .	− 1 17.6	358 54 53.7	+ 1.5
30	329 58	2.5	3.3	3.7	6.8	21	. .	740	725	730	. .	52.9	330 2 57.2	. .	− 34.8	21 8 43.6	+ 1.1
31	62 44	0.4	0.0	0.0	2.8	26	. .	. .	. .	400	280	52.9	62 47 48.6	. .	+ 1 57.1	113 56 6.9	+ 1.4
32	290 58	1.9	1.9	2.7	5.2	27	. .	270	280	225	. .	52.9	291 1 33.6	. .	− 2 36.5	342 5 18.3	+ 1.8
33	31 56	1.9	1.9	3.5	5.7	27	455	460	. .	312	320	52.9	31 59 31.5	. .	+ 37.9	83 6 30.6	+ 2.2
34	350 16	5.8	7.5	8.1	12.3	22	. .	150	. .	010	. .	52.9	350 20 47.8	. .	− 10.3	41 26 58.7	− 0.5
35	298 54	2.0	1.5	3.5	5.0	21	. .	150	115	090	. .	52.9	298 59 7.2	. .	− 1 49.1	350 3 39.3	+ 2.3
36	27 38	2.7	3.4	4.7	7.2	26	182	110	. .	982	915	52.9	27 41 50.8	. .	+ 31.9	78 48 43.9	+ 1.0
37	288 52	2.5	2.4	4.2	6.2	25	. .	862	882	820	. .	52.9	288 55 54.2	. .	− 2 55.8	339 59 19.6	+ 4.7
38	14 28	3.0	2.5	4.8	6.8	28	. .	745	. .	640	. .	52.9	14 31 10.6	. .	+ 15.8	65 37 47.6	+ 0.9
39	12 12	29.7	29.0	0.7	2.5	24	. .	145	. .	032	. .	52.9	12 16 24.08	. .	+ 13.3	63 22 59.3	− 0.2
40	291 56	3.8	3.0	4.2	7.5	25	. .	650	822	765	. .	52.9	292 1 11.4	. .	− 2 29.7	343 5 2.9	− 4.0
41	26 12	6.7	7.5	9.8	11.8	25	. .	650	. .	518	. .	52.9	26 17 9.8	. .	+ 30.1	77 24 1.1	+ 1.3
42	333 4	2.6	2.4	4.1	7.5	22	. .	370	. .	280	. .	52.9	333 8 48.7	. .	− 30.9	24 14 39.0	− 1.3
43																	
44	322 ~~28~~	0.7	29.8	2.7	4.2	27	. .	545	. .	370	. .	52.9	322 31 33.1	808	− 46.8	13 37 7.5	+ 0.8
45	43 42	2.0	2.0	2.0	4.2	26	795	860	. .	. .	. .	51.5	43 45 40.0	. .	+ 54.2	94 52 55.4	
46	44 14	1.9	29.5	1.8	3.5	25	. .	. .	. .	915	. .	51.5	44 17 53.7	467	+ 55.2	95 25 10.1	
47	310 14	9 26.5	26.0	26.2	26.1	26	970	055	060	075	055	51.5	310 17 42.6	540	− 1 7.8	1 22 56.0	+ 0.8
48	15 58	0.0	0.0	27.5	28.0	23	. .	080	. .	995	. .	51.5	16 2 41.1	587	+ 16.7	67 9 19.0	+ 1.0
49																	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	30.090	67.5	28.5
4	. .	. .	36.9
25	. .	. .	28.0
44	30.224	65.5	26.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	− 7.4	0.0	. .	− 7.4
4	− 6.3	− 16 8.2	. .	− 16 14.5
5	− 6.3	+ 16 8.2	. .	+ 16 1.9
9	− 0.1	. . .	. .	− 0.1
23	− 0.1	+ 1.6	. .	+ 1.5
24	− 0.1	− 1.7	. .	− 1.8
45	− 6.1	+ 16 7.3	. .	+ 16 1.2
46	− 6.2	− 16 7.3	. .	− 16 13.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 7	1	α Cygni	E.	58.5	2.0	4.1	12.9	15.7	18.6	27.9	29.4	33.0	37 15.79	− 0.17	. .	−16.99	20 36 58.63	+ 0.09
	2	ζ Cygni	E.	. .	. .	35.2	37.6	40.0	42.4	44.7	. .	. .	7 39.91	− 0.17	−16.96	. .	. . . .	. .
	3	α Cephei	E.	17.5	. .	. .	. .	43.5	. .	. .	. .	9.7	15 43.59	− 0.17	. .	−16.96	21 15 26.46	+ 0.14
	4	β Cephei	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	5	Mercury, (center)	E.	. .	. .	37.3	39.5	41.5	43.9	45.7	. .	. .	39 41.59	− 0.21	. .	−16.94	21 39 24.44	+ 0.06
8	6	Sun I, N.	E.	43.9	46.5	48.0	54.1	56.3	58.4	4.5	6.1	8.6	14 56.27	− 0.20	. .	−16.88	23 14 39.19	. .
	7	Sun II, S.	E.	. .	. .	3.9	6.0	8.1	10.2	14.2	15.8	18.4	17 6.03	− 0.20	. .	−16.88	23 16 48.95	. .
	8	α Cygni	F.	57.6	1.1	3.3	12.0	14.9	17.8	26.5	28.5	32.0	37 14.86	− 0.20	−16.10	−16.01	20 36 58.65	+ 0.11
	9	Mercury II, (center)	F.	41.8	44.4	46.0	50.4	52.4	54.3	56.4	. .	. .	44 54.46	− 0.26	. .	−15.98	21 44 38.22	− 0.22
	10	Venus, N.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	11	Venus II, S.	F.	37.7	40.3	41.7	47.9	50.0	52.0	58.2	59.8	2.2	49 49.98	− 0.24	. .	−15.98	21 49 33.76	− 1.85
9	12	Sun I, S.	F.	. .	. .	. .	. .	. .	. .	44.9	46.4	49.0	18 36.68	− 0.24	. .	−15.93	23 18 20.51	. .
	13	Sun II, N.	F.	34.2	36.8	38.2	44.5	46.5	48.6	54.7	56.3	58.8	20 46.51	− 0.24	. .	−15.93	23 20 30.34	. .
	14	Polaris	F.	. .	. .	7.0	32.0	56.0	20.0	43.0	. .	. .	10 55.92	− 0.70	. .	−15.87	. . . .	. .
	15	β Arietis	F.	. .	. .	. .	. .	. .	. .	51.0	52.7	55.4	47 42.35	− 0.22	−15.72	−15.85	1 47 26.28	− 0.12
	16	α Arietis	F.	52.5	55.1	56.9	3.5	5.8	8.0	14.6	16.4	19.0	0 5.76	− 0.21	−15.90	−15.85	1 59 49.70	+ 0.06
	17	Moon I, S.	F.	33.7	36.4	38.0	44.6	46.8	49.0	55.6	57.3	0.0	44 46.82	− 0.22	. .	−15.76	4 44 30.84	+65.86
	18	11 Orionis	F.	. .	. .	22.0	24.0	26.1	28.2	32.4	34.0	36.7	57 24.00	− 0.22	−15.73	−15.75	4 57 8.03	− 0.09
	19	β Orionis	F.	20.7	23.4	24.8	31.0	33.0	35.1	41.3	42.9	45.4	8 33.07	− 0.25	−15.73	−15.75	5 8 17.07	− 0.03
	20	β Tauri	F.	6.1	9.0	10.9	17.8	20.0	22.4	29.4	31.2	34.1	18 20.10	− 0.21	−15.77	−15.74	5 18 4.15	+ 0.01
	21	δ Orionis	F.	25.4	27.9	29.4	35.5	37.6	39.6	45.8	47.2	49.9	25 37.59	− 0.24	−15.69	−15.74	5 25 21.61	− 0.09
	22	ε Orionis	F.	40.6	43.1	44.6	50.8	52.8	54.8	0.9	2.5	5.0	29 52.79	− 0.24	−15.76	−15.74	5 29 36.81	+ 0.01
	23	α Columbæ	F.	57.8	0.7	2.4	10.0	12.4	14.8	22.3	24.2	27.2	35 12.42	− 0.30	−15.70	−15.73	5 34 56.39	− 0.07
	24	ψ^1 Draconis, S. P.	F.	. .	. .	44.4	37.5	30.9	24.0	18.0	. .	. .	44 30.94	− 0.11	. .	−15.73	17 44 15.10	+ 0.29
	25	ε Leonis	F.	31.2	33.9	35.8	42.5	44.7	46.9	53.7	55.3	58.2	38 44.69	− 0.21	−15.63	−15.63	9 38 28.85	− 0.04
	26	μ Leonis	F.	25.0	27.7	29.5	36.3	38.6	40.9	47.6	49.5	52.3	45 38.60	− 0.21	−15.67	−15.63	9 45 22.76	+ 0.03
	27	79 Draconis, S. P.	F.	. .	. .	40.9	34.0	27.1	20.0	13.7	. .	. .	51 27.12	− 0.11	. .	−15.62	21 51 11.39	− 0.09
	28	α Leonis	F.	31.0	33.5	35.0	41.3	43.5	45.5	51.7	53.5	55.8	1 43.42	− 0.22	−15.60	−15.61	10 1 27.59	− 0.02
	29	32 Ursæ Majoris	F.	22.0	28.1	32.0	46.5	51.5	56.5	11.5	15.1	21.4	8 51.62	− 0.20	. .	−15.61	10 8 35.81	+ 0.02
	30	γ^1 Leonis	F.	51.7	54.4	56.1	2.5	4.8	7.0	13.4	15.0	17.8	13 4.74	− 0.22	−15.56	−15.60	10 12 48.92	− 0.05
	31	9 Draconis	F.	. .	. .	0.1	9.1	18.0	26.5	35.1	. .	. .	24 17.79	− 0.24	. .	−15.60	10 24 1.95	− 0.27
	32	ρ Leonis	F.	2.1	4.6	6.4	12.5	14.5	16.5	23.0	24.4	27.1	26 14.57	− 0.23	−15.63	−15.60	10 25 58.78	− 0.04
	33	α Ursæ Majoris	F.	32.2	37.5	41.0	53.9	58.5	2.8	16.3	19.7	25.2	55 58.57	− 0.20	. .	−15.58	10 55 42.79	− 0.10
	34	δ Leonis	F.	15.0	17.8	19.4	25.9	28.1	30.2	37.0	38.4	41.3	7 28.12	− 0.21	−15.52	−15.57	11 7 12.34	− 0.01
	35	δ Crateris	F.	54.9	57.6	59.0	5.3	7.4	9.5	15.9	17.4	20.0	13 7.44	− 0.26	−15.61	−15.57	11 12 51.61	+ 0.02
	36	τ Leonis	F.	19.6	22.0	23.5	29.9	31.9	33.8	40.0	41.4	44.0	21 31.79	− 0.23	−15.57	−15.57	11 21 15.99	− 0.02
	37	γ Ursæ Majoris	F.	55.2	59.6	2.2	12.7	16.1	19.5	30.1	32.8	37.2	47 16.16	− 0.20	. .	−15.56	11 47 0.40	+ 0.03
	38	ο Virginis	F.	39.5	42.1	43.6	49.8	51.9	53.9	0.1	1.7	4.2	58 51.87	− 0.23	−15.58	−15.55	11 58 36.09	+ 0.01
	39	ε Pegasi	Ha.	50.0	52.7	54.1	0.3	2.3	4.4	10.6	12.2	14.9	38 2.39	− 0.45	−15.38	−15.27	21 37 46.67	+ 0.04
	40	Venus II, S.	Ha.	. .	. .	0.7	2.8	4.7	6.8	8.9	. .	. .	49 4.79	− 0.44	. .	−15.26	21 48 49.09	− 1.83
	41	Venus, N.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	42	Mercury, (center)	Ha.	. .	. .	8.4	10.5	12.7	14.7	16.8	. .	. .	50 12.63	− 0.45	. .	−15.25	21 49 56.93	− 0.08
10	43	Sun I, S.	Ha.	4.8	7.3	9.0	15.0	17.1	19.2	25.4	27.0	29.4	22 17.13	− 0.44	. .	−15.21	23 22 1.48	. .
	44	Sun II, N.	Ha.	14.4	17.0	18.6	24.7	26.7	28.6	34.9	36.4	38.9	24 26.69	− 0.44	. .	−15.21	23 24 11.04	. .
	45	Polaris	Ha.	. .	. .	7.0	30.0	55.0	21.0	45.0	. .	. .	10 55.92	− 1.30	. .	−15.16	1 10 39.46	+ 0.35
	46 47	Moon I, S.	Ha.	14.9	17.7	19.9	26.2	28.4	30.7	37.4	39.0	41.8	38 28.44	− 0.44	. .	−15.03	5 38 12.97	+67.62
	48	22 Camelopardalis	Ha.	11.9	19.0	23.4	40.9	46.6	52.4	9.7	14.0	21.2	4 46.57	− 0.46	. .	−15.01	6 4 31.10	+ 0.29
	49	δ Ursæ Minoris, S.P.	Ha.	. .	. .	37.5	4.0	29.0	54.0	20.0	. .	. .	14 28.78	− 0.02	. .	−15.01	18 14 13.75	+ 0.17
	50	α Canis Majoris	Ha.	27.9	30.4	32.2	38.5	40.6	42.6	49.2	50.6	53.5	39 40.61	− 0.46	−15.04	−15.00	6 39 25.15	− 0.05
	51	ε Canis Majoris	Ha.	32.9	35.7	37.4	44.6	46.8	49.2	56.1	58.0	0.7	53 46.82	− 0.47	−14.97	−14.99	6 53 31.36	− 0.07
	52	δ Canis Majoris	Ha.	8.6	11.3	13.1	19.9	22.2	24.4	31.3	33.0	35.8	3 22.18	− 0.47	−14.99	+14.99	7 3 6.72	− 0.05

4, 27, 31, 41, 42, 46. Bisections at sets B and D.
9. R. A. observed over wires B_1–C_4.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″								° ′ ″		′ ″	° ′ ″	″
1	354 0	2.0	26.0	27.2	29.2	22	. .	233	. .	130	. .	52.9	354 4 56.0	. .	− 6.1	45 11 11.1	− 0.7
2	9 8	12.3	7.2	9.2	10.0	25	. .	. .	. .	195	120	52.9	9 11 58.3	. .	+ 9.6	60 18 29.1	+ 0.3
3	336 48	6.5	0.2	2.5	3.8	25	. .	042	. .	938	. .	52.9	336 52 8.7	. .	− 25.3	27 58 4.6	− 0.4
4	328 50	3.7	28.0	0.0	1.8	21	847	. .	. .	. .	805	52.9	328 54 59.0	. .	− 35.7	20 0 44.5	− 1.4
5	54 18	10.8	5.3	8.5	8.6	26	. .	328	. .	250	. .	52.9	54 21 43.1	. .	+ 1 22.3	105 29 26.6	
6	43 18	10 5.1	26.5	29.6	29.6	24	330	440	. .	. .	. .	52.9	43 22 21.0	642	+ 55.6	94 29 37.8	
7	43 50	10 6.7	28.8	1.1	1.3	23	. .	. .	. .	430	325	52.9	43 54 33.3	. .	+ 56.7	95 1 51.2	
8	354 0	10 1.7	25.9	27.2	28.5	22	. .	210	. .	090	. .	51.5	354 4 55.4	756	− 6.3	45 11 10.3	− 1.7
9	53 58	9 29.7	23.1	24.1	25.0	24	. .	212	. .	. .	. .	51.5	54 2 26.8	. .	+ 1 22.9	105 10 10.9	
10	43 40	10.7	4.3	6.1	6.0	26	. .	. .	. .	286	268	51.5	43 43 42.4	. .	+ 57.6	94 51 1.2	
11	43 40	10.7	4.3	6.1	6.0	23	. .	190	. .	. .	. .	51.5	43 44 31.8	700	+ 57.6	94 51 50.6	
12	43 26	7.6	0.5	8.3	3.5	21	120	120	. .	. .	. .	51.4	43 31 4.6	687	+ 56.5	94 38 22.3	
13	42 54	7.2	29.5	7.6	5.0	22	. .	. .	. .	010	985	51.4	42 58 50.1	. .	+ 55.4	94 6 6.7	
14	310 14	10 6.7	0.1	2.4	4.0	26	526	500	455	510	540	51.4	310 17 43.5	692	− 1 10.2	1 22 54.5	− 1.2
15	18 38	6.5	0.9	3.1	3.6	20	. .	. .	. .	965	945	51.3	18 43 6.9	. .	+ 20.2	69 49 48.3	− 0.6
16	15 58	8.4	3.0	5.5	6.6	22	722	702	. .	580	550	51.3	16 2 40.0	684	+ 17.1	67 9 18.3	− 0.1
17	20 40	9 22.9	16.7	17.8	18.6	26	359	411	464	526	578	51.2	20 43 58.2	714	+ 22.6	71 50 42.0	
18	23 36	10 11.3	4.5	7.0	10.1	24	. .	. .	. .	724	715	51.2	23 40 4.6	. .	+ 26.3	74 46 52.1	+ 0.1
19	47 10	10 14.3	6.7	8.9	10.8	24	990	954	. .	810	802	51.2	47 14 1.0	. .	+ 1 4.8	98 21 27.0	− 1.4
20	10 20	13.2	6.0	8.4	10.1	25	. .	. .	. .	828	810	51.1	10 23 46.6	. .	+ 11.0	61 30 18.8	− 1.6
21	39 12	11.7	2.8	7.4	9.7	21	. .	662	. .	618	. .	51.1	39 16.52.8	. .	+ 49.2	90 24 3.2	− 0.3
22	40 6	13.2	7.2	9.2	11.9	24	210	172	. .	026	000	51.1	40 10 12.7	. .	+ 50.8	91 17 24.7	− 1.1
23	72 54	10 6.4	29.3	1.7	3.6	19	902	885	. .	800	738	51.1	72 59 25.2	746	+ 3 14.7	124 9 1.1	− 0.7
24	291 4	8.9	1.7	3.7	6.4	22	800	790	. .	718	710	51.1	29 8 38.4	. .	− 2 35.4	342 12 24.2	− 2.1
25	14 28	9.0	3.4	5.7	7.2	28	. .	. .	. .	540	530	52.3	14 31 9.4	788	+ 15.8	65 37 46.4	0.0
26	12 12	12.5	6.5	9.1	10.2	23	540	500	. .	426	350	52.3	12 16 25.0	. .	+ 13.2	63 22 59.4	+ 0.3
27	291 56	10 5.0	27.4	29.6	2.5	20	704	750	. .	. .	. .	52.3	292 1 15.0	. .	− 2 29.5	343 5 6.7	+ 1.1
28	26 12	10 11.1	4.9	7.0	10.0	20	810	774	. .	600	590	52.3	26 17 8.3	790	+ 30.1	77 23 59.6	− 0.3
29	333 4	6.7	0.5	2.6	4.8	22	. .	. .	. .	300	336	52.3	333 8 48.1	. .	− 30.8	24 14 38.5	− 0.7
30	18 20	10.3	4.9	7.5	9.5	27	. .	258	. .	130	. .	52.3	18 23 29.2	. .	+ 20.2	69 30 10.6	− 0.5
31	322 28	11.6	5.4	7.4	9.6	27	268	150	. .	. .	. .	52.3	322 31 29.0	. .	− 46.7	13 37 3.5	− 2.0
32	28 50	9.4	8.5	6.6	9.7	22	. .	530	. .	400	. .	52.3	28 54 40.0	. .	+ 33.6	80 1 35.7	− 1.4
33	336 22	10 6.7	1.3	3.2	5.5	21	. .	. .	. .	578	616	52.3	336 26 58.3	. .	− 26.6	27 32 52.9	− 0.8
34	17 36	8.3	1.7	4.5	6.5	28	320	312	. .	128	098	52.3	17 39 16.4	798	+ 19.4	68 45 57.0	− 0.2
35	52 52	10.4	3.9	6.6	8.7	21	. .	590	. .	542	. .	52.3	52 56 55.6	. .	+ 1 20.8	104 4 37.6	+ 0.8
36	35 14	10.5	3.5	6.3	8.6	22	. .	530	. .	420	. .	52.3	35 18 42.0	. .	+ 43.2	86 25 46.4	− 0.5
37	344 24	7.0	0.9	4.1	6.9	21	. .	700	. .	595	. .	52.3	344 28 57.6	. .	− 17.0	35 35 1.8	+ 0.1
38	29 22	8.9	1.7	4.5	7.6	25	. .	956	. .	875	. .	52.3	29 25 51.0	804	+ 34.4	80 32 46.6	− 0.5
39	29 32	9 27.9	17.6	20.0	21.6	24	. .	740	. .	572	. .	53.1	29 36 25.0	680	+ 33.7	80 43 19.9	+ 0.3
40	43 54	23.6	22.7	20.1	1.0	25	. .	148	. .	052	. .	53.1	43 58 15.5	. .	+ 57.2	95 5 33.9	
41	43 54	23.6	22.7	20.1	1.0	28	. .	640	. .	525	. .	53.1	43 57 22.3	680	+ 57.2	95 4 40.7	
42	53 38	23.5	22.2	20.0	29.6	26	. .	400	. .	320	. .	53.1	53 41 56.8	. .	+ 1 20.7	104 49 38.7	
43	43 4	27.5	24.0	24.0	5.3	27	380	350	. .	. .	. .	53.1	43 7 38.2	647	+ 55.2	94 14 54.6	
44	42 32	27.5	23.1	21.5	3.1	28	. .	. .	. .	280	250	53.1	42 35 24.5	. .	+ 54.2	93 42 39.9	
45	310 14	9 19.6	18.1	16.2	26.5	27	490	435	490	555	570	53.1	310 17 43.2	582	− 1 8.4	1 22 56.0	+ 0.1
46	18 41.5	10 28.9	26.4	24.4	2.6	22	. .	755	800	812	. .	52.7	18 46 16.8	588	+ 19.8	69 52 57.8	
47		6 29.6	26.1	24.0	2.6												
48	329 28	9 25.0	22.0	20.1	29.0	24	. .	705	. .	570	. .	52.7	329 32 23.4	. .	− 34.0	20 38 10.6	− 0.2
49	305 26	29.5	26.2	23.2	2.7	21	615	. .	570	. .	520	52.7	305 31 5.5	600	− 1 21.6	356 36 5.1	− 0.9
50	55 20	25.5	23.5	21.6	0.0	22	. .	540	. .	420	. .	52.7	55 24 54.3	. .	+ 1 24.6	106 32 40.1	+ 0.4
51	67 34	27.6	24.9	23.8	1.7	20	. .	290	. .	305	. .	52.7	67 39 25.6	613	+ 2 21.4	118 48 8.2	+ 1.7
52	64 58	29.2	27.0	25.9	4.2	21	. .	178	. .	155	. .	52.7	65 3 12.9	. .	+ 2 5.2	116 11 39.3	+ 4.9

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
6	. .	. .	39.5
12	. .	. .	38.4
39	. .	. .	43.5
43	. .	. .	48.5
46 47	. .	. .	47.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 6.9	. . .	0.0	− 6.9
6	− 6.1	+ 16 6.7	. .	+ 16 0.6
7	− 6.1	− 16 6.7	. .	− 16 12.8
9	− 6.6	. . .	. .	− 6.6
10	− 19.4	− 24.7	0.0	− 44.1
11	− 19.4	+ 24.7	. .	+ 5.3
12	− 6.1	− 16 7.8	. .	− 16 13.9
13	− 6.1	+ 16 7.8	. .	+ 16 1.7
17	−19 19.5	− 15 2.9	. .	− 34 22.4
40	− 19.7	− 26.6	. .	− 46.3
41	− 19.7	+ 26.6	. .	+ 6.9
42	− 6.5	. . .	− 0.1	− 6.6
43	− 6.1	− 16 7.3	. .	− 16 13.4
44	− 6.0	+ 16 7.3	. .	+ 16 1.2
46	−17 46.0	− 15 14.2	. .	− 33 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 10	1	δ Geminorum . .	Ha.	23.8	26.6	28.2	34.8	37.0	39.2	45.9	47.5	50.2	12 37.02	− 0.44	−14.90	−14.98	7 12 21.60	− 0.11
	2	τ Draconis, S. P. .	Ha.	57.9	49.3	44.1	23.0	16.0	9.0	48.0	42.7	33.5	18 15.94	− 0.32	. .	−14.98	19 18 0.64	+ 0.19
	3	α^2 Geminorum . .	Ha.	. .	. .	29.0	31.3	33.7	36.3	38.7	. .	. .	26 33.81	− 0.43	−14.97	−14.97	7 26 18.41	+ 0.24
	4	α Canis Minoris. .	Ha.	33.0	35.7	37.2	43.4	45.4	47.5	53.8	55.1	57.7	32 45.42	− 0.45	−14.96	−14.97	7 32 30.00	− 0.15
	5	β Geminorum . .	Ha.	23.3	26.3	28.0	34.9	37.3	39.6	46.6	48.3	51.1	37 37.27	− 0.43	−15.02	−14.97	7 37 21.87	+ 0.02
	6	φ Geminorum . .	Ha.	34.4	37.1	38.8	45.7	48.0	50.3	57.2	58.9	1.8	45 48.02	− 0.43	−14.93	−14.96	7 45 32.63	− 0.11
	7	λ Ursæ Minoris, S.P.	Ha.	. .	. .	37.0	52.0	1.0	13.0	. .	. .	. .	54 1.68	+ 0.73	. .	−14.96	19 54 47.45	− 0.47
	8	ε Leonis	Ha.	30.8	33.5	35.3	41.9	44.1	46.4	53.1	54.8	57.6	38 44.17	− 0.44	−14.88	−14.91	9 38 28.82	− 0.08
	9	μ Leonis	Ha.	24.4	27.3	29.0	35.8	38.1	40.3	47.2	49.0	51.7	45 38.09	− 0.43	−14.95	−14.91	9 45 22.75	+ 0.03
	10	79 Draconis, S. P. .	Ha.	8.6	59.9	54.4	34.7	26.7	19.7	58.6	53.0	44.6	51 26.69	− 0.32	. .	−14.90	21 51 11.47	− 0.04
	11	α Leonis	Ha.	30.4	32.9	34.6	40.8	42.9	45.0	51.2	52.8	55.5	1 42.90	− 0.44	−14.86	−14.90	10 1 27.56	− 0.08
	12	32 Ursæ Majoris . .	Ha.	21.4	27.5	31.4	46.5	51.2	56.2	11.2	14.9	21.1	8 51.27	− 0.45	. .	−14.90	10 8 35.92	+ 0.14
	13	α Cygni	E.	56.4	0.1	2.2	10.7	13.8	16.7	25.1	27.4	31.0	37 13.71	− 0.38	−14.72	−14.59	20 36 58.74	+ 0.15
	14	Venus II, N. . .	E.	16.7	19.0	20.7	26.8	28.9	31.0	37.0	38.7	41.3	48 28.90	− 0.40	. .	−14.55	21 48 13.95	− 1.81
	15	Venus, S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. . . .	. .
11	16	Sun I, N. . . .	E.	44.7	47.3	48.7	54.8	56.8	58.9	5.0	6.6	9.1	25 56.88	− 0.40	. .	−14.50	23 25 41.98	. .
	17	Sun II, S. . . .	E.	54.1	56.6	58.4	4.4	6.5	8.5	14.5	16.1	18.7	28 6.42	− 0.40	. .	−14.50	23 27 51.52	. .
	18	Moon I, N. . .	E.	36.1	38.8	40.5	47.4	49.5	51.6	58.5	0.2	3.0	34 49.51	− 0.39	. .	−14.30	6 34 34.82	+69.17
	19	δ Geminorum . .	E.	23.1	25.6	27.4	34.0	36.2	38.4	45.0	46.7	49.4	12 36.20	− 0.39	−14.18	−14.28	7 12 21.53	− 0.16
	20	Uranus I, (center).	E.	11.9	14.5	16.2	. .	. .	. .	33.9	35.5	38.2	18 25.03	− 0.39	. .	−14.28	7 18 10.36	. .
	21	Uranus II . . .	E.	. .	. .	21.0	23.1	25.3	27.4	29.7	. .	. .	18 25.30	− 0.39	. .	−14.28	7 18 10.63	. .
	22	α^2 Geminorum . .	E.	18.5	21.6	23.3	30.6	33.0	35.5	42.6	44.5	47.5	26 33.01	− 0.39	−14.23	−14.27	7 26 18.35	+ 0.20
	23	α Canis Minoris. .	E.	32.5	34.9	36.5	42.6	44.7	46.8	52.9	54.3	57.0	32 44.69	− 0.40	−14.29	−14.27	7 32 30.02	− 0.12
	24	β Geminorum . .	E.	22.6	25.4	27.3	34.1	36.4	38.6	45.7	47.5	50.4	37 36.44	− 0.38	−14.26	−14.27	7 37 21.79	− 0.04
	25	φ Geminorum . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	26	ε Draconis, S. P. .	E.	. .	. .	1.1	55.3	49.0	43.2	36.8	. .	. .	48 49.06	− 0.41	. .	−14.26	19 48 34.39	+ 0.31
14	27	Venus II, S. . .	F.	31.2	33.8	35.4	41.6	43.6	45.6	51.8	53.3	55.9	47 43.58	− 0.31	. .	. . .	. . . .	. .
	28	Venus, N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
16	29	Sun I, N. . . .	Ha.	0.8	3.4	4.9	11.0	13.1	15.2	21.4	22.8	25.5	44 13.12	− 0.34	. .	−12.58	23 44 0.20	. .
	30	Sun II, S. . . .	Ha.	9.9	12.5	14.0	20.2	22.2	24.2	30.2	31.8	34.4	46 22.16	− 0.34	. . .	−12.58	23 46 9.24	. .
	31	Polaris	Ha.	. .	. .	1.0	29.0	50.0	14.5	39.0	. .	. .	10 51.02	− 1.55	. .	−12.57	1 10 36.90	+ 0.57
	32	α Arietis	Ha.	49.2	52.0	53.6	0.1	2.3	4.7	11.3	12.9	15.8	0 2.43	− 0.31	−12.54	−12.57	1 59 49.55	− 0.03
	33	12-y'r Cat. 1879, S.P.	Ha.	23.9	38.9	47.6	22.7	34.6	46.1	21.8	30.5	45.4	53 34.61	− 0.04	. .	−12.55	20 53 22.02	+ 2.19
	34	α Leonis	Ha.	28.0	30.4	32.0	38.3	40.4	42.5	48.9	50.5	52.9	1 40.43	− 0.32	−12.53	−12.55	10 1 27.56	− 0.06
	35	γ^1 Leonis	Ha.	49.0	51.6	53.1	59.6	1.7	4.0	10.5	12.1	24.9	13 1.83	− 0.32	−12.57	−12.55	10 12 48.96	0.00
	36	9 Draconis . . .	Ha.	22.9	34.0	40.9	6.2	14.8	23.5	49.7	56.2	7.0	24 15.02	− 0.38	. .	−12.55	10 24 2.09	− 0.01
	37	226 Cephei, S. P. . .	Ha.	56.3	46.1	39.9	15.5	7.5	59.4	34.5	28.4	17.6	30 7.24	− 0.09	. .	−12.55	22 29 54.60	− 0.26
	38	*l* Leonis	Ha.	26.8	29.3	30.7	36.9	39.0	41.2	47.3	49.0	51.6	42 39.09	− 0.32	−12.56	−12.55	10 42 26.22	+ 0.02
	39	δ Leonis	Ha.	12.1	14.8	16.6	23.0	25.2	27.4	34.1	35.6	38.5	7 25.26	− 0.32	−12.52	−12.54	11 7 12.40	− 0.08
	40	δ Crateris . . .	Ha.	52.0	54.6	56.2	2.4	4.5	6.6	12.9	14.6	17.1	13 4.54	− 0.35	−12.68	−12.54	11 12 51.65	+ 0.04
	41	Moon I, N. . .	Ha.	13.9	16.6	18.2	24.5	26.6	28.8	35.0	36.6	39.3	33 26.61	− 0.33	. .	−12.54	11 33 13.74	+69.85
	42	β Corvi	Ha.	34.5	37.3	38.9	45.5	47.7	49.9	56.6	58.2	1.0	27 47.73	− 0.37	−12.53	−12.54	12 27 34.82	− 0.04
	43	21 Cassiopeæ, S. P. .	Ha.	0.5	51.0	45.2	22.8	14.9	7.6	45.1	39.5	29.5	37 15.12	− 0.10	. .	−12.54	0 37 2.48	+ 0.20
	44	12 Canum Venat. .	Ha.	54.8	58.0	0.0	8.0	10.5	13.1	21.0	22.9	26.7	50 10.50	− 0.31	−12.51	−12.54	12 49 57.65	− 0.03
	45	θ Virginis . . .	Ha.	14.8	17.3	18.9	25.0	27.0	29.1	35.2	36.6	39.3	2 27.02	− 0.34	−12.52	−12.54	13 3 14.14	− 0.03
	46	Polaris, S. P. . .	Ha.	. .	. .	37.0	12.0	50.0	24.0	58.0	. .	. .	10 47.88	+ 1.08	. .	−12.54	1 10 36.42	+ 0.29
17	47	ε Pegasi	F.	47.4	49.9	51.4	57.6	59.6	1.8	8.0	9.5	12.1	37 59.70	− 0.46	−12.27	−12.52	21 37 46.72	− 0.05
	48	Venus II, S. . .	F,	34.8	37.4	38.8	45.0	47.0	49.0	55.3	56.8	59.3	48 47.04	− 0.50	. .	−12.52	21 48 34.02	− 1.63
	49	Venus, N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .

2, 10. Bisections at sets B and D.
18. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	16 36	29.5	27.1	24.2	2.5	24	. .	802	. .	741	. .	52.7	16 40 16.3	. .	+ 17.5	67 46 55.0	+ 1.0
2	291 58	24.3	21.9	20.5	29.1	23	. .	838	. .	765	. .	52.7	292 2 35.1	. .	− 2 23.6	343 6 32.7	+ 0.7
3	6 40	25.6	23.7	21.0	28.6	28	. .	. .	. .	880	852	52.7	6 43 16.4	. .	+ 6.9	57 49 44.5	− 1.0
4	33 16	0.9	29.5	26.0	3.5	26	. .	570	. .	510	. .	52.7	33 19 47.5	. .	+ 38.5	84 26 47.2	− 0.2
5	10 30	28.2	25.9	23.6	1.6	29	. .	080	. .	950	. .	52.7	10 33 12.4	. .	+ 10.9	61 39 44.5	− 0.9
6	11 44	26.2	24.7	22.9	0.0	28	095	125	. .	. .	. .	52.7	11 47 28.9	. .	+ 12.2	62 54 2.3	− 0.4
7	307 46	25.2	23.0	20.2	29.9	26	922	036	045	000	. .	52.7	307 49 45.7	622	− 1 15.4	358 54 51.3	+ 0.1
8	14 28	28.2	25.5	22.9	1.1	29	. .	275	. .	155	. .	52.7	14 30 59.8	655	+ 15.3	65 37 46.3	0.0
9	12 12	28.2	26.5	23.6	1.9	24	. .	270	. .	210	. .	52.7	12 16 25.3	. .	+ 12.9	63 22 59.4	+ 0.4
10	291 56	28.0	24.5	22.5	1.6	21	. .	281	. .	134	. .	52.7	292 1 12.0	. .	− 2 25.3	343 5 7.9	+ 2.6
11	26 12	1.6	28.4	25.9	3.1	21	. .	370	. .	160	. .	52.7	26 17 8.4	. .	+ 29.2	77 23 58.8	− 1.0
12	333 4	25.0	22.5	20.2	28.5	22	. .	995	. .	995	. .	52.7	333 8 48.3	670	− 30.0	24 14 39.5	+ 0.5
13	354 0	27.2	24.8	23.3	25.8	22	472	368	. .	238	132	51.8	354 4 56.5	. .	− 6.1	45 11 11.6	− 1.2
14	44 8	1.7	2.6	29.0	1.9	23	400	. .	. .	. .	198	51.8	44 10 34.7	587	+ 56.5	95 17 52.4	
15	44 8	1.7	2.6	29.0	1.9	19	. .	862	. .	775	. .	51.8	44 11 27.9	. .	+ 56.5	95 18 45.6	
16	42 8	3.3	2.2	28.2	2.5	25	908	882	. .	. .	. .	51.8	42 11 55.5	. .	+ 51.9	93 19 8.6	
17	42 40	0.5	29.5	26.0	29.7	25	. .	. .	. .	141	113	51.8	42 44 8.6	518	+ 52.9	93 51 22.7	
18	17 17	12 10.6	9.5	2.8	5.0	24	960	060	000	010	035	52.0	17 21 0.1	565	+ 18.1	68 27 39.4	
19	16 36	8.1	6.5	2.2	3.5	24	310	300	. .	180	165	52.0	16 40 17.1	. .	+ 17.4	67 46 55.7	+ 1.7
20	16 6	6.9	5.0	29.8	1.5	25	775	755	. .	630	610	52.0	16 9 56.6	. .	+ 16.8	67 16 34.6	
21																	
22	6 40	1.3	28.8	24.4	27.6	28	. .	610	. .	510	. .	52.0	6 43 18.0	. .	+ 6.9	57 49 46.1	+ 0.7
23	33 16	8.2	6.3	2.0	3.8	26	. .	108	. .	000	. .	52.0	33 19 49.2	. .	+ 38.2	84 26 48.6	+ 1.2
24	10 30	2.2	0.1	26.0	28.5	28	. .	793	. .	645	. .	52.0	10 33 14.4	. .	+ 10.8	61 39 46.4	+ 1.1
25	11 44	28.0	26.0	22.6	26.6	27	. .	900	. .	760	. .	52.0	11 47 31.4	. .	+ 12.1	62 54 4.7	+ 2.1
26																	
27	44 54	0.3	27.3	0.2	1.6	21	602	. .	. .	. .	298	52.0	44 59 4.6	602	+ 59.1	96 6 24.9	
28	44 54	0.3	27.3	0.2	1.6	24	. .	715	. .	607	. .	52.0	44 58 15.6	. .	+ 59.0	96 5 35.8	
29	40 10	8.5	21.5	25.6	29.0	26	920	945	. .	. .	. .	53.1	40 13 43.8	. .	+ 50.2	91 20 55.2	
30	40 42	12.5	28.4	0.5	6.8	25	. .	. .	. .	743	883	53.1	40 45 53.8	680	+ 51.2	91 53 6.2	
31	310 14	26.2	21.2	22.0	28.0	26	925	880	858	922	930	53.1	310 17 48.1	667	− 1 9.8	1 22 59.5	+ 2.0
32	15 58	27.5	24.5	22.0	26.1	23	. .	. .	. .	270	245	53.1	16 2 42.1	660	+ 17.0	67 9 20.3	+ 1.3
33																	
34	26 12	10 0.2	27.5	28.7	29.2	21	. .	330	. .	265	. .	52.8	26 17 8.9	760	+ 29.9	77 24 0.0	+ 0.4
35	18 20	9 26.9	23.1	22.5	25.5	28	. .	140	. .	025	. .	52.8	18 23 29.6	. .	+ 20.1	69 30 10.9	+ 0.3
36	322 28	26.5	22.8	22.0	25.9	28	. .	365	. .	265	. .	52.8	322 31 27.5	. .	− 46.3	13 37 2.4	− 1.0
37	294 24	26.5	23.1	22.8	26.4	21	. .	605	. .	432	. .	52.8	294 29 8.4	. .	− 2 12.0	345 33 17.6	+ 2.5
38	27 34	0.3	26.4	25.4	28.0	20	. .	915	. .	855	. .	52.8	27 39 16.5	760	+ 31.7	78 46 9.4	+ 0.7
39	17 36	28.1	24.9	23.4	25.9	28	. .	945	. .	875	. .	52.8	17 39 15.9	. .	+ 19.2	68 45 56.3	− 0.3
40	52 52	9 28.1	24.4	23.4	26.5	22	. .	360	. .	283	. .	52.8	52 56 56.4	760	+ 1 19.9	104 4 37.5	− 0.3
41	31 47.5	10 21.6	18.9	16.1	19.5	23	1615	1415	. .	530	385	52.8	31 52 7.6	. .	+ 37.6	82 59 6.4	
42	61 28	25.6	23.1	22.0	25.0	24	. .	050	. .	250	. .	52.8	61 32 30.1	762	+ 1 51.4	112 40 42.7	+ 1.6
43	293 8	26.4	22.9	22.1	25.5	23	. .	. .	. .	480	438	52.8	293 12 37.5	. .	− 2 20.2	344 16 38.5	+ 4.1
44	359 48	27.3	23.5	22.2	24.6	24	. .	. .	. .	045	050	52.8	359 52 30.6	. .	− 0.1	50 58 51.7	+ 0.7
45	43 40	26.6	23.6	22.3	26.0	28	. .	540	. .	360	. .	52.8	43 43 23.7	. .	+ 57.8	94 50 42.7	− 0.7
46	307 28	26.0	23.4	21.6	25.0	26	065	140	075	140	062	52.8	307 32 0.2	763	− 1 18.6	358 37 2.8	+ 0.5
47	29 32	2.8	1.8	0.4	0.3	23	880	846	. .	670	662	49.6	29 36 25.5	645	+ 33.5	80 43 20.2	+ 0.3
48	45 24	9 28.5	27.8	26.1	27.8	23	468	. .	. .	. .	476	49.6	45 28 32.1	642	+ 59.8	96 35 53.1	
49	45 24	9 28.5	27.8	26.1	27.8	26	. .	810	. .	676	. .	49.6	45 27 43.7	. .	+ 59.8	96 35 4.7	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
12	. .	. .	36.0
14	. .	. .	51.5
18	29.800	68.7	48.0
30	. .	. .	30.5
33	. .	. .	23.0
46	. .	. .	21.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
14	− 19.5	+ 26.6	. .	+ 7.1
15	− 19.5	− 26.6	. .	− 46.1
16	− 5.9	+ 16 7.0	. .	+ 16 1.1
17	− 6.0	− 16 7.0	. .	− 16 13.0
18	−16 42.0	+ 15 28.0	. .	− 1 14.0
20	− 0.1	. . .	. .	− 0.1
27	− 18.7	− 24.6	+ 0.1	− 43.2
28	− 18.7	+ 24.6	. .	+ 5.9
29	− 5.7	+ 16 5.5	. .	+ 15 59.8
30	− 5.7	− 16 5.5	. .	− 16 11.2
41	−31 58.5	+ 16 38.4	. .	− 15 20.1
48	− 18.0	− 24.4	+ 0.4	− 42.0
49	− 18.0	+ 24.4	. .	+ 6.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 17	1	α Aquarii. . . .	F.	5.9	8.4	10.0	16.1	18.1	20.1	26.2	27.6	30.3	59 18.08	− 0.49	−12.61	−12.51	21 59 5.08	+ 0.13
	2	Mercury II, (center)	F.	56.3	58.8	0.4	6.7	8.9	10.8	17.1	18.8	21.2	36 8.78	− 0.52	. .	−12.51	22 35 55.75	− 0.20
	3	α Piscis Australis .	F.	28.0	29.8	34.5	36.6	39.1	41.4	44.0	48.4	50.3	50 39.12	− 0.60	−12.60	−12.51	22 50 26.01	+ 0.12
18	4	Sun I, N. . . .	F.	. .	. .	. .	30.8	32.8	34.8	38.8	40.7	43.0	51 30.78	− 0.49	. .	−12.50	23 51 17.79	. .
	5	Sun II, S. . . .	F.	27.7	30.2	31.8	37.9	39.9	42.0	48.2	49.8	52.2	53 39.97	− 0.49	. .	−12.50	23 53 26.98	. .
	6	Polaris	F.	. .	. .	. .	. .	. .	7.0	32.0	. .	. .	10 43.45	+ 4.66	. .	−12.48	1 10 35.63	+ 0.03
	7	α Arietis	F.	49.1	51.9	53.5	0.3	2.4	4.7	11.3	12.9	15.7	0 2.42	− 0.42	−12.42	−12.47	1 59 49.53	− 0.04
	8	Uranus I, (center)	F.	52.8	55.5	57.3	. .	. .	. .	14.8	16.5	19.3	18 6.03	− 0.44	. .	−12.42	7 17 53.17	. .
	9	Uranus II . . .	F.	. .	. .	1.9	4.0	6.3	8.4	10.6	. .	. .	18 6.25	− 0.44	. .	−12.42	7 17 53.39	. .
	10	α^2 Geminorum . .	F.	16.7	19.7	21.4	28.6	31.1	33.5	40.6	42.6	45.5	26 31.08	− 0.38	−12.44	−12.42	7 26 18.28	+ 0.26
	11	β Geminorum . .	F.	20.6	23.5	25.3	32.2	34.4	36.8	43.8	45.4	48.5	37 34.50	− 0.39	−12.43	−12.42	7 37 21.69	− 0.02
	12	φ Geminorum . .	F.	31.6	34.5	36.3	43.2	45.5	47.6	54.6	56.3	59.2	45 45.42	− 0.40	−12.49	−12.42	7 45 32.60	− 0.01
	13	ε Draconis, S. P. .	F.	. .	. .	. .	53.9	47.9	42.4	. .	. .	. .	48 48.06	− 0.78	. .	−12.42	19 48 34.86	+ 0.38
	14	λ Ursæ Minoris, S.P.	F.	. .	. .	50.0	4.0	16.0	29.0	. .	. .	. .	54 15.70	− 6.99	. .	−12.42	19 53 56.29	+ 1.21
	15	κ Cephei, S. P. . .	F.	20.1	8.5	1.4	34.1	24.0	14.7	46.9	40.2	29.0	13 24.32	− 0.99	. .	−12.41	20 13 10.92	+ 0.36
	16	Groom. 3241, S. P.	F.	23.9	15.6	10.7	50.8	44.3	37.6	17.7	12.8	4.4	30 44.20	− 0.83	. .	−12.41	20 30 30.96	+ 0.18
	17	ε Hydræ	F.	54.4	57.0	58.5	4.6	6.7	8.8	14.9	16.4	19.0	40 6.70	− 0.47	−12.29	−12.41	8 39 53.82	− 0.16
	18	12-y'r Cat. 1879, S.P.	F.	44.2	29.7	20.5	45.6	33.3	21.9	46.0	37.7	22.2	53 33.46	− 1.05	. .	−12.41	20 53 20.00	− 0.09
	19	4 Draconis	F.	. .	. .	1.0	11.6	21.5	31.6	41.6	. .	. .	6 21.50	+ 0.17	. .	−12.37	12 6 9.30	− 0.36
	20	η Virginis . . .	F.	16.8	19.3	21.0	27.0	29.1	31.1	37.2	38.8	41.3	13 29.07	− 0.48	−12.32	−12.37	12 13 16.22	− 0.07
	21	β Corvi	F.	34.5	37.0	38.8	45.5	47.7	49.9	56.4	58.3	1.0	27 47.68	− 0.57	−12.27	−12.37	12 27 34.74	− 0.13
	22	32^1 Camelopardalis .	F.	26.4	51.2	6.0	5.9	25.0	45.7	45.0	0.1	24.5	48 25.53	+ 1.29	. .	−12.37	12 48 14.45	− 7.27
	23	32^2 Camelopardalis .	F.	59.1	13.4	53.8	13.4	33.2	53.1	13.4	53.2	7.5	48 33.34	+ 1.29	. .	−12.37	12 48 22.26	+ 0.54
	24	Polaris, S. P. . .	F.	. .	. .	42.0	17.0	53.0	27.5	2.0	. .	. .	10 51.98	− 5.55	. .	−12.37	13 10 34.06	− 1.40
	25	α Virginis . . .	F.	22.0	24.7	26.3	32.5	34.5	36.5	42.8	44.3	47.0	18 34.51	− 0.52	−12.25	−12.37	13 18 21.62	− 0.13
	26	Moon II, N. . .	F.	0.9	3.5	5.0	11.3	13.4	15.5	21.8	23.4	26.1	33 13.43	− 0.50	. .	−12.36	13 33 0.57	−69.63
	27	η Bootis	F.	30.2	33.0	34.6	41.1	43.3	45.4	52.0	53.5	56.1	48 43.24	− 0.43	−12.32	−12.36	13 48 30.45	− 0.09
	28	Venus II, S. . .	Ha.	13.8	16.4	18.0	24.1	26.1	28.1	34.5	36.0	38.5	49 26.17	− 0.40	. .	−12.12	21 49 13.65	− 1.61
	29	Venus, N. . . .	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	30	Mercury, (center) .	Ha.	48.9	51.5	53.2	58.3	1.4	3.5	9.7	11.3	13.8	41 1.29	− 0.40	. .	−12.10	22 40 48.79	− 0.06
	31	α Pegasi	Ha.	15.7	18.3	19.9	26.1	28.2	30.3	36.8	38.3	41.1	58 28.30	− 0.38	−12.19	−12.09	22 58 15.83	+ 0.13
19	32	Sun I, S. . . .	Ha.	56.9	59.3	1.1	7.2	9.1	11.0	17.3	18.8	21.4	55 9.12	− 0.39	. .	−12.07	23 54 56.66	. .
	33	Sun II, N. . . .	Ha.	. .	. .	14.0	16.0	18.0	20.0	22.0	. .	. .	57 18.01	− 0.39	. .	−12.07	23 57 5.55	. .
	34	Polaris	Ha.	. .	. .	59.0	21.0	45.0	9.0	36.0	. .	. .	10 46.32	+ 0.55	. .	−12.05	1 10 34.82	− 0.50
	35	α Arietis	Ha.	48.8	51.4	53.1	59.7	2.0	4.2	10.8	12.6	15.3	0 1.99	− 0.36	−12.07	−12.04	1 59 49.59	+ 0.04
	36	κ Cancri	Ha.	42.9	45.3	46.8	53.2	55.2	57.2	3.5	5.1	7.6	0 55.20	− 0.38	−12.02	−11.92	9 0 42.90	+ 0.09
	37	ι Draconis . . .	Ha.	9.9	29.1	39.4	22.4	36.6	51.2	35.4	45.7	4.3	18 37.11	− 0.20	. .	−11.92	9 18 24.99	− 0.08
	38	α Hydræ	Ha.	12.5	15.3	16.8	22.9	24.9	27.0	33.2	34.9	37.4	21 24.99	− 0.40	−11.94	−11.92	9 21 12.67	− 0.01
	39	ε Leonis	Ha.	27.8	30.4	32.2	38.9	41.0	43.4	50.0	51.7	54.6	38 41.00	− 0.36	−11.85	−11.91	9 38 28.73	− 0.12
	40	79 Draconis, S. P. .	Ha.	5.7	57.2	51.9	37.8	30.5	23.8	. .	. .	. .	51 23.74	− 0.34	. .	−11.91	21 51 11.49	− 0.35
	41	α Leonis	Ha.	27.4	29.9	31.5	37.8	39.8	42.0	48.4	50.0	52.4	1 39.91	− 0.37	−11.98	−11.91	10 1 27.63	+ 0.03
	42	32 Ursæ Majoris . .	Ha.	18.0	24.3	27.9	42.9	47.7	52.9	7.9	11.6	17.8	8 47.89	− 0.33	. .	−11.91	10 8 35.65	− 0.02
	43	ρ Leonis	Ha.	58.5	1.2	2.8	9.0	11.0	13.1	19.3	20.8	23.6	26 11.03	− 0.38	−11.96	−11.90	10 26 58.75	− 0.01
	44	l Leonis	Ha.	26.0	28.6	30.2	36.3	38.4	40.5	46.7	48.3	50.9	42 38.43	− 0.37	−11.86	−11.89	10 42 26.17	− 0.03
	45	δ Leonis	Ha.	11.6	14.3	15.9	22.5	24.7	26.9	33.4	35.1	37.8	7 24.69	− 0.36	−11.91	−11.89	11 7 12.44	− 0.04
	46	δ Crateris . . .	Ha.	51.3	54.0	55.5	1.8	3.8	6.0	12.2	13.8	16.4	13 3.87	− 0.39	−11.90	−11.89	11 12 51.59	− 0.02
	47	τ Leonis	Ha.	15.8	18.4	20.2	26.1	28.2	30.3	36.4	38.0	40.5	21 28.21	− 0.38	−11.80	−11.89	11 21 15.94	− 0.11
	48	4 Draconis . . .	Ha.	21.3	33.5	41.7	11.3	21.5	31.4	2.0	9.6	22.0	6 21.59	− 0.30	. .	−11.87	12 6 9.42	− 0.25
	49	12 Canum Venat. .	Ha.	54.1	57.2	59.1	7.2	9.7	12.1	20.3	22.4	25.7	50 9.76	− 0.35	−11.70	−11.86	12 49 57.55	− 0.17

4. R. A. observed over wires C_3–D_3.
18, 19, 22, 23, 26. Bisections at sets B and D.
40. R. A. observed over wires C_3–B_1.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	′
1																	
2	50 6	10 2.1	0.0	27.4	29.5	23	310	310	. .	. .	. .	49.7	50 10 34.4	. .	+ 1 10.3	101 18 5.9	
3	69 ~~6~~	10 2.1	0.9	27.9	0.4	26	206	. .	. .	. .	116	49.7	69 9 45.5	627	+ 2 33.0	120 18 43.7	+ 1.1
4	39 22	9 26.5	24.5	20.5	0.0	24	138	958	. .	. .	. .	49.8	39 26 28.0	618	+ 48.2	90 33 37.4	
5	39 54	26.2	23.8	21.6	24.1	23	. .	. .	. .	558	498	49.8	39 58 36.0	. .	+ 49.1	91 5 46.3	
6	310 14	9 28.4	26.3	24.5	27.3	26	. .	. .	. .	760	710	50.0	310 17 45.3	608	− 1 8.8	1 22 57.7	− 0.5
7	15 58	10 0.4	28.4	26.0	27.0	22	. .	990	. .	880	. .	50.1	16 2 42.2	. .	+ 16.8	67 9 20.2	+ 1.0
8	16 6	7.7	5.1	1.9	3.0	27	. .	392	. .	268	. .	50.7	16 9 29.1	706	+ 17.3	67 16 7.6	
9																	
10	6 40	10.1	7.6	5.9	5.6	28	150	130	. .	985	930	50.7	6 43 15.6	. .	+ 7.0	57 49 43.8	− 1.2
11	10 30	10.5	7.8	4.3	6.5	28	374	294	. .	180	128	50.8	10 33 12.5	. .	+ 11.1	61 39 44.8	0.0
12	11 44	5.4	3.7	0.9	2.1	27	630	560	. .	415	392	50.8	11 47 28.1	. .	+ 12.5	62 54 1.8	− 0.3
13																	
14	307 46	5.6	2.2	29.0	2.4	26	300	. .	365	. .	. .	50.8	307 49 46.3	. .	− 1 17.0	358 54 50.5	+ 0.9
15	296 10	3.8	1.0	29.0	1.7	23	280	315	. .	. .	. .	50.8	296 14 33.5	720	− 2 1.0	347 18 53.7	+ 2.5
16																	
17	31 56	5.0	3.0	29.8	1.5	27	456	430	. .	285	280	50.9	31 59 30.8	. .	+ 37.5	83 6 29.5	+ 1.1
18	298 54	3.0	0.1	27.9	0.5	21	565	. .	. .	. .	510	50.9	298 59 1.3	. .	− 1 48.0	350 3 34.5	+ 1.0
19	320 30	9.9	7.5	5.2	6.5	24	. .	. .	. .	530	484	51.3	320 34 9.8	738	− 49.4	11 39 41.6	− 1.1
20	38 46	9.0	6.5	3.1	5.1	26	. .	885	. .	773	. .	51.3	38 49 35.7	. .	+ 48.4	89 56 45.3	+ 1.0
21	61 28	8.3	6.3	4.4	5.3	23	202	106	. .	035	951	51.4	61 32 32.2	. .	+ 1 50.7	112 40 41.1	+ 2.6
22	314 44	2.0	29.0	26.9	28.6	28	. .	770	. .	770	. .	51.4	314 47 13.1	. .	− 1 0.6	5 52 33.7	−19.8
23	314 44	2.0	29.0	26.9	28.6	27	. .	558	. .	458	. .	51.4	314 47 32.6	. .	− 1 0.6	5 52 52.2	− 1.3
24	307 28	5.8	3.6	0.6	3.1	25	420	450	382	436	400	51.5	307 32 0.0	. .	− 1 18.3	358 37 2.9	+ 1.2
25	49 18	2.1	29.2	26.6	29.2	27	. .	. .	. .	783	715	51.5	49 21 27.3	. .	+ 1 10.1	100 28 58.6	+ 0.7
26	43 24	4.7	2.2	0.3	2.6	22	895	675	608	596	512	51.5	43 28 43.2	. .	+ 57.1	94 36 1.5	
27	19 46	5.5	3.8	1.1	1.6	24	047	980	. .	845	812	51.5	19 50 23.5	750	+ 21.8	70 57 6.5	+ 1.5
28	45 32	27.3	26.9	23.7	27.0	22	020	. .	. .	. .	940	50.2	45 36 58.3	. .	+ 1 1.1	96 44 20.6	
29	45 32	27.3	26.9	23.7	27.0	25	. .	113	. .	988	. .	50.2	45 36 11.4	. .	+ 1 1.1	96 43 33.7	
30	49 34	26.0	26.1	23.0	26.0	24	213	278	. .	218	187	50.2	49 38 25.0	690	+ 1 10.0	100 45 56.2	
31	24 18	29.7	28.8	24.6	27.3	21	. .	. .	. .	681	710	50.2	24 23 0.4	685	+ 27.0	75 29 48.6	+ 2.4
32	39 30	24.8	20.0	22.7	25.4	22	480	490	. .	. .	. .	50.2	39 34 54.3	634	+ 48.6	90 42 4.1	
33	38 58	19.6	14.5	20.4	21.0	23	. .	. .	. .	215	140	50.2	39 2 46.8	. .	+ 47.7	90 9 55.7	
34	310 14	23.6	22.5	19.4	23.5	27	000	918	895	890	891	50.2	310 17 47.1	630	− 1 9.2	1 22 59.1	+ 0.6
35	15 58	26.6	25.6	21.4	24.5	23	194	188	. .	018	010	50.7	16 2 43.7	632	+ 16.9	67 9 21.8	+ 2.6
36	27 38	0.3	26.7	23.7	26.6	26	. .	512	. .	390	. .	51.2	27 41 50.2	735	+ 31.6	78 48 43.0	+ 0.4
37	316 56	1.8	27.7	25.0	28.2	23	800	565	. .	. .	. .	51.2	317 0 36.4	. .	− 56.0	8 6 1.2	+ 0.9
38	46 54	1.6	28.9	26.1	29.4	23	. .	590	. .	588	. .	51.2	46 58 32.1	. .	+ 1 4.4	98 5 57.7	+ 0.8
39	14 28	28.0	25.7	22.8	26.0	29	. .	290	. .	155	. .	51.2	14 31 9.5	740	+ 15.6	65 37 46.3	+ 0.9
40	291 56	29.2	26.2	22.4	27.0	21	020	181	. .	. .	. .	51.2	291 1 12.3	745	− 2 27.9	343 5 5.6	+ 2.8
41	26 12	3.9	0.2	27.5	0.0	21	. .	170	. .	020	. .	51.2	26 17 8.9	. .	+ 29.8	77 23 59.9	+ 0.4
42	333 4	28.7	25.6	23.2	26.0	22	. .	. .	. .	860	910	51.2	333 8 46.0	. .	− 30.5	14 14 36.7	+ 0.1
43	28 50	1.0	27.4	24.9	28.2	22	. .	. .	. .	950	925	51.2	28 54 42.2	750	+ 33.3	80 1 36.7	− 0.3
44	27 34	3.5	0.4	26.5	29.2	20	. .	730	. .	605	. .	51.2	27 39 15.9	. .	+ 31.6	78 46 8.7	+ 0.1
45	17 36	3.4	0.5	27.0	29.5	28	. .	590	. .	450	. .	51.2	17 39 15.7	. .	+ 19.2	68 45 56.1	− 0.2
46	52 52	0.2	27.6	24.4	28.2	22	. .	103	. .	980	. .	51.2	52 56 57.1	. .	+ 1 19.8	104 4 38.1	0.0
47	35 14	27.0	24.0	20.8	24.4	23	. .	235	. .	080	. .	51.2	35 18 43.7	758	+ 42.8	86 25 47.7	+ 0.4
48	320 30	1.4	28.2	25.2	28.6	25	. .	. .	382	. .	. .	54.2	320 34 8.3	765	− 49.7	11 39 39.8	− 2.4
49	359 48	27.0	24.1	20.6	24.0	24	. .	. .	. .	245	255	54.2	359 52 29.4	. .	− 0.2	50 8 50.4	− 0.1

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
4	. .	. .	44.0
32	. .	. .	48.0
36	. .	. .	32.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ′
2	− 5.7	. . .	0.0	− 5.7
4	− 5.6	+ 16 4.4	. .	+ 15 58.8
5	− 5.6	− 16 4.4	. .	− 16 10.1
8	− 0.1	. . .	. .	− 0.1
26	−41 54.4	+ 16 40.9	− 3.4	− 25 16.9
28	− 17.8	− 23.6	+ 0.3	− 41.1
29	− 17.8	+ 23.6	. .	+ 5.8
30	− 5.9	. . .	. .	− 5.9
32	− 5.6	− 16 4.2	. .	− 16 9.8
33	− 5.6	+ 16 4.2	. .	+ 15 58.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSITS OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 19	1	θ Virginis	Ha.	14.2	16.7	18.2	24.2	26.2	28.3	34.6	36.0	38.6	3 26.33	− 0.38	−11.78	−11.86	13 3 14.09	− 0.12
	2	Polaris, S. P..	Ha.	. .	. .	35.0	12.0	46.0	24.0	57.0	. .	. .	10 46.48	− 0.60	. .	−11.86	1 10 34.02	− 1.20
	3	Moon II, S.	Ha.	53.4	55.9	57.7	4.0	6.1	8.2	14.5	16.3	18.7	32 6.09	− 0.39	. .	−11.84	14 31 53.96	−69.99
21	4	δ Leonis	F.	10.6	13.4	15.0	21.5	23.7	26.0	32.6	34.2	36.9	7 23.77	− 0.26	−11.09	−11.08	11 7 12.43	− 0.05
	5	τ Leonis	F.	15.0	17.6	19.0	25.3	27.4	29.4	35.5	37.0	39.5	21 27.30	− 0.22	−11.05	−11.08	11 21 16.00	− 0.05
	6	γ Cephei, S. P.	F.	2.3	44.0	26.2	17.2	7.9	59.5	50.3	32.6	14.0	34 8.22	+ 0.52	. .	−11.08	23 33 56.66	+ 0.60
	7	β Leonis	F.	25.2	27.9	29.5	35.8	38.0	40.1	46.5	47.8	50.4	42 37.91	− 0.25	−11.06	−11.08	11 42 26.58	0.00
	8	β Corvi	F.	32.8	35.6	37.3	43.8	46.0	48.4	54.8	56.6	59.4	27 46.08	− 0.16	−11.06	−11.06	12 27 34.86	− 0.04
	9	21 Cassiopeæ, S. P.	F.	49.0	43.4	28.3	20.5	13.0	5.6	58.4	42.9	37.2	37 13.14	+ 0.41	. .	−11.06	0 37 2.49	+ 0.26
	10	Pandora	F.	52.5	54.5	55.9	. .	. .	. .	13.0	14.7	17.0	52 4.58	− 0.19	. .	−11.05	12 52 53.34	. .
	11	Themis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	12	Polaris, S. P.	F.	. .	. .	27.0	3.0	40.0	16.0	50.0	. .	. .	10 38.88	+ 6.38	. .	. .	. . . .	. .
	13	38 Cassiopeæ, S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	14	Venus I, S.	Ha.	1.6	4.2	5.8	11.9	14.0	16.0	22.2	23.9	26.3	52 13.99	− 0.17	. .	−10.77	21 52 3.05	− 1.53
	15	Venus N.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	16	Mercury, (center)	Ha.	46.4	48.8	50.6	56.6	58.9	0.9	7.2	8.6	11.4	58 58.82	− 0.16	. .	−10.75	22 58 47.91	− 0.03
22	17	Sun I, S.	Ha.	50.2	52.4	54.3	0.2	2.3	4.3	10.5	12.0	14.4	6 2.29	− 0.18	. .	−10.73	0 5 51.38	. .
	18	Sun II, N.	Ha.	58.8	1.3	3.0	9.1	11.3	13.4	19.4	20.8	23.5	8 11.18	− 0.18	. .	−10.73	0 8 0.27	. .
	19	Polaris	Ha.	. .	. .	. .	26.0	48.0	. .	. .	. .	. .	10 49.75	− 4.62	. .	−10.72	1 10 34.41	− 0.40
	20	δ Geminorum	Ha.	19.0	21.8	23.6	30.1	32.3	34.5	41.1	42.8	45.5	12 32.30	− 0.23	−10.63	−10.61	7 12 21.46	− 0.03
	21	α Geminorum	Ha.	14.4	17.6	19.5	26.6	29.0	31.4	38.6	40.5	43.4	26 29.00	− 0.25	−10.57	−10.61	7 26 18.14	+ 0.20
	22	α Canis Minoris	Ha.	28.4	30.8	32.5	38.6	40.6	42.7	48.8	50.4	52.9	32 40.63	− 0.20	−10.61	−10.61	7 32 29.82	− 0.14
	23	φ Geminorum	Ha.	29.5	32.5	34.2	41.0	43.3	45.6	52.5	54.2	57.0	45 43.31	− 0.23	−10.62	−10.60	7 45 32.48	− 0.06
	24	ζ Cygni	E.	19.8	22.7	24.5	31.6	33.9	36.1	43.2	45.0	48.0	7 33.87	− 0.13	−10.64	−10.60	21 7 23.14	+ 0.05
	25	α Cephei	E.	11.7	17.2	20.4	33.4	37.6	42.1	55.2	58.4	3.8	15 37.76	− 0.36	. .	−10.59	21 15 26.81	+ 0.02
	26	β Cephei	E.	. .	. .	. .	. .	. .	. .	31.1	35.6	43.0	27 7 75	− 0.53	. .	−10.59	21 26 56.63	+ 0.62
	27	ε Pegasi	E.	. .	. .	53.6	55.7	57.8	59.8	1.9	. .	. .	37 57.77	− 0.06	−10.84	−10.59	21 37 47.12	+ 0.26
	28	α Pegasi	E.	13.8	16.4	18.0	24.3	26.5	28.7	34.8	36.4	39.0	58 26.43	− 0.08	−10.58	−10.55	22 58 15.80	+ 0.06
23	29	Polaris	E.	. .	. .	6.0	27.5	54.0	19.5	39.5	. .	. .	10 53.62	− 7.61	. .	−10.51	1 10 35.50	+ 0.84
	30	α Arietis	E.	46.8	49.6	51.4	57.9	0.1	2.3	9.0	10.9	13.3	0 0.12	− 0.10	−10.48	−10.49	1 59 49.53	0.00
	31	β Ursæ Minoris, S.P.	E.	6.3	56.8	50.6	27.9	20.4	12.3	48.8	43.4	33.1	51 19.96	− 0.14	. .	−10.47	14 51 9.35	− 0.34
	32	α Ceti	E.	26.3	28.8	30.3	36.4	38.4	40.4	46.7	48.2	50.8	55 38.48	− 0.04	−10.50	−10.47	2 55 27.97	+ 0.05
	33	κ Ophiuchi	E.	28.9	31.4	33.0	39.2	41.3	43.4	49.6	51.2	53.6	51 41.29	− 0.06	−10.10	−10.18	16 51 31.05	− 0.04
	34	d Herculis	E.	44.2	47.3	49.0	56.4	58.8	1.2	8.5	10.5	13.5	56 58.82	− 0.15	. .	−10.18	16 56 48.49	− 0.06
	35	ε Ursæ Minoris	E.	. .	. .	6.0	21.0	36.1	51.2	5.8	. .	. .	59 36.08	− 1.42	. .	−10.18	16 59 24.48	− 1.51
	36	α Herculis	E.	41.0	43.5	45.1	51.5	53.6	55.7	1.8	3.5	6.0	8 53.52	− 0.08	−10.09	−10.18	17 8 43.26	− 0.08
	37	44 Ophiuchi	E.	22.7	25.5	27.2	33.9	36.0	38.2	45.0	46.7	49.5	18 36.08	+ 0.03	−10.12	−10.18	17 18 25.93	− 0.04
	38	α Ophiuchi	E.	51.7	54.2	55.7	2.1	4.1	6.2	12.5	14.1	16.7	29 4.14	− 0.07	−10.02	−10.17	17 28 53.90	− 0.12
	39	ω Draconis	E.	19.9	27.0	31.1	47.9	53.5	58.9	16.1	20.4	27.3	37 53.57	− 0.49	. .	−10.17	17 37 42.91	− 0.54
	40	μ Herculis	E.	18.6	21.5	23.3	30.2	32.5	34.8	41.6	43.3	46.6	41 32.49	− 0.12	−10.10	−10.16	17 41 22.21	− 0.06
	41	γ Draconis	E.	26.0	30.0	32.6	42.4	45.7	49.0	58.8	1.2	5.4	53 45.68	− 0.25	. .	−10.16	17 53 35.27	− 0.19
	42	γ^2 Sagittarii	E.	23.3	26.3	27.9	35.0	37.3	39.5	46.8	48.7	51.6	57 37.38	− 0.04	−10.09	−10.16	17 57 27.18	− 0.06
	43	μ^1 Sagittarii	E.	. .	. .	4.9	7.1	9.2	11.4	13.5	. .	. .	6 9.25	+ 0.03	−10.18	−10.16	18 5 59.10	− 0.08
	44	δ Ursæ Minoris	E.	. .	. .	21.5	56.0	31.5	5.0	39.5	. .	. .	14 30.82	− 3.15	. .	−10.16	18 14 17.51	− 0.94
	45	Moon II	E.	1.2	4.1	5.8	12.5	14.7	17.0	23.8	25.5	28.4	32 14.78	+ 0.03	. .	−10.15	18 32 4.66	−70.29
	46	β Lyræ	E.	12.2	15.1	17.1	24.2	26.6	29.1	36.5	38.5	41.4	45 26.74	− 0.14	−10.14	−10.14	18 45 16.46	+ 0.01
	47	ε Pegasi	F.	44.7	47.2	48.7	55.0	57.1	59.1	5.3	6.8	9.4	37 57.03	− 0.22	− 9.93	− 9.99	21 37 46.92	+ 0.04
	48	Mercury II,(center)	F.	1.3	3.9	5.4	11.8	14.0	16.0	22.0	23.6	26.0	11 13.78	− 0.21	. .	− 9.96	23 11 3.61	− 0.19

6, 9, 31. Bisections at sets B and D.
10, 11. Wire A used.
29. Telescope micrometer increased one revolution in reductions.
35. Bisections at sets C_{1-5}.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	43 40	0.5	27.4	23.9	28.8	28	412	390	. .	. .	. .	54.2	43 43 23.9	. .	+ 57.9	94 50 43.0	— 0.6
2	307 28	1.5	29.0	25.2	29.5	25	798	870	920	891	910	54.2	307 32 0.1	770	— 1 18.7	358 37 2.6	+ 1.3
3	49 30	0.2	27.0	24.0	27.0	27	1100	830	. .	210	988	54.2	49 33 36.6	772	+ 1 10.2	100 41 8.0	
4	17 36	10 18.4	16.2	9.5	12.4	27	974	934	. .	804	780	56.9	17 39 17.4	626	+ 18.7	68 45 57.3	+ 1.2
5	35 14	9.7	9.0	1.5	3.1	22	. .	600	. .	480	. .	56.9	35 18 47.0	. .	+ 41.5	86 25 49.7	+ 2.4
6	295 46	8.0	6.6	28.8	2.7	25	. .	766	. .	816	. .	56.9	295 49 58.8	. .	— 2 0.6	346 54 19.4	+ 0.4
7	23 32	10.1	7.8	0.6	2.7	28	212	064	. .	962	905	56.9	23 35 23.6	. .	+ 25.6	74 42 10.4	+ 0.9
8	61 28	7.0	6.4	29.5	2.3	23	. .	. .	. .	385	335	56.9	61 32 35.2	. .	+ 1 47.9	112 40 44.3	+ 2.3
9	293 8	12.0	9.7	3.5	6.3	23	470	548	. .	. .	. .	56.9	293 12 30.3	. .	— 2 16.2	344 16 35.3	+ 2.3
10	44 20	7.2	5.2	28.4	2.1	30	. .	. .	. .	158	138	56.9	44 25 26.9	. .	+ 57.5	95 32 45.6	— 2.8
11	44 34	8.7	6.6	0.7	3.5	31	. .	. .	. .	196	170	56.9	44 39 9.4	. .	+ 58.0	95 46 28.6	— 3.3
12	307 28	4.0	3.0	26.0	0.0	26	150	092	138	148	106	56.9	307 31 57.1	. .	— 1 16.4	358 37 1.9	+ 1.3
13	288 28	7.4	5.6	29.0	2.4	25	. .	000	. .	816	. .	56.9	288 32 12.2	638	— 2 53.6	339 35 39.8	+ 0.5
14	45 52	2.5	3.5	26.0	0.8	17	370	. .	. .	. .	030	56.9	45 58 13.4	572	+ 59.9	97 5 34.5	
15	45 52	2.5	3.5	26.0	0.8	20	. .	310	. .	120	. .	56.9	45 57 27.5	. .	+ 59.9	97 4 48.6	
16	47 50	4.1	5.4	28.5	2.0	23	385	298	. .	292	320	56.9	47 54 38.2	570	+ 1 4.1	99 2 3.5	
17	38 20	4.4	3.7	25.5	0.0	26	335	300	. .	. .	. .	56.9	38 23 54.8	550	+ 45.7	89 31 1.7	
18	37 48	3.2	2.5	25.8	0.0	26	. .	. .	. .	615	606	56.9	37 51 49.6	. .	+ 44.8	88 58 55.6	
19	310 14	2.4	3.5	26.1	0.4	26	. .	845	790	. .	. .	56.9	310 17 46.8	515	— 1 7.4	1 23 0.6	+ 1.1
20	16 36	7.2	6.0	28.9	1.0	24	. .	780	. .	680	. .	56.9	16 46 16.1	612	+ 17.5	67 52 54.8	+ 1.2
21	6 40	7.1	6.5	29.2	1.0	28	. .	. .	. .	541	532	56.9	6 43 16.8	. .	+ 6.9	57 49 44.9	+ 0.2
22	33 16	6.0	5.4	28.6	0.9	26	. .	645	. .	552	. .	56.9	33 19 48.1	. .	+ 38.5	84 26 47.8	+ 0.4
23	11 44	6.0	6.4	29.3	1.2	27	. .	880	. .	750	. .	56.9	11 47 29.1	625	+ 12.2	62 54 2.5	+ 0.7
24	9 8	2.7	1.8	27.5	0.0	25	. .	912	. .	824	. .	56.8	9 12 1.5	. .	+ 9.6	60 18 32.3	+ 1.6
25	336 48	5.3	4.7	29.7	1.5	25	. .	091	. .	982	. .	56.8	336 52 12.3	665	— 25.3	27 28 8.2	— 0.3
26	328 50	1.3	0.3	24.3	28.8	21	. .	. .	. .	980	940	56.7	328 55 2.7	. .	— 35.7	20 0 48.2	— 1.5
27	29 32	0.0	0.7	24.0	28.5	24	508	468	. .	. .	. .	56.7	29 36 25.8	. .	+ 33.6	80 43 20.6	+ 0.6
28	24 18	3.2	3.8	27.7	0.8	22	. .	. .	. .	000	890	56.7	24 22 59.3	. .	+ 26.7	75 29 47.2	+ 0.8
29	310 14	7.5	7.2	2.7	4.8	25	475	485	470	450	460	56.6	310 17 47.1	618	— 1 9.0	1 22 59.3	— 0.5
30	15 58	5.4	6.0	29.4	1.8	23	055	980	. .	915	880	56.5	16 2 43.1	. .	+ 16.8	67 9 21.1	+ 1.5
31	293 32	2.8	2.0	27.5	0.5	22	. .	390	345	300	. .	56.5	293 36 54.5	. .	— 2 12.5	344 41 3.2	+ 2.3
32	35 14	2.8	1.5	27.5	29.5	24	. .	265	. .	108	. .	56.5	35 18 27.0	. .	+ 41.2	86 25 29.4	— 0.4
33	29 14	5.0	4.0	28.4	1.5	24	. .	202	. .	090	. .	55.9	29 18 25.1	. .	+ 34.3	80 25 20.6	— 0.4
34	5 4	0.1	1.8	23.4	26.0	25	. .	172	. .	052	. .	55.9	5 8 14.9	. .	+ 5.5	56 14 41.6	— 1.0
35	316 36	3.5	2.0	27.6	0.7	25	. .	855	840	825	. .	55.9	316 40 0.4	. .	— 57.6	7 45 24.0	— 1.9
36	24 16	4.8	3.2	27.2	1.2	22	. .	410	. .	325	. .	55.9	24 20 52.9	. .	+ 27.7	75 27 41.8	— 0.2
37	62 50	0.6	1.4	23.8	28.6	23	. .	170	. .	005	. .	55.8	62 54 44.6	. .	+ 1 59.1	114 3 4.9	0.0
38	26 10	5.0	3.3	27.5	0.5	26	. .	410	. .	340	. .	55.8	26 13 51.6	. .	+ 30.1	77 20 42.9	— 0.5
39	330 2	3.8	1.5	26.0	29.5	28	. .	270	. .	145	. .	55.8	330 5 25.7	. .	— 35.2	21 11 11.7	— 2.7
40	11 2	1.2	0.5	24.7	28.0	27	. .	090	. .	040	. .	55.8	11 5 44.1	. .	+ 12.0	62 12 17.3	+ 0.1
41	347 20	1.1	28.0	22.3	26.8	26	. .	915	. .	835	. .	55.8	347 23 48.8	. .	— 13.7	38 29 56.3	— 1.7
42	69 12	1.1	29.5	24.5	28.7	25	. .	190	. .	100	. .	55.8	69 16 13.3	. .	+ 2 40.6	120 25 15.9	+ 0.1
43	59 52	3.8	1.0	26.2	1.3	20	. .	. .	. .	900	875	55.8	59 57 15.0	. .	+ 1 45.5	111 5 21.7	+ 0.4
44	312 14	1.5	29.4	24.8	28.0	23	535	550	540	550	530	55.8	312 18 38.1	. .	— 1 7.2	3 23 52.1	— 2.5
45																	
46	5 36	3.0	1.0	26.2	28.7	22	. .	200	. .	145	. .	55.8	5 40 57.8	820	+ 6.1	56 47 25.1	— 0.9
47	29 32	3.2	1.7	28.0	29.6	24	417	348	. .	255	224	55.6	29 36 23.9	742	+ 34.2	80 43 19.3	— 0.7
48	46 36	9 26.0	26.1	21.4	25.8	28	830	735	. .	726	672	55.6	46 39 21.8	694	+ 1 3.1	97 46 46.1	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
3	. .	. .	28.0
17	. .	. .	56.0
25	. .	. .	45.0
29	. .	. .	49.0
46	. .	. .	30.0

For a summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	—46 1.7	— 16 34.2	. . .	— 62 35.9
14	— 17.0	— 23.1	+ 0.3	— 39.8
15	— 17.0	+ 23.1	. . .	+ 6.1
16	— 5.3	. . .	0.0	— 5.3
17	— 5.5	— 16 3.0	. . .	— 16 8.5
18	— 5.4	+ 16 3.0	. . .	+ 15 57.6
48	— 5.1	. .	0.0	— 5.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h m. s.	s.
Mar. 24	1	Sun I, N.	F.	5.7	8.0	9.6	15.6	17.8	19.8	25.9	27.5	30.0	13 17.77	− 0.21	. .	− 9.93	0 13 7.63	. .
	2	Sun II, S.	F.	. .	. .	23.6	24.5	26.6	28.7	30.8	. .	. .	15 26.85	− 0.21	. .	− 9.93	0 15 16.71	. .
	3	Polaris	F.	. .	. .	59.0	24.0	49.0	12.0	37.0	. .	. .	10 48.52	− 3.98	. .	− 9.81	1 10 34.73	+ 0.25
	4	α Persei	F.	53.0	57.0	59.2	8.8	11.7	14.9	24.4	26.8	30.5	15 11.81	− 0.29	. .	− 9.86	3 15 1.66	+ 0.11
	5	η Tauri	F.	41.1	44.0	45.6	52.3	54.7	57.0	3.5	5.2	8.0	39 54.60	− 0.23	− 9.90	− 9.85	3 39 44.52	+ 0.05
	6	α Leonis	F.	24.9	27.5	29.0	35.3	37.4	39.5	45.7	47.3	49.8	1 37.38	− 0.19	− 9.67	− 9.69	10 1 27.50	− 0.07
	7	32 Ursæ Majoris	F.	15.9	22.2	25.8	40.6	45.6	50.6	5.5	9.1	15.0	8 45.59	− 0.37	. .	− 9.69	10 8 35.53	− 0.04
	8	γ^1 Leonis	F.	45.9	48.5	50.1	56.6	58.8	0.9	7.5	9.1	11.8	12 58.80	− 0.23	− 9.68	− 9.69	10 12 48.88	− 0.03
	9	9 Draconis	F.	20.3	30.7	36.9	3.2	11.4	20.3	46.2	53.0	3.7	24 11.74	− 0.54	. .	− 9.68	10 24 1.52	− 0.34
	10	*l* Leonis	F.	23.5	26.2	27.8	33.9	36.0	38.2	44.3	45.9	48.6	42 36.04	− 0.22	− 9.64	− 9.68	10 42 26.14	− 0.04
	11	α Ursæ Majoris	F.	26.2	31.8	35.0	48.3	52.7	57.0	10.3	13.7	19.3	55 52.70	− 0.35	. .	− 9.67	10 55 42.68	− 0.14
	12	δ Leonis	F.	9.2	12.1	17.9	20.2	22.2	24.4	26.6	32.6	35.4	7 22.29	− 0.23	− 9.64	− 9.67	11 7 12.39	− 0.09
	13	δ Crateris	F.	48.9	51.7	53.1	59.4	1.5	3.6	9.9	11.5	14.1	13 1.52	− 0.21	− 9.73	− 9.67	11 12 51.64	+ 0.03
	14	τ Leonis	F.	13.6	16.0	17.8	23.8	25.8	27.9	34.0	35.5	38.2	21 25.84	− 0.21	− 9.60	− 9.66	11 21 15.97	− 0.08
	15	υ Leonis	F.	16.4	18.8	20.4	26.6	28.4	30.5	36.3	37.9	40.7	30 28.44	− 0.21	− 9.70	− 9.66	11 30 18.57	+ 0.01
	16	γ Ursæ Majoris	F.	49.2	53.6	56.2	6.7	10.5	13.9	24.4	27.0	31.5	47 10.33	− 0.30	. .	− 9.65	11 47 0.38	− 0.08
	17	η Virginis	F.	14.2	16.5	18.2	24.2	26.3	28.2	34.5	35.9	38.4	13 26.27	− 0.21	− 9.76	− 9.64	12 13 16.42	+ 0.09
	18	β Corvi	F.	31.4	34.2	35.8	42.5	44.5	46.8	53.5	55.2	58.0	27 44.66	− 0.20	− 9.57	− 9.64	12 27 34.82	− 0.10
	19	Themis	F.	7.0	9.2	11.0	16.8	19.0	21.4	26.8	28.9	31.4	57 19.06	− 0.21	. .	− 9.62	12 57 9.23	. .
	20	Polaris, S. P.	F.	. .	. .	29.0	5.0	42.0	17.0	54.0	. .	. .	10 41.08	+ 3.67	. .	− 9.62	1 10 35.13	+ 0.75
	21	η Bootis	F.	27.5	30.0	31.6	38.2	40.3	42.5	48.9	50.5	53.4	48 40.32	− 0.23	− 9.50	− 9.60	13 48 30.49	− 0.15
	22	δ Aquilæ	F.	53.6	56.1	57.6	3.8	5.8	7.8	13.9	15.5	18.0	19 5.79	− 0.22	− 9.52	− 9.47	19 18 56.10	+ 0.11
	23	Moon II	F.	33.9	36.7	38.5	45.2	47.3	49.6	56.4	58.1	1.0	30 47.41	− 0.20	. .	− 9.47	19 30 37.74	−69.16
	24	γ Aquilæ	F.	1.4	3.9	5.4	11.8	13.8	15.9	22.1	23.6	26.1	40 13.78	− 0.22	− 9.46	− 9.46	19 40 4.10	+ 0.03
	25	α Aquilæ	F.	. .	. .	. .	. .	. .	. .	43.6	45.2	47.8	44 35.39	− 0.22	− 9.42	− 9.46	19 44 25.71	0.00
	26	β Aquilæ	F.	52.5	55.0	56.5	2.6	4.6	6.8	12.9	14.3	17.0	49 4.64	− 0.22	− 9.54	− 9.46	19 48 55.01	+ 0.11
	27	Venus I, N.	Ha.	0.4	2.8	4.6	10.8	12.8	14.8	20.8	22.4	25.0	56 12.71	− 0.16	. .	− 9.30	21 56 3.25	− 1.45
	28	Venus, S. L.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	29	Mercury, (center)	Ha.	13.0	15.6	17.2	23.4	25.5	27.6	33.5	35.2	37.9	17 25.43	− 0.16	. .	− 9.27	23 17 16.00	− 0.03
25	30	Sun I, S.	Ha.	43.0	45.6	47.1	53.2	55.2	57.1	3.5	4.9	7.6	16 55.24	− 0.17	. .	− 9.25	0 16 45.82	. .
	31	Sun II, N.	Ha.	51.7	54.2	55.9	2.0	4.0	6.1	12.2	13.7	16.4	19 4.02	− 0.17	. .	− 9.25	0 18 54.60	. .
	32	Polaris	Ha.	. .	. .	57.0	21.0	46.0	11.0	36.0	. .	. .	10 46.52	− 2.79	. .	− 9.23	1 10 34.50	+ 0.23
	33	α Arietis	Ha.	45.6	48.3	50.1	56.7	58.9	1.1	7.7	9.4	12.4	59 58.91	− 0.19	− 9.20	− 9.21	1 59 49.51	− 0.01
	34	α Ceti	Ha.	25.1	27.7	29.2	35.4	37.4	39.4	45.4	47.0	49.6	55 37.36	− 0.17	− 9.27	− 9.20	2 55 27.99	+ 0.09
	35	α Persei	Ha.	52.3	56.2	58.5	8.0	11.1	14.2	23.5	26.0	29.9	15 11.08	− 0.23	. .	− 9.19	3 15 1.66	+ 0.13
	36	Uranus, (centêr)	Ha.	43.2	45.9	47.6	54.1	56.3	58.7	5.2	6.9	9.7	17 56.40	− 0.19	. .	− 9.11	7 17 47.10	. .
	37	λ Ursæ Minoris, S.P.	Ha.	. .	. .	43.0	57.0	7.0	21.0	35.0	. .	. .	54 8.20	+ 3.27	. .	− 9.09	19 54 2.38	+ 0.40
	38	κ Cephei, S. P.	Ha.	15.8	4.4	57.6	39.1	20.3	1.8	43.5	36.1	24.8	13 20.38	+ 0.16	. .	− 9.09	20 13 11.45	+ 0.30
	39	Groom. 3241, S. P.	Ha.	20.3	11.7	6.9	46.6	40.1	33.6	13.9	8.9	0.5	30 40.28	+ 0.06	. .	− 9.08	20 30 31.26	+ 0.26
	40	ε Hydræ	Ha.	50.8	53.2	54.9	1.0	3.0	5.0	11.3	12.8	15.4	40 3.04	− 0.17	− 9.03	− 9.08	8 39 53.79	− 0.10
	41	12-y'r.Cat.1879,S.P.	Ha.	40.7	25.6	17.4	40.7	29.8	17.7	42.5	34.0	18.4	53 29.64	+ 0.23	. .	− 9.08	20 53 20.79	+ 0.11
	42	κ Cancri	Ha.	39.6	42.0	43.6	49.9	52.0	54.0	0.0	1.8	4.2	0 51.90	− 0.18	− 8.99	− 9.07	9 0 42.65	− 0.09
	43	α Hydræ	Ha.	9.6	12.1	13.8	19.9	21.9	24.0	30.1	31.6	34.3	21 21.92	− 0.16	− 9.17	− 9.07	9 21 12.69	+ 0.07
	44	ε Leonis	Ha.	24.5	27.4	29.0	35.7	38.0	40.2	46.9	48.7	51.3	38 37.97	− 0.19	− 9.04	− 9.07	9 38 28.71	− 0.08
	45	μ Leonis	Ha.	18.3	21.0	22.7	29.6	31.9	34.3	41.0	42.7	45.5	45 31.89	− 0.19	− 9.09	− 9.07	9 45 22.63	+ 0.01
30	46	Sun I, S.	F.	51.3	53.9	55.4	1.6	3.7	5.7	12.0	13.4	16.0	35 3.67	− 0.06	. .	− 7.26	0 34 56.35	. .
	47	Sun II, N.	F.	0.2	2.8	4.4	10.5	12.5	14.6	20.8	22.4	25.0	37 12.58	− 0.06	. .	. .	. . . .	. .
	48	Polaris	F.	. .	. .	59.0	24.0	47.0	11.0	34.0	. .	. .	10 47.32	− 7.12	. .	− 7.25	1 10 32.95	. .
	49	β Arietis	F.	23.0	24.9	29.2	31.4	33.6	35.8	38.0	42.3	44.0	47 33.58	− 0.11	− 7.18	− 7.24	1 47 26.23	− 0.04
	50	α Arietis	F.	43.5	46.3	48.0	54.6	56.8	59.0	5.7	7.3	10.1	59 56.81	− 0.12	− 7.19	− 7.24	1 59 49.45	− 0.04

7, 9. Bisections at sets B and D.
19. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan's Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	37 0	9 27.0	23.6	20.8	25.0	24	078	060	. .	. .	. .	55.6	37 4 34.7	. .	+ 44.7	88 11 40.6	
2	37 32	9 28.0	25.8	23.0	26.5	23	. .	. .	. .	460	395	55.6	37 36 41.5	666	+ 45.6	88 43 48.3	
3	310 14	9 24.3	21.7	17.0	23.1	27	210	160	130	096	210	55.6	310 17 49.5	650	− 1 9.5	1 23 1.2	+ 1.2
4	349 26	10 1.0	29.5	26.5	27.5	25	. .	900	. .	776	. .	55.6	349 30 2.9	. .	− 10.9	40 36 13.2	− 0.7
5	15 8	9 27.4	26.8	21.5	24.5	28	592	. .	. .	. .	475	55.6	15 11 25.1	622	+ 15.9	66 18 2.2	+ 0.5
6	26 12	10 5.5	1.9	26.6	28.4	21	. .	380	. .	226	. .	55.6	26 17 9.8	770	+ 29.9	77 24 0.9	+ 1.6
7	333 4	9 26.5	23.5	18.4	20.9	23	. .	518	. .	444	. .	55.6	333 8 45.0	. .	− 30.7	24 14 35.5	+ 0.1
8	18 20	0.9	28.0	22.8	24.8	28	. .	215	. .	112	. .	55.6	18 23 29.0	773	+ 20.2	69 30 10.4	+ 0.4
9	322 28	10 4.1	1.7	27.2	28.6	28	100	148	. .	050	100	55.6	322 31 26.3	. .	− 46.5	13 37 1.0	− 0.2
10	27 34	1.5	28.5	22.4	25.0	20	. .	. .	. .	942	952	55.6	27 39 17.9	780	+ 31.8	78 46 10.9	+ 2.5
11	336 22	1.6	29.5	23.8	25.4	22	670	580	. .	470	452	55.6	336 26 54.9	. .	− 26.5	27 32 49.6	− 0.1
12	17 36	2.0	28.8	23.4	25.9	28	935	926	. .	860	703	55.6	17 39 17.6	. .	+ 19.3	68 45 58.1	+ 2.3
13	52 52	2.0	29.7	24.8	26.7	21	. .	. .	. .	978	950	55.6	52 57 0.7	. .	+ 1 20.4	104 4 42.3	+ 3.7
14	35 14	9 29.6	26.9	21.6	25.0	23	350	365	. .	290	152	55.6	35 18 44.3	. .	+ 43.1	86 25 48.6	+ 1.3
15	38 54	9 28.6	26.2	20.9	23.3	21	080	. .	. .	. .	905	55.6	38 59 20.4	788	+ 49.2	90 6 30.8	+ 2.3
16	344 24	9 29.0	26.0	20.8	22.6	22	. .	. .	. .	612	566	55.6	344 28 55.7	790	− 16.9	35 35 0.0	+ 2.0
17	38 46	1.4	29.4	24.3	26.5	27	. .	. .	. .	545	525	55.6	38 49 36.1	. .	+ 49.0	89 56 46.3	+ 1.8
18	61 28	1.4	29.1	24.3	26.5	24	. .	. .	. .	022	996	55.6	61 32 29.9	798	+ 1 52.1	112 40 43.2	+ 0.7
19	44 20	2.6	0.6	25.2	27.4	26	. .	960	. .	920	. .	55.6	44 26 19.6	. .	+ 1 0.6	95 33 41.4	− 3.3
20	307 28	0.6	29.1	23.0	26.5	26	202	210	235	208	140	55.5	307 31 58.0	. .	− 1 19.3	358 36 59.9	0.0
21	19 46	2.5	0.8	25.5	27.6	24	618	576	. .	382	374	55.5	19 50 22.7	809	+ 22.1	70 57 6.0	+ 1.4
22	35 58	9 26.1	24.5	20.7	23.8	28	175	150	. .	022	012	55.1	36 1 32.4	823	+ 44.6	87 8 38.2	+ 0.3
23																	
24	28 30	9 27.4	26.0	22.5	24.9	21	015	972	. .	828	812	55.1	28 35 24.6	808	+ 33.3	79 42 19.1	+ 4.8
25	30 18	10 0.1	29.4	25.8	27.6	27	. .	. .	. .	532	514	55.1	30 21 35.5	. .	+ 35.8	81 28 32.5	+ 1.6
26	32 44	0.6	29.6	25.2	27.7	25	. .	. .	. .	. .	500	55.1	32 48 6.2	798	+ 39.3	83 55 6.7	+ 1.7
27	46 8	1.4	1.2	26.0	29.4	25	670	. .	. .	. .	410	54.9	46 12 5.4	. .	+ 1 2.6	97 19 29.2	
28	46 8	1.4	1.2	26.0	29.4	22	. .	565	. .	430	. .	54.9	46 12 51.9	730	+ 1 2.6	97 20 15.7	
29	45 56	29.8	29.1	24.0	27.9	26	100	130	. .	265	230	54.8	45 59 57.3	705	+ 1 1.8	97 7 20.3	
30	37 8	3.0	2.0	27.2	0.7	21	400	540	. .	. .	. .	54.8	37 13 7.0	628	+ 44.6	88 20 12.8	
31	36 36	5.5	3.6	29.8	2.7	21	. .	. .	. .	650	610	54.8	36 41 1.0	. .	+ 43.7	87 48 5.9	
32	310 14	0.6	28.9	23.6	28.3	26	780	700	792	742	780	54.8	310 17 48.5	640	− 1 9.3	1 23 0.4	+ 0.1
33	15 58	1.6	29.7	23.9	28.7	23	225	178	. .	058	040	54.8	16 2 43.6	630	+ 16.9	67 9 21.7	+ 2.0
34	35 14	2.0	0.0	24.5	29.0	24	. .	100	. .	988	. .	54.9	35 18 29.0	615	+ 41.4	86 25 31.6	+ 1.9
35	349 26	3.4	0.5	25.7	29.5	25	745	650	. .	533	541	54.9	349 30 4.6	620	− 10.8	40 36 15.0	+ 1.0
36	16 4	5.7	4.0	27.1	29.9	20	205	138	. .	968	022	55.3	16 9 27.2	700	+ 17.3	67 16 5.7	
37	307 46	1.5	0.4	23.4	27.7	26	968	928	910	898	918	55.3	307 49 45.7	710	− 1 16.9	358 54 50.0	+ 1.4
38	296 10	0.5	28.6	23.4	27.5	23	. .	914	. .	832	. .	55.3	296 14 31.9	716	− 2 0.9	347 18 52.2	+ 2.3
39	290 58	2.4	0.7	25.0	28.4	27	. .	. .	. .	970	950	55.4	291 1 26.6	720	− 2 34.6	342 5 13.2	+ 1.1
40	31 56	4.7	3.6	26.2	0.0	27	. .	818	. .	670	. .	55.4	31 59 30.7	. .	+ 37.4	83 6 29.3	+ 0.9
41	298 54	29.4	28.1	22.1	26.1	21	. .	. .	. .	935	821	55.4	298 59 0.8	721	− 1 47.8	350 3 34.2	+ 2.1
42	27 38	3.0	1.6	24.6	28.1	26	600	. .	. .	. .	450	55.4	27 41 51.3	725	+ 31.5	78 48 44.0	+ 1.6
43	46 54	3.4	2.6	26.0	0.0	23	750	. .	. .	. .	670	55.4	46 58 32.9	. .	+ 1 4.2	98 5 58.3	+ 1.1
44	14 28	1.0	1.1	24.6	27.0	29	485	. .	. .	. .	268	55.5	14 31 8.8	. .	+ 15.6	65 37 45.6	+ 0.8
45	12 12	4.1	4.1	27.1	29.6	24	310	. .	. .	. .	190	55.5	12 16 24.4	731	+ 13.1	63 22 58.7	+ 1.2
46	35 12	6.6	5.3	28.6	0.6	26	010	992	. .	. .	. .	62.5	35 16 3.4	. .	+ 40.7	86 23 5.3	
47	34 40	4.2	0.5	25.3	29.7	26	. .	. .	. .	330	312	62.5	34 44 0.1	. .	+ 39.9	85 51 1.2	
48	310 14	10 0.6	29.6	22.0	27.2	27	210	190	170	192	204	62.5	310 17 50.1	611	− 1 7.4	1 23 3.9	+ 2.1
49	18 38	10 6.0	6.8	29.4	1.9	21	. .	. .	. .	290	280	62.5	18 43 13.1	. .	+ 19.4	69 49 53.7	+ 3.2
50	15 58	10 2.0	2.1	23.8	27.7	23	615	592	. .	405	392	62.5	16 2 45.1	. .	+ 16.5	67 9 22.8	+ 2.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
30	. .	. .	52.5
36	30.430	68.5	42.1
45	. .	. .	37.5
47	. .	69.5	58.5
50	30.144	69.0	60.1

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 5.3	+ 16 3.8	. .	+ 15 58.5
2	− 5.4	− 16 3.8	. .	− 16 9.2
27	− 16.2	+ 23.6	. .	+ 7.4
28	− 16.2	− 23.6	+ 0.7	− 39.1
29	− 5.0	. . .	0.0	− 5.0
30	− 5.3	− 16 3.4	. .	− 16 8.7
31	− 5.2	+ 16 3.4	. .	+ 15 58.2
36	− 0.1	. . .	. .	− 0.1
46	− 5.0	− 16 2.1	. .	− 16 7.1
47	− 5.1	+ 16 2.1	. .	+ 15 57.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 30	1	β Ursæ Minoris, S.P.	F.	3.2	53.9	47.8	25.0	17.2	8.6	45.9	40.6	30.3	51 10.94	+ 0.62	. .	− 7.24	14 51 10.34	+ 0.24
	2	α Ceti	F.	23.0	25.5	27.1	33.2	35.2	37.2	43.4	44.9	47.5	55 35.22	− 0.06	− 7.28	− 7.22	2 55 27.94	+ 0.08
	3	α Persei	F.	50.0	54.2	56.4	5.7	8.9	12.0	21.5	23.8	27.7	15 8.91	− 0.24	. .	− 7.22	3 15 1.45	− 0.01
	4	δ Persei	F.	28.8	32.5	34.6	43.7	46.7	49.6	58.8	1.1	4.6	33 46.71	− 0.22	. .	− 7.21	3 33 39.28	+ 0.25
	5	η Tauri	F.	38.4	41.1	42.8	49.6	51.7	54.0	0.9	2.4	5.1	39 51.78	− 0.12	− 7.26	− 7.21	3 39 44.45	+ 0.06
Apr. 5	6	δ Crateris	F.	44.0	46.6	48.2	54.5	56.6	58.7	5.0	6.5	9.2	12 56.59	− 0.44	− 4.61	− 4.49	11 12 51.56	+ 0.09
	7	υ Leonis	F.	11.2	13.7	15.3	21.4	23.4	25.5	31.5	33.1	35.7	30 23.42	− 0.40	− 4.51	− 4.48	11 30 18.54	− 0.01
	8	β Leonis	F.	18.8	21.4	23.0	29.3	31.4	33.5	39.9	41.4	44.2	42 31.43	− 0.36	− 4.50	− 4.48	11 42 26.59	+ 0.01
	9	γ Ursæ Majoris	F.	44.0	48.5	51.0	1.7	5.0	8.6	19.2	21.9	26.2	47 5.12	− 0.24	. .	− 4.48	11 47 0.00	− 0.43
	10	ο Virginis	F.	28.5	31.0	32.7	38.8	40.9	43.0	49.1	50.9	53.3	58 40.91	− 0.38	− 4.36	− 4.48	11 58 36.05	− 0.14
	11	4 Draconis	F.	13.0	25.5	33.0	3.3	13.6	23.8	54.0	1.6	14.2	6 13.56	+ 0.02	. .	− 4.48	12 6 9.10	− 0.49
	12	η Virginis	F.	. .	. .	17.0	19.1	21.2	23.2	25.3	. .	. .	12 21.17	− 0.40	− 4.43	− 4.48	12 13 16.29	− 0.07
	13	κ Draconis	F.	26.2	33.6	38.2	56.9	2.7	9.0	27.2	31.7	39.1	28 2.73	− 0.12	. .	− 4.47	12 27 58.14	− 0.07
	14	21 Cassiopeæ, S. P.	F.	. .	. .	22.8	15.2	7.9	0.0	52.7	. .	. .	37 7.83	− 0.55	. .	− 4.47	0 37 2.81	+ 0.52
	15	12 Canum. Venat.	F.	46.8	50.1	52.1	59.9	2.7	5.1	13.0	15.0	18.4	50 2.57	− 0.29	− 4.43	− 4.47	12 49 57.81	− 0.04
	16	θ Virginis	F.	7.0	9.5	11.1	17.3	19.2	21.2	27.4	28.9	31.4	3 19.22	− 0.41	− 4.48	− 4.47	13 3 14.34	− 0.03
	17	Polaris, S. P.	F.	. .	. .	30.0	6.0	41.0	14.0	. .	. .	. .	10 40.35	− 3.23	. .	. .	. . . .	. .
	18	η Bootis	F.	22.6	25.2	27.0	33.5	35.6	37.7	44.1	45.7	48.4	48 35.53	− 0.35	− 4.44	− 4.46	13 48 30.72	− 0.07
	19	50 Cassiopeæ, S. P.	F.	3.8	56.4	50.9	31.5	24.5	17.9	58.3	53.5	46.1	52 24.77	− 0.52	. .	− 4.46	1 52 19.79	+ 0.51
	20	α Draconis	F.	30.3	36.0	39.6	54.1	59.1	4.0	18.5	22.2	28.3	0 59.12	− 0.17	. .	− 4.46	14 0 54.49	− 0.18
	21	α Bootis	F.	36.8	39.5	41.1	47.5	49.7	52.0	58.5	0.0	2.8	9 49.77	− 0.35	− 4.45	− 4.45	14 9 44.97	0.00
	22	ι Cassiopeæ, S. P.	F.	. .	. .	36.0	30.5	25.6	20.4	15.1	. .	. .	18 25.61	− 0.46	. .	− 4.45	2 18 20.60	+ 0.40
	23	θ Bootis	F.	32.3	36.4	39.1	49.2	52.5	55.9	6.0	8.5	12.8	20 52.52	− 0.25	. .	− 4.45	14 20 47.82	0.00
	24	5 Ursæ Minoris	F.	6.8	17.9	24.1	49.9	58.6	7.2	32.9	39.2	50.0	27 58.51	− 0.04	. .	− 4.45	14 27 54.02	− 0.12
	25	ε Bootis	F.	10.6	13.5	15.3	22.2	24.5	26.8	33.6	35.1	38.2	39 24.42	− 0.33	− 4.44	− 4.47	14 39 19.62	− 0.05
	26	α Piscis Australis	Ha.	16.7	19.7	21.4	28.7	30.9	33.2	40.5	42.2	45.2	50 30.94	− 0.37	− 4.33	− 4.33	22 50 26.24	+ 0.03
	27	α Andromedæ	Ha.	29.6	32.4	34.3	41.1	43.4	45.7	52.7	54.4	57.4	1 43.44	− 0.24	− 4.32	− 4.33	0 1 38.87	+ 0.01
	28	Mercury, (center)	Ha.	37.0	39.6	41.1	47.2	49.3	51.4	57.5	59.0	1.7	36 49.31	− 0.30	. .	− 4.32	0 36 4.69	− 0.01
6	29	Sun I, S.	Ha.	18.8	21.4	23.1	29.3	31.4	33.5	39.6	41.0	43.8	0 31.32	− 0.29	. .	− 4.32	1 0 26.71	. .
	30	Sun II, N.	Ha.	27.9	30.6	32.2	38.4	40.4	42.5	48.7	50.2	52.8	2 40.41	− 0.29	. .	− 4.32	1 2 35.80	. .
	31	Polaris	Ha.	. .	. .	44.0	13.0	31.0	57.0	. .	. .	. .	10 33.67	+ 3.32	. .	− 4.32	1 10 32.67	. .
	32	Venus II, N.	E.	58.3	0.9	2.5	8.8	10.9	12.9	19.0	20.6	23.1	24 0.78	− 0.37	. .	− 3.87	22 23 56.54	− 1.18
	33	α Pegasi	E.	. .	. .	16.0	18.1	20.3	22.4	24.4	. .	. .	58 20.25	− 0.32	− 3.93	− 3.86	22 58 16.07	+ 0.10
7	34	ο Virginis	Ha.	27.8	30.3	32.0	8	40.1	42.2	48.5	49.9	52.5	58 40.16	− 0.33	− 3.65	− 3.64	11 58 36.19	− 0.01
	35	η Virginis	Ha.	8.2	10.6	12.2	18.3	20.3	22.4	28.5	30.0	32.5	13 20.33	− 0.35	− 3.64	− 3.63	12 13 16.35	− 0.01
	36	β Corvi	Ha.	25.9	28.4	30.0	36.9	38.9	41.3	47.8	49.5	52.2	27 38.99	− 0.40	− 3.65	− 3.63	12 27 34.96	− 0.02
	37	θ Virginis	Ha.	6 1	8.6	10.1	16.3	18.3	20.4	26.6	28.0	30.7	3 18.34	− 0.36	− 3.65	− 3.62	13 3 14.36	− 0.01
	38	Polaris, S. P.	Ha.	. .	. .	29.0	4.0	40.0	18.0	50.0	. .	. .	10 39.70	− 3.07	. .	− 3.62	1 10 33.01	. .
	39	ζ Pegasi	F.	49.3	51.9	53.3	59.5	1.5	3.5	9.7	11.4	14.0	35 1.57	− 0.28	− 3.66	− 3.59	22 34 57.70	+ 0.13
	40	α Piscis Australis	F.	16.2	19.0	20.8	28.0	30.5	32.6	39.8	41.5	44.5	50 30.32	− 0.28	− 3.74	− 3.58	22 50 26.36	+ 0.20
	41	α Pegasi	F.	7.2	10.0	11.5	17.9	19.9	22.2	28.4	29.9	32.5	58 19.94	− 0.27	− 3.65	− 3.58	22 58 15.99	0.00
8	42	Sun I, S.	F.	37.0	39.7	41.0	47.3	49.3	51.4	57.5	59.2	1.6	7 49.33	− 0.27	. .	− 3.55	1 7 45.51	. .
	43	Sun II, N.	F.	. .	. .	54.6	56.6	58.7	0.8	2.8	. .	. .	9 58.71	− 0.27	. .	− 3.55	1 9 54.89	. .
	44	Polaris	F.	7.0	56.0	59.0	. .	. .	. .	12.0	14.0	0.0	10 34.35	− 0.41	. .	− 3.55	1 10 30.39	− 2.75
	45	α Arietis	F.	40.0	42.8	44.4	51.1	53.3	55.4	2.1	3.8	6.7	59 53.29	− 0.27	− 3.52	− 3.53	1 59 49.49	0.00
	46	α Persei	F.	46.3	50.4	52.7	2.0	5.1	8.3	17.9	20.3	24.0	15 5.22	− 0.27	. .	− 3.52	3 15 1.43	+ 0.09
	47	δ Persei	F.	25.0	28.6	30.7	39.8	42.9	45.8	55.0	57.1	1.0	33 42.88	− 0.27	. .	− 3.51	3 33 39.10	+ 0.20
	48	η Tauri	F.	34.7	37.6	39.2	45.9	48.1	50.3	57.0	58.6	1.4	39 48.09	− 0.27	− 3.50	− 3.51	3 39 44.31	0.00
	49	ζ Persei	F.	46.0	48.9	50.8	58.0	0.3	2.7	9.8	11.6	14.7	46 0.31	− 0 27	− 3.52	− 3.51	3 45 56.53	0.00

1, 11, 19, 22, 24. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan's Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	293 32	2.1	2.6	24.4	29.1	22	770	770	. .	575	720	62.5	293 36 56.1	. .	− 2 10.4	344 41 6.9	+ 4.2
2	35 14	2.3	3.1	25.0	28.7	24	. .	586	. .	470	. .	62.5	35 18 28.3	. .	+ 40.6	86 25 30.1	+ 0.5
3	349 26	4.0	4.1	25.1	29.4	26	100	080	. .	020	014	62.5	349 30 4.7	. .	− 10.6	40 36 15.3	+ 0.5
4																	
5	15 8	6.5	7.0	28.5	1.5	28	. .	430	. .	300	. .	62.5	15 11 26.1	528	+ 15.6	66 18 2.9	+ 0.9
6	52 52	10 1.5	28.8	22.6	26.5	22	. .	610	. .	530	. .	62.9	52 57 0.9	. .	+ 1 19.0	104 4 41.1	+ 1.3
7	38 54	10 1.0	28.2	21.8	25.5	21	360	330	. .	280	275	62.9	38 59 20.9	. .	+ 48.4	90 6 30.5	+ 1.8
8	23 32	1.0	27.0	20.7	24.9	29	238	202	. .	090	076	62.9	23 35 21.9	. .	+ 26.1	74 42 9.2	+ 0.8
9	344 24	9 26.2	23.4	17.4	20.3	23	. .	. .	. .	486	522	62.9	344 28 51.9	. .	− 16.6	35 34 56.5	+ 1.5
10	29 22	10 0.0	26.0	20.5	24.1	27	. .	. .	. .	160	112	62.9	29 25 52.4	. .	+ 33.8	80 32 47.4	+ 1.1
11	320 30	9 28.2	25.6	20.2	23.9	26	495	. .	. .	. .	456	62.9	320 34 4.6	351	− 49.2	11 39 36.6	− 0.6
12	38 46	10 3.0	0.0	24.0	27.2	28	. .	. .	. .	025	992	62.9	38 49 35.5	. .	+ 48.2	89 56 44.9	+ 0.3
13	328 20	1.0	27.3	22.5	26.1	27	. .	070	. .	984	. .	62.9	328 23 54.4	. .	− 36.8	19 29 38.8	− 1.8
14	293 8	10 3.6	0.1	24.5	29.4	24	648	628	. .	570	480	62.9	293 12 26.3	. .	− 2 18.8	344 16 28.7	+ 0.1
15	359 48	10 1.6	28.5	22.2	25.5	24	888	830	. .	712	736	62.9	359 52 27.9	. .	− 0.1	50 58 49.0	+ 1.8
16	43 40	0.0	26.7	20.8	26.6	28	896	842	. .	780	762	62.9	43 43 26.7	. .	+ 57.2	94 50 45.1	+ 0.7
17	307 28	0.3	27.2	21.0	25.8	27	095	104	112	146	. .	62.9	307 31 52.7	. .	− 1 17.8	358 36 56.1	+ 0.1
18	19 46	1.4	28.5	23.1	25.5	25	. .	148	. .	970	. .	62.9	19 50 23.3	. .	+ 21.6	70 57 6.1	+ 2.7
19	290 40	1.6	28.2	22.2	27.5	27	. .	. .	. .	905	888	62.9	290 43 39.7	. .	− 2 37.4	341 47 23.5	+ 0.9
20	333 50	9 27.0	24.4	18.8	22.2	25	. .	260	. .	460	. .	62.9	333 54 23.3	. .	− 29.4	25 0 15.1	+ 1.2
21	18 58	0.3	26.5	21.2	25.2	27	505	450	. .	332	326	62.9	19 1 48.8	. .	+ 20.7	70 8 30.7	+ 2.5
22	285 42	24.5	21.8	16.1	21.4	26	. .	. .	. .	580	565	62.9	285 46 5.7	. .	− 3 29.8	336 48 57.1	+ 2.3
23	346 22	1.4	27.8	21.6	25.7	23	. .	. .	. .	176	230	62.9	346 26 51.6	. .	− 14.5	37 32 58.3	+ 1.4
24	322 34	2.8	29.5	24.6	27.8	26	246	. .	. .	. .	220	62.9	322 38 4.0	. .	− 45.8	13 43 39.4	− 0.9
25	11 12	10 1.0	27.5	21.4	25.1	26	. .	084	. .	992	. .	62.9	11 16 9.2	. .	+ 12.0	62 24 42.4	+ 0.8
26	69 6	5.1	4.6	29.0	2.5	27	. .	073	. .	040	. .	62.3	69 9 46.2	. .	+ 2 32.1	120 18 39.5	+ 0.9
27	10 26	4.0	3.7	28.6	0.5	21	. .	200	. .	126	. .	62.3	10 31 17.7	. .	+ 10.8	61 37 49.7	+ 0.9
28	36 38	1.6	0.0	25.7	29.0	26	985	930	. .	000	045	62.3	36 41 51.2	. .	+ 43.0	87 48 55.4	
29	32 30	28.8	27.4	21.3	25.9	21	720	713	. .	. .	. .	62.3	32 35 15.4	. .	+ 36.8	83 42 13.4	
30	31 58	27.9	26.8	19.7	24.4	21	. .	. .	. .	645	678	62.3	32 3 16.3	. .	+ 36.0	83 10 13.5	
31	310 14	27.2	25.7	21.2	25.0	27	. .	010	200	180	. .	62.0	310 17 53.3	. .	− 1 7.8	1 23 6.7	+ 2.6
32	45 58	7.7	8.7	0.3	5.5	27	. .	330	. .	300	. .	62.0	46 1 39.3	. .	+ 1 0.1	97 9 0.6	
33	24 18	3.0	3.2	25.8	29.4	22	. .	. .	. .	242	210	62.0	24 23 1.4	. .	+ 26.2	75 29 48.8	+ 2.1
34	29 22	7.6	6.7	29.1	2.0	26	. .	610	. .	538	. .	61.8	29 25 52.2	. .	+ 33.3	80 32 46.7	+ 0.5
35	38 46	7.1	6.5	29.4	1.5	27	. .	675	. .	530	. .	61.8	38 49 36.7	. .	+ 47.5	89 56 45.4	+ 0.9
36	61 28	5.7	5.6	28.6	1.5	23	. .	680	. .	590	. .	61.8	61 32 38.0	. .	+ 1 48.6	112 40 47.8	+ 3.3
37	43 40	3.8	3.5	27.0	0.5	28	. .	420	. .	350	. .	61.8	43 43 27.1	. .	+ 56.5	94 50 44.8	+ 0.4
38	307 28	5.0	4.1	26.0	0.5	26	830	870	870	890	835	61.8	307 31 50.1	. .	− 1 16.8	358 36 54.5	− 1.0
39	28 40	2.7	1.6	24.9	29.1	26	106	084	. .	028	002	62.1	28 44 4.6	. .	+ 31.0	79 50 56.8	− 0.5
40	69 6	3.6	1.9	25.6	0.3	27	. .	. .	. .	148	112	62.2	69 9 46.2	. .	+ 2 27.5	120 18 34.9	− 3.3
41	24 18	4.4	2.3	25.2	28.9	22	. .	306	. .	264	. .	62.2	24 23 1.9	. .	+ 25.6	75 29 48.7	+ 2.0
42	31 46	8.7	7.6	29.5	2.0	25	270	222	. .	. .	. .	62.2	31 50 13.1	. .	+ 35.2	82 57 9.5	
43	31 14	6.8	7.2	26.3	0.6	25	. .	. .	. .	100	092	62.2	31 18 15.8	. .	+ 34.5	82 25 11.5	
44	310 14	25.0	26.5	19.1	25.7	27	568	415	428	. .	. .	62.5	310 17 51.4	. .	− 1 6.8	1 23 5.8	+ 1.2
45	15 58	10 7.2	5.3	27.1	0.0	23	210	185	. .	150	141	62.2	16 2 46.3	. .	+ 16.3	67 9 23.8	+ 3.0
46	349 26	6.4	4.5	27.0	0.9	25	. .	. .	. .	885	752	62.1	349 30 5.2	. .	− 10.5	40 36 15.9	− 0.5
47	351 28	9.2	7.4	0.0	2.8	27	. .	428	. .	312	. .	62.1	351 31 39.7	. .	− 8.4	42 37 52.5	+ 0.1
48	15 8	2.2	2.2	23.5	26.5	28	. .	. .	. .	718	604	62.0	15 11 24.8	. .	+ 15.3	66 18 1.3	− 1.2
49	7 20	2.6	1.4	23.5	25.4	26	951	911	. .	782	828	62.0	7 23 53.8	. .	+ 7.3	58 30 22.3	+ 0.9

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
5	30.128	70.0	59.7
6	29.962	69.0	36.1
16	29.960	69.0	35.1
17	29.966	69.0	35.1
20	. .	. .	33.9
25	29.962	68.0	33.0
26	30.006	66.0	48.8
27	30.004	67.0	52.9
28	. .	. .	53.9
30	30.004	68.0	55.5
32	. .	. .	53.5
34	30.122	61.5	45.0
36	. .	. .	44.5
38	30.130	69.2	43.9
39	30.176	66.5	68.0
42	30.140	67.5	65.7
44	. .	. .	65.7
45	. .	. .	66.2
48	30.118	71.0	68.2

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
28	− 3.9	. . .	0.0	− 3.9
29	− 4.7	− 15 59.9	. .	− 16 4.6
30	− 4.6	+ 15 59.9	. .	+ 15 55.3
32	− 13.2	+ 16.7	. .	+ 3.5
42	− 4.6	− 15 59.0	. .	− 16 3.6
43	− 4.6	+ 15 59.0	. .	+ 15 54.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 8	1	α Tauri	F.	17.7	20.3	21.9	28.3	30.4	32.5	39.0	40.4	43.1	28 30.40	− 0.27	− 3.44	− 3.50	4 28 26.63	− 0.08
	2	δ Canis Majoris	F.	56.2	59.0	0.7	7.6	9.7	12.1	18.8	20.5	23.4	3 9.78	− 0.28	− 3.39	− 3.46	7 3 6.04	− 0.12
	3	Moon I.	F.	6.2	9.1	10.7	17.3	19.7	22.0	28.7	30.5	33.1	9 19.70	− 0.27	. .	− 3.46	7 9 16.97	+68.96
	4	α^2 Geminorum	F.	7.0	10.0	11.9	19.2	21.5	24.0	31.2	33.0	35.9	26 21.52	− 0.27	− 3.41	− 3.46	7 26 17.79	+ 0.19
	5	α Canis Minoris	F.	21.0	23.5	25.0	31.1	33.1	35.1	41.3	42.9	45.5	32 33.17	− 0.27	− 3.37	− 3.45	7 32 29.45	− 0.22
	6	β Geminorum	F.	11.0	14.0	15.6	22.7	25.0	27.3	34.2	35.9	38.9	37 24.96	− 0.27	− 3.40	− 3.45	7 37 21.24	− 0.08
	7	φ Geminorum	F.	22.1	25.0	26.7	33.6	35.9	38.1	45.0	46.8	49.6	45 35.87	− 0.27	− 3.45	− 3.45	7 45 32.15	− 0.08
	8	λ Ursæ Minoris, S.P.	F.	. .	. .	54.0	7.0	19.0	33.0	41.0	. .	. .	54 18.17	− 0.10	. .	− 3.45	19 54 14.62	− 2.19
	9	15 Argus	F.	51.2	53.7	55.4	2.0	4.4	6.8	13.2	14.8	17.9	3 4.38	− 0.28	− 3.48	− 3.45	8 2 0.65	− 0.03
	10	α Ursæ Majoris	F.	19.9	25.4	28.8	37.4	46.5	55.3	4.0	7.6	12.8	55 46.41	− 0.27	. .	− 3.41	10 55 42.73	+ 0.15
	11	δ Leonis	F.	3.0	5.6	7.2	13.8	16.0	18.2	24.8	26.3	29.0	7 15.99	− 0.27	− 3.37	− 3.40	11 7 12.32	− 0.09
	12	δ Crateris	F.	42.7	45.4	46.9	53.2	55.2	57.3	3.7	5.1	7.8	12 55.26	− 0.26	− 3.48	− 3.40	11 12 51.60	+ 0.05
	13	τ Leonis	F.	7.4	10.0	11.5	17.7	19.5	21.6	27.9	29.3	31.9	21 19.64	− 0.27	− 3.38	− 3.40	11 21 15.97	− 0.04
	14	υ Leonis	F.	10.0	12.5	14.0	20.2	22.2	24.2	30.3	31.9	34.5	30 22.20	− 0.27	− 3.43	− 3.39	11 30 18.54	0.00
	15	γ Cephei, S. P.	F.	55.7	38.2	20.2	10.8	1.3	52.8	43.8	25.8	7.0	34 1.73	− 0.23	. .	− 3.39	23 33 58.11	+ 0.49
	16	β Leonis	F.	17.5	20.2	21.7	28.0	30.1	32.3	38.7	40.3	43.0	42 30.20	− 0.27	− 3.36	− 3.39	11 42 26.54	− 0.04
	17	ο Virginis	F.	27.4	29.9	31.5	37.7	39.8	41.9	48.0	49.5	52.3	58 39.78	− 0.28	− 3.33	− 3.39	11 58 36.11	− 0.08
	18	4 Draconis	F.	. .	. .	52.8	3.3	12.9	23.0	33.0	. .	. .	6 13.05	− 0.28	. .	− 3.39	12 6 9.38	− 0.13
	19	η Virginis	F.	7.7	10.3	11.8	17.9	20.0	22.0	28.0	29.6	32.2	13 19.94	− 0.27	− 3.33	− 3.39	12 13 16.28	− 0.08
	20	β Corvi	F.	25.4	28.0	29.8	36.3	38.7	40.9	47.6	49.2	52.0	27 38.66	− 0.28	− 3.44	− 3.39	12 27 34.99	+ 0.01
	21	12 Canum Venat.	F.	45.6	49.0	51.0	59.0	1.5	4.1	12.0	14.2	17.2	50 1.51	− 0.27	− 3.37	− 3.38	12 49 57.86	− 0.01
	22	θ Virginis	F.	5.8	8.3	9.9	16.0	18.0	20.1	26.2	27.7	30.2	3 18.02	− 0.27	− 3.41	− 3.37	13 3 14.38	0.00
	23	Polaris, S. P.	F.	. .	. .	26.0	0.0	36.0	9.0	46.0	. .	. .	10 35.90	− 0.13	. .	− 3.37	1 10 32.40	− 0.74
	24	α Virginis	F.	13.2	15.8	17.3	23.5	25.6	27.7	34.0	35.3	38.0	18 25.60	− 0.27	− 3.37	− 3.37	13 18 21.96	− 0.01
9	25	Sun I, N.	Ha.	16.2	18.8	20.4	26.4	28.5	30.7	36.8	38.3	40.9	11 28.56	− 0.18	. .	− 3.10	1 11 25.28	. .
	26	Sun II, S.	Ha.	. .	. .	33.6	35.7	37.8	39.9	42.1	. .	. .	13 37.93	− 0.18	. .	− 3.10	1 13 34.65	. .
	27	υ Leonis	Ha.	. .	. .	17.5	19.6	21.6	23.6	25.7	. .	. .	30 21.61	− 0 17	− 2.95	− 2.98	11 30 18.46	− 0.07
	28	β Leonis	Ha.	17.0	19.7	21.3	27.6	29.7	31.9	38.2	39.8	42.4	42 29.73	− 0.18	− 2.99	− 2.97	11 42 26.58	+ 0.01
	29	γ Ursæ Majoris	Ha.	42.6	46.9	49.5	0.0	3.6	7.1	17.6	20.2	24.8	47 3.59	− 0.23	. .	− 2.97	11 47 0.39	0.00
	30	ο Virginis	Ha.	26.8	29.3	31.0	37.1	39.2	41.2	47.5	49.1	51.7	58 39.21	− 0.18	− 2.86	− 2.97	11 58 36.06	− 0.13
	31	4 Draconis	Ha.	12.2	24.5	32.3	2.7	12.9	22.7	52.8	0.3	12.9	6 12.59	− 0.36	. .	− 2.97	12 6 9.26	− 0.22
	32	η Virginis	Ha.	7.3	9.8	11.4	17.3	19.5	21.4	27.6	29.2	31.7	13 19.47	− 0.18	− 2.95	− 2.95	12 13 16.34	− 0.02
	33	β Corvi	Ha.	24.8	27.6	29.2	35.9	38.1	40.4	47.0	48.6	51.3	27 38.10	− 0.16	− 3.00	− 2.95	12 27 34.99	+ 0.01
	34	21 Cassiopeæ	Ha.	20.0	29.5	35.2	57.6	5.2	13.0	35.5	41.0	50.0	37 5.22	− 0.03	. .	− 2.94	0 37 2.25	− 0.12
	35	32^1 Camelopardalis	Ha.	18.3	42.6	58.1	57.5	17.6	37.4	37.8	53.0	17.2	48 17.72	− 0.54	. .	− 2.94	12 48 14.24	− 7.83
	36	32^2 Camelopardalis	Ha.	26.2	51.7	6.0	5.2	25.2	45.7	44.8	0.5	25.0	48 25.59	− 0.54	. .	− 2.94	12 48 22.11	+ 0.04
	37	θ Virginis	Ha.	5.2	7.9	9.3	15.5	17.5	19.5	25.8	27.3	30.0	3 17.56	− 0.17	− 3.05	− 2.94	13 3 14.45	+ 0.07
	38	Polaris, S. P.	Ha.	. .	. .	24.0	59.0	34.0	11.0	. .	. .	. .	10 34.38	+ 1.38	. .	− 2.94	1 10 32.82	. .
12	39	Sun I, N.	Ha.	15.7	18.2	19.8	26.0	28.0	30.0	36.4	37.9	40.5	22 28.06	− 0.11	. .	− 2.19	1 22 25.76	. .
	40	Sun II, S.	Ha.	25.0	27.7	29.3	35.4	37.5	39.6	45.8	47.4	50.0	24 37.52	− 0.11	. .	− 2.19	1 24 35.22	. .
	41	α Ursæ Majoris	Ha.	18.5	24.0	27.3	40.5	45.0	49.4	2.6	5.8	11.3	55 44.93	− 0.25	. .	− 2.05	10 55 42.63	+ 0.13
	42 43	Moon I, N.	Ha.	16.3	18.9	20.6	26.8	29.0	31.1	37.4	39.2	41.8	2 29.01	− 0.11	. .	− 2.04	11 2 26.86	+69.51
	44	τ Leonis	Ha.	5.8	8.5	10.1	16.0	18.1	20.2	26.3	27.7	30.3	21 18.11	− 0.10	− 2.04	− 2.04	11 20 15.97	− 0.02
	45	υ Leonis	Ha.	8.3	10.9	12.4	18.5	20.5	22.6	28.6	30.2	32.9	30 20.54	− 0.09	− 1.97	− 2.04	11 30 18.41	− 0.11
	46	β Leonis	Ha.	16.0	18.7	20.3	26.6	28.7	30.8	37.3	38.7	41.4	42 28.72	− 0.12	− 2.05	− 2.03	11 42 26.57	+ 0.01
	47	ο Virginis	Ha.	25.8	28.5	30.0	36.2	38.3	40.3	46.6	48.2	50.7	58 38.29	− 0.11	− 2.01	− 2.03	11 58 36.15	− 0.04
	48	4 Draconis	Ha.	11.5	24.0	32.0	2.1	12.0	22.4	52.4	0.0	12.5	6 12.10	− 0.73	. .	− 2.03	12 6 9.34	− 0.05
	49	η Virginis	Ha.	6.3	8.8	10.4	16.4	18.5	20.5	26.6	28.2	30.8	13 18.50	− 0.09	− 2.07	− 2.03	12 13 16.38	+ 0.02
	50	β Corvi	S.	26.4	28.4	32.4	35.0	37.1	39.4	41.3	45.8	47.6	27 37.04	− 0.03	− 2.07	− 2.02	12 27 34.99	+ 0.01

15, 18. Bisections at sets B and D.
42. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	22 34	10 4.3	4.6	26.8	28.7	23	747	730	. .	626	575	61.8	22 38 39.5	. .	+ 23.5	73 45 24.2	+ 2.0
2	64 58	1.2	1.3	22.0	28.5	21	490	443	. .	390	370	61.7	65 3 16.1	. .	+ 2 2.5	116 11 39.8	+ 4.6
3																	
4	6 40	3.4	2.0	23.0	25.4	29	. .	. .	. .	248	248	61.7	6 43 15.8	. .	+ 6.8	57 49 43.8	− 0.1
5	33 16	10 15.0	14.5	6.0	6.8	26	422	400	. .	325	302	61.6	33 19 48.6	. .	+ 37.8	84 26 47.6	+ 0.5
6	10 30	6.5	6.2	26.9	29.2	29	386	276	. .	188	188	61.6	10 33 12.8	. .	+ 10.7	61 39 44.7	+ 1.0
7	11 44	4.1	4.0	25.0	27.0	28	478	385	. .	308	288	61.6	11 47 28.7	. .	+ 12.0	62 54 1.9	+ 1.0
8	307 46	2.1	1.4	21.8	26.6	27	700	648	. .	674	676	61.6	307 49 40.7	. .	− 1 14.0	358 54 47.9	+ 0.5
9	62 44	10 9.1	8.8	1.0	3.2	26	212	208	. .	120	080	61.5	62 47 56.4	. .	+ 1 51.6	113 56 9.2	+ 1.1
10	336 22	10 6.7	5.7	26.3	29.0	23	. .	028	. .	940	. .	61.3	336 26 49.1	. .	− 25.6	27 32 44.7	− 1.2
11	17 36	10 10.5	10.0	1.3	2.7	28	. .	895	. .	818	. .	61.3	17 39 12.1	. .	+ 18.7	68 45 52.0	− 2.2
12	52 52	2.2	1.5	22.9	26.1	22	. .	388	. .	348	. .	61.3	52 57 1.6	. .	+ 1 17.8	104 4 40.6	+ 0.6
13	35 14	3.1	2.0	22.8	26.6	23	515	490	. .	408	402	61.3	35 18 44.6	. .	+ 41.7	86 25 47.5	+ 0.4
14	38 54	0.1	29.6	21.6	24.0	21	390	370	. .	270	220	61.3	38 59 19.6	. .	+ 47.7	90 6 28.5	− 0.1
15	295 46	9 28.8	26.3	18.0	23.3	26	. .	. .	. .	928	. .	61.2	295 49 55.5	. .	− 2 1.2	346 54 15.5	+ 1.7
16	23 32	3.3	1.8	23.4	25.8	29	016	988	. .	846	840	61.2	23 35 21.1	. .	+ 25.8	74 42 8.1	0.0
17	29 22	4.4	3.0	24.8	27.2	26	925	889	. .	777	750	61.2	29 25 51.7	. .	+ 33.3	80 32 46.2	+ 0.1
18	320 30	1.6	0.6	22.4	25.4	26	348	375	. .	334	355	61.2	320 34 1.6	. .	− 48.5	11 39 34.3	− 2.0
19	38 46	4.9	3.5	25.2	28.2	27	890	842	. .	695	691	61.2	38 49 36.5	. .	+ 47.5	89 56 45.2	+ 0.7
20	61 28	4.6	4.3	25.3	28.6	23	. .	. .	. .	718	664	61.2	61 32 37.5	. .	+ 1 48.5	112 40 47.2	+ 2.5
21	359 48	2.1	0.6	21.3	24.4	24	. .	912	. .	808	. .	61.2	359 52 24.8	. .	− 0.1	50 58 45.9	− 0.5
22	43 40	8.0	7.0	28.5	3.0	28	. .	224	. .	118	. .	61.2	43 43 26.8	. .	+ 56.5	94 50 44.5	0.0
23	307 28	9 25.5	24.9	15.3	21.0	27	404	390	382	345	316	61.2	307 31 51.4	. .	− 1 16.8	358 36 55.8	+ 0.6
24	49 18	6.7	5.3	26.9	0.3	28	. .	200	. .	116	. .	61.2	49 21 28.8	. .	+ 1 8.8	100 28 58.8	
25	30 52	6.0	6.0	26.5	1.8	26	215	230	. .	. .	. .	61.3	30 55 59.1	. .	+ 33.5	82 2 53.8	
26	31 24	6.3	5.2	26.0	1.7	26	. .	. .	. .	465	410	61.3	31 27 54.8	. .	+ 34.2	82 34 50.2	
27	38 56	12.9	11.6	3.0	5.4	28	. .	. .	. .	357	360	63.0	38 59 20.6	. .	+ 47.3	90 6 29.1	+ 0.5
28	23 32	12.5	12.4	3.6	4.0	28	. .	390	. .	277	. .	63.0	23 35 22.2	. .	+ 25.5	74 42 8.9	+ 0.9
29	344 24	10.5	9.6	0.8	2.1	22	. .	825	. .	765	. .	63.0	344 28 49.7	. .	− 16.2	35 34 54.7	+ 0.7
30	29 22	12.0	11.5	2.7	4.4	26	. .	385	. .	315	. .	63.0	29 25 53.0	. .	+ 33.0	80 32 47.2	+ 1.1
31	320 30	9.6	9.4	0.6	2.9	26	195	110	. .	. .	. .	63.0	320 34 0.8	. .	− 48.0	11 39 34.0	− 2.0
32	38 46	13.9	13.5	4.6	6.0	27	. .	295	. .	235	. .	63.0	38 49 37.1	. .	+ 47.0	89 56 45.3	+ 0.8
33	61 28	11.7	11.6	3.0	5.1	23	. .	255	. .	285	. .	63.0	61 32 39.7	. .	+ 1 47.5	112 40 48.4	+ 3.6
34	293 8	11.0	9.9	0.9	4.5	24	245	375	. .	. .	. .	63.0	293 12 22.2	. .	− 2 16.7	344 16 26.7	− 0.7
35	314 44	10.0	9.2	0.8	1.9	29	. .	970	. .	. .	. .	63.0	314 47 3.8	. .	− 58.9	5 52 26.1	−20.6
36	314 44	10.0	9.2	0.8	1.9	28	. .	705	. .	. .	. .	63.0	314 47 23.2	. .	− 58.9	5 52 45.5	− 1.0
37	43 40	12.0	11.0	2.7	6.1	28	. .	040	. .	900	. .	63.0	43 43 27.9	. .	+ 56.0	94 50 45.1	+ 0.6
38	307 28	9.6	9.4	0.3	2.5	26	700	710	730	710	. .	63.0	307 31 49.5	. .	− 1 16.1	358 36 54.6	− 0.4
39	29 46	6.5	6.5	25.3	29.2	26	880	885	. .	. .	. .	61.4	29 49 49.8	. .	+ 31.9	80 56 42.9	
40	30 18	8.2	10.0	28.5	1.3	26	. .	. .	. .	965	910	61.4	30 21 45.0	. .	+ 32.7	81 28 38.9	
41	336 22	10 13.0	13.1	2.4	3.6	22	. .	760	. .	645	. .	63.0	336 26 49.0	. .	− 25.0	27 32 45.2	+ 0.3
42	28 53.4	11 23.4	22.5	12.1	15.6	27	710	560	340	195	000	63.0	28 56 56.8	. .	+ 31.7	80 3 49.7	
43	28 53.4	7 23.6	22.0	12.2	16.0												
44	35 14	10 15.1	15.4	5.3	7.0	22	. .	640	. .	555	. .	63.0	35 18 47.3	. .	+ 40.6	86 25 49.1	+ 2.2
45	38 56	16.2	15.3	5.5	8.0	28	. .	195	. .	110	. .	63.0	38 59 21.6	. .	+ 46.4	90 6 29.2	+ 0.6
46	23 32	16.5	16.2	5.5	7.0	28	. .	090	. .	030	. .	63.0	23 35 23.3	. .	+ 25.1	74 42 9.6	+ 1.9
47	29 22	16.5	15.6	5.1	7.5	26	. .	115	. .	080	. .	63.0	29 25 53.4	. .	+ 32.4	80 32 47.0	+ 1.1
48	320 30	14.8	14.9	4.7	6.5	25	980	945	. .	. .	. .	63.0	320 33 59.0	. .	− 47.3	11 39 32.9	− 2.2
49	38 46	16.1	16.0	6.0	7.5	27	. .	070	. .	025	. .	63.0	38 49 38.6	. .	+ 46.3	89 56 46.1	+ 1.6
50	61 28	14.5	15.0	5.0	7.3	23	. .	. .	. .	020	950	63.0	61 32 40.3	. .	+ 1 45.9	112 40 47.4	+ 2.3

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	30.095	71.4	69.0
3	30.110	71.0	59.6
7	. .	. .	58.0
10	30.150	70.5	48.0
13	. .	. .	46.1
19	30.160	70.2	45.1
21	. .	. .	44.5
24	30.138	70.5	44.1
26	30.136	66.6	73.9
27	30.119	69.5	50.1
32	30.119	69.5	49.9
38	30.100	69.5	48.1
40	29.862	69.5	69.8
41	29.944	70.5	57.0
49	29.980	70.0	55.2

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
25	− 4.5	+ 15 58.2	. .	+ 15 53.7
26	− 4.5	− 15 58.2	. .	− 16 2.7
39	− 4.4	+ 15 58.0	. .	+ 15 53.6
40	− 4.4	− 15 58.0	. .	− 16 2.4
42	−28 58.6	+ 16 26.3	. .	− 12 32.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 12	1	21 Cassiopeæ, S. P.	S.	39.2	33.7	18.3	11.0	4.0	56.3	48.6	33.4	28.0	37 3.61	+ 0.40	. .	− 2.02	0 37 1.99	− 0.45
	2	θ Virginis	Ha.	4.3	6.7	8.3	14.5	16.5	18.5	24.6	26.2	28.7	3 16.48	− 0.07	− 2.05	− 2.01	13 3 14.40	0.00
	3	Polaris, S. P.	Ha.	. .	. .	19.0	54.0	31.0	6.0	40.0	. .	. .	10 29.50	+ 5.35	. .	− 2.01	1 10 32.84	− 0.24
	4	Venus II, N.	E.	. .	. .	16.3	18.2	20.4	22.3	24.6	. .	. .	41 20.37	− 0.06	. .	− 1.94	22 41 18.37	− 1.06
	5	α Piscis Australis	E.	. .	. .	. .	. .	. .	. .	38.0	39.6	42.5	50 28.41	+ 0.02	− 2.03	− 1.94	22 50 26.49	+ 0.13
	6	α Pegasi	E.	5.6	8.3	9.8	16.0	18.2	20.3	26.5	28.2	30.8	58 18.19	− 0.14	− 1.93	− 1.94	22 58 16.11	+ 0.02
	7	γ Cephei	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	8	α Andromedæ	E.	27.1	30.0	31.9	38.6	41.2	43.3	50.1	52.0	54.8	1 41.00	− 0.17	− 1.86	− 1.92	0 1 38.91	− 0.04
	9	Polaris	E.	. .	. .	53.5	18.5	42.5	7.0	29.5	. .	. .	10 40.52	− 5.80	. .	− 1.90	1 10 32.82	− 0.27
13	10	Sun I, S.	E.	55.9	58.5	0.0	6.3	8.3	10.5	16.7	18.4	20.9	26 8.39	− 0.12	. .	− 1.90	1 26 6.37	. .
	11	Sun II, N.	E.	. .	. .	14.1	16.2	18.2	20.1	22.2	. .	. .	28 18.17	− 0.12	. .	− 1.90	1 28 16.15	. .
	12	α Persei	E.	44.8	48.5	50.9	0.4	3.4	6.5	16.1	18.4	22.3	15 3.48	− 0.27	. .	− 1.87	3 15 1.34	+ 0.04
	13	δ Persei	E.	23.1	26.7	29.0	38.1	41.0	44.1	53.1	55.4	59.2	33 41.08	− 0.26	. .	− 1.86	3 33 38.96	+ 0.11
	14	α Tauri	E.	15.9	18.5	20.1	26.6	28.6	30.7	37.0	38.8	41.2	28 28.60	− 0.14	− 1.82	− 1.85	4 28 26.61	− 0.05
18	15	η Virginis	Ha.	7.4	10.0	11.5	17.6	19.6	21.8	27.7	29.3	31.9	13 19.64	− 0.21	− 3.00	− 3.09	12 13 16.34	− 0.02
	16	32^1 Camelopardalis	Ha.	. .	. .	37.2	56.5	16.4	37.2	55.6	. .	. .	48 16.69	− 0.16	. .	− 3.09	12 48 13.44	− 8.23
	17	32^2 Camelopardalis	Ha.	. .	. .	44.6	4.5	24.0	44.0	4.0	. .	. .	48 24.33	− 0.16	. .	− 3.09	12 48 21.08	− 0.59
	18	θ Virginis	Ha.	5.4	8.0	9.5	15.7	17.7	19.7	25.8	27.4	29.9	3 17.68	− 0.21	− 3.09	− 3.10	13 3 14.37	− 0.05
	19	Polaris, S. P.	Ha.	. .	. .	. .	4.0	37.0	11.0	. .	. .	. .	10 37.46	− 0.10	. .	− 3.10	1 10 34.26	. .
22	20	γ^1 Leonis	E.	40.7	43.4	45.0	51.5	53.7	55.9	2.5	4.1	6.9	12 53.74	− 0.25	− 4.91	− 4.97	10 12 48.52	− 0.08
	21	α Ursæ Majoris	E.	21.0	26.3	29.7	43.0	47.3	51.6	5.0	8.3	13.7	55 47.32	− 0.10	. .	− 4.98	10 55 42.24	− 0.01
	22	δ Leonis	E.	4.4	7.0	8.8	15.4	17.4	19.5	26.2	27.9	30.5	7 17.46	− 0.24	− 4.90	− 4.99	11 7 12.23	+ 0.06
	23	δ Crateris	E.	44.2	46.9	48.5	54.6	56.8	58.9	5.2	6.8	9.4	12 56.81	− 0.31	− 5.08	− 4.99	11 12 51.51	− 0.06
	24	τ Leonis	E.	9.0	11.5	13.0	19.1	21.2	23.3	29.3	31.0	33.4	21 21.20	− 0.28	− 5.01	− 4.99	11 21 15.93	0.00
	25	γ Cephei, S. P.	E.	58.8	47.0	40.2	13.7	4.3	55.3	28.5	22.1	10.5	34 4.49	− 0.60	. .	− 5.00	23 33 58.89	+ 0.46
	26	β Leonis	E.	19.1	21.7	23.4	29.6	31.7	33.9	40.2	41.8	44.4	42 31.76	− 0.26	− 5.00	− 5.00	11 42 26.50	− 0.01
	27	γ Ursæ Majoris	E,	44.5	48.9	51.5	2.0	5.5	8.8	19.1	22.3	26.6	47 5.47	− 0.15	. .	− 5.01	11 47 0.31	+ 0.08
	28	o Virginis	E.	. .	. .	37.3	39.3	41.4	43.4	45.4	. .	. .	58 41.37	− 0.27	− 4.98	− 5.01	11 58 36.09	− 0.05
	29	4 Draconis	E.	13.0	25.7	33.4	3.4	13.4	23.6	54.0	1.4	13.6	6 13.50	+ 0.14	. .	− 5.01	12 6 8.63	− 0.33
	30	η Virginis	E.	9.4	12.0	13.5	19.5	21.5	23.6	29.7	31.4	33.9	13 21.61	− 0.29	− 5.00	− 5.01	12 13 16.31	− 0.03
	31	β Corvi	E.	27.2	29.9	31.5	38.0	40.3	42.6	49.0	50.8	53.7	27 40.33	− 0.34	− 5.06	− 5.02	12 27 34.97	0.00
	32	21 Cassiopeæ, S. P.	E.	54.0	44.3	38.7	16.3	8.7	1.0	38.5	32.9	23.3	37 8.63	− 0.55	. .	− 5.02	0 37 3.06	+ 0.28
	33	32^1 Camelopardalis	E.	17.7	43.3	58.5	57.0	17.2	37.4	37.2	52.6	16.2	48 17.46	+ 0.56	. .	− 5.03	12 48 12.99	− 8.41
	34	32^2 Camelopardalis	E.	25.5	50.7	6.3	5.3	25.0	45.0	44.4	59.5	23.9	48 25.07	+ 0.56	. .	− 5.03	12 48 20.60	− 0.80
	35	θ Virginis	E.	7.5	10.0	11.5	17.6	19.5	21.6	27.9	29.4	31.9	3 19.66	− 0.30	− 4.98	− 5.03	13 3 14.33	− 0.09
	36	Polaris, S. P.	E.	. .	. .	30.5	9.5	43.5	21.0	58.0	. .	. .	10 44.00	− 3.66	. .	− 5.04	1 10 35.30	. .
	37	α Virginis	E.	15.0	17.6	19.2	25.4	27.4	29.4	35.8	37.4	39.9	18 27.46	− 0.31	− 5.12	− 5.04	13 18 22.11	+ 0.07
	38	η Bootis	E.	23.3	25.9	27.6	34.1	36.3	38.4	44.8	46.4	49.1	48 36.21	− 0.25	− 5.09	− 5.05	13 48 30.91	− 0.01
	39	α Cygni	E.	48.4	51.8	54.2	3.0	5.5	8.3	17.0	19.3	22.6	37 5.57	− 0.19	. .	− 5.22	20 37 0.16	+ 0.19
	40	Moon II, N.	E.	48.6	51.5	53.3	0.0	2.1	4.2	10.9	12.7	15.5	4 2.09	− 0.33	. .	− 5.24	21 3 56.52	−66.95
	41	Polaris	F.	. .	. .	51.0	16.0	41.0	5.0	29.0	. .	. .	10 40.90	+ 0.41	. .	− 5.53	1 10 35.78	+ 0.27
23	42	Sun I, S.	F.	7.8	10.4	12.0	18.3	20.3	22.4	28.6	30.3	32.9	3 20.33	− 0.17	. .	− 5.51	2 3 14.65	. .
	43	Sun II, N.	F.	18.5	21.3	23.0	29.2	31.2	33.2	39.8	41.4	43.8	5 31.27	− 0.17	. .	− 5.51	2 5 25.59	. .
	44	ι Aurigæ	F.	22.0	26.3	31.5	34.1	36.4	38.8	41.5	46.5	51.2	48 36.48	− 0.17	− 5.84	− 5.58	4 48 30.73	+ 0.22
	45	β Orionis	F.	9.9	12.5	14.0	20.1	22.2	24.2	30.4	32.0	34.6	8 22.21	− 0.11	− 5.72	− 5.58	5 8 16.52	+ 0.13
	46	β Tauri	F.	55.4	58.1	59.8	4.5	9.1	13.7	18.5	20.2	23.1	18 9.16	− 0.17	− 5.64	− 5.59	5 18 3.40	+ 0.03
	47	ε Orionis	F.	29.6	32.1	33.6	39.8	41.8	44.0	50.0	51.5	54.1	29 41.83	− 0.16	− 5.59	− 5.59	5 29 36.08	− 0.01
	48	α Orionis	F.	0.6	3.1	4.7	10.8	13.0	14.9	21.0	22.6	25.2	48 12.88	− 0.17	− 5.57	− 5.60	5 48 7.11	− 0.06
	49	υ Leonis	F.	12.1	14.7	16.3	22.2	24.3	26.3	32.2	34.0	36.4	30 24.28	− 0.20	− 5.66	− 5.74	11 30 18.34	− 0.12

4, 9, 10, 11. Unsteady.
16, 25, 29, 32. Bisections at sets B and D.
7, 27. Bisections at C_{1-5}.
33, 34, 39, 40. Bisections at C_1 and C_5.
44. Extremely faint.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	293 8	15.2	15.2	5.3	7.9	24	. .	370	. .	140	. .	63.0	293 12 20.6	. .	− 2 13.7	344 16 28.1	+ 1.5
2	43 40	15.9	15.6	5.9	9.1	27	735	740	. .	. .	. .	63.0	43 43 28.7	. .	+ 55.2	94 50 45.1	+ 0.6
3	307 28	11.5	12.0	1.5	4.9	26	685	700	700	690	625	63.0	307 31 47.6	. .	− 1 15.1	358 36 53.7	− 0.3
4	45 16	15.0	17.1	11.3	10.1	28	. .	. .	. .	300	245	61.5	45 19 15.4	. .	+ 57.7	96 26 34.3	
5	69 6	4.8	5.6	25.3	0.1	27	. .	. .	. .	060	935	61.5	69 9 46.4	. .	+ 2 28.8	120 18 36.4	− 0.7
6	24 18	6.9	6.2	25.2	28.4	22	. .	350	. .	310	. .	61.5	24 22 59.0	. .	+ 25.9	75 29 46.1	− 0.6
7	321 56	5.2	6.2	26.2	29.1	25	. .	520	535	550	. .	61.5	322 0 10.0	. .	− 44.4	13 5 46.8	− 0.5
8	10 26	5.2	6.6	25.7	28.3	21	181	150	. .	119	098	61.5	10 31 17.6	. .	+ 10.5	61 37 49.3	0.0
9	310 14	4.2	5.5	23.5	29.0	27	000	978	962	920	950	61.5	310 17 49.4	. .	− 1 6.3	1 23 4.3	− 1.9
10	29 56	13.8	14.0	3.8	6.2	25	610	465	. .	. .	. .	61.5	30 0 2.9	. .	+ 32.5	81 6 56.6	
11	29 24	13.3	13.5	2.7	6.3	25	. .	. .	. .	439	405	61.5	29 28 3.8	. .	+ 31.8	80 34 56.8	
12	349 26	2.7	1.0	10.0	10.2	25	. .	730	. .	630	. .	61.5	349 30 3.8	. .	− 10.4	40 36 14.6	− 2.6
13	351 28	12.0	12.9	2.3	4.3	27	. .	235	. .	135	. .	61.5	351 31 38.8	. .	− 8.3	42 37 51.7	− 1.5
14	22 34	15.1	15.7	4.6	6.2	23	090	060	. .	002	950	61.5	22 38 39.7	. .	+ 23.2	73 45 24.1	+ 1.9
15	38 46	12.9	12.1	2.5	4.1	27	455	430	. .	. .	. .	62.2	38 49 36.4	. .	+ 46.9	89 56 44.5	+ 0.1
16	314 44	11.1	10.2	1.8	2.7	29	. .	. .	. .	. .	835	62.2	314 47 0.4	. .	− 58.8	5 52 22.8	−21.1
17	314 44	11.1	10.2	1.8	2.7	28	. .	. .	572	. .	. .	62.2	314 47 19.4	. .	− 58.8	5 52 41.8	− 2.1
18	43 40	13.6	12.9	4.0	6.2	27	. .	975	. .	920	. .	62.2	43 43 26.2	. .	+ 55.8	94 50 43.2	− 1.4
19	307 28	10.5	9.0	29.1	2.5	26	. .	795	905	915	. .	62.2	307 31 46.5	. .	− 1 16.0	358 36 51.7	− 0.3
20	18 20	3.2	3.7	22.8	26.7	28	500	480	. .	600	650	64.4	18 23 29.4	. .	+ 19.2	69 30 9.8	+ 2.5
21	336 22	9.5	8.6	29.0	0.6	27	. .	050	. .	140	. .	64.4	336 26 48.0	. .	− 25.2	27 32 44.0	+ 1.1
22	17 36	11.2	10.7	0.7	3.7	29	. .	065	. .	970	. .	64.4	17 39 14.8	. .	+ 18.4	68 45 54.4	+ 1.7
23	52 52	8.2	8.0	27.2	1.5	21	. .	965	. .	940	. .	64.4	52 57 5.5	. .	+ 1 16.6	104 4 43.3	+ 2.6
24	35 14	3.8	2.1	22.1	26.6	23	. .	552	. .	500	. .	64.4	35 18 46.6	. .	+ 41.0	86 25 48.8	+ 2.2
25	295 46	8.2	7.7	26.9	0.7	26	. .	960	. .	018	. .	64.4	295 49 48.5	. .	− 1 59.2	346 54 10.5	0.0
26	23.32	9.2	8.0	27.3	29.5	28	. .	682	. .	630	. .	64.4	23 35 23.3	. .	+ 25.3	74 42 9.8	+ 3.0
27	344 24	9.6	7.5	28.0	1.0	22	. .	198	160	128	. .	64.4	344 28 46.8	. .	− 16.1	35 34 51.9	+ 1.1
28	29 22	9.8	8.5	28.5	1.2	26	. .	. .	. .	615	580	64.4	29 25 53.1	. .	+ 32.8	80 32 47.1	+ 2.0
29	320 30	1.2	0.0	20.5	23.8	26	. .	935	820	750	. .	64.4	320 33 58.5	. .	− 47.7	11 39 32.0	− 0.4
30	38 46	12.4	11.9	0.9	3.9	27	. .	395	. .	365	. .	64.4	38 49 39.0	. .	+ 46.7	89 56 46.9	+ 2.7
31	61 28	6.2	5.5	25.3	29.2	23	. .	550	. .	480	. .	64.4	61 32 43.7	. .	+ 1 46.9	112 40 51.8	+ 5.6
32	293 8	10.4	9.8	29.5	3.3	24	. .	790	. .	660	. .	64.4	293 12 20.8	. .	− 2 14.8	344 16 27.2	+ 3.1
33	314 42	8.8	8.2	27.2	0.2	22	. .	275	. .	265	. .	64.4	314 47 1.6	. .	− 58.6	5 52 24.2	−18.5
34	314 42	8.8	8.2	27.2	0.2	21	. .	055	. .	092	. .	64.4	314 47 19.4	. .	− 58.6	5 52 42.0	− 0.7
35	43 40	27.5	26.5	16.5	21.0	28	. .	950	. .	872	. .	64.4	43 43 29.9	. .	+ 55.6	94 50 46.7	+ 2.1
36	307 28	7.8	8.6	27.0	0.5	27	125	170	175	152	120	64.4	307 31 46.2	. .	− 1 55.7	358 36 51.7	+ 0.7
37	49 18	7.5	5.8	25.5	28.7	28	. .	120	. .	075	. .	64.4	49 21 33.3	. .	+ 1 7.8	100 29 2.3	+ 2.2
38	19 46	13.5	12.7	1.7	3.6	24	. .	562	. .	480	. .	64.4	19 50 21.2	. .	+ 21 0	70 57 3.4	+ 2.2
39	354 0	4.2	3.5	24.0	27.5	22	. .	430	. .	415	. .	61.9	354 5 2.9	. .	− 6.0	45 10 18.1	+ 2.7
40	57 56	6.1	5.3	26.0	29.7	16	. .	400	. .	320	. .	61.9	58 2 30.3	. .	+ 1 32.9	109 10 24.4	
41	310 14	9 28.4	27.9	18.4	23.7	27	106	100	068	055	044	61.3	310 17 53.4	. .	− 1 6.2	1 23 8.4	− 0.7
42	26 28	8.0	10.2	29.5	2.1	27	605	590	. .	. .	. .	61.3	26 31 35.7	. .	+ 27.8	77 38 24.7	
43	25 56	10.5	12.4	1.3	4.1	26	. .	. .	. .	862	834	61.3	25 59 43.8	. .	+ 27.2	77 6 32.2	
44	5 52	4.2	3.6	22.3	25.2	25	814	. .	. .	. .	. .	61.4	5 56 10.3	. .	+ 5.7	57 2 37.2	+ 1.8
45	47 10	10 7.7	9.6	29.0	1.5	25	744	716	. .	578	544	61.4	47 14 5.3	. .	+ 59.7	98 21 26.2	+ 0.3
46	10 20	9.2	9.8	28.5	1.8	26	675	568	. .	458	478	61.4	10 23 51.6	. .	+ 10.1	61 30 22.9	+ 1.3
47	40 6	5.7	6.0	25.3	27.8	25	168	104	. .	074	010	61.4	40 10 17.1	. .	+ 46.7	91 17 25.0	+ 0.8
48	31 26	11.4	11.7	29.0	2.8	24	258	240	. .	190	180	61.4	31 30 25.5	. .	+ 33.9	82 37 20.6	+ 2.1
49	38 56	12.0	9.5	28.8	1.2	28	. .	. .	. .	638	580	64.3	38 59 20.9	. .	+ 46.7	90 6 28.8	+ 0.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
3	29.998	70.0	53.1
5	30.150	69.0	
15	30.088	76.0	83.9
16	29.566	72.5	41.3
17	. .	. .	40.4
21	29.780	66.0	63.3
22	30.040	71.5	54.0
37	30.060	72.0	50.3
41	29.996	64.2	68.2
42	29.990	65.2	72.7
44	29.978	70.2	78.4
45	29.978	69.0	76.5
47	29.974	70.5	76.2
49	. .	. .	55.9

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	− 11.9	+ 16.1	. .	+ 4.2
10	− 4.3	− 15 59.9	. .	− 16 4.2
11	− 4.3	+ 15 59.9	. .	+ 15 55.6
40	−47 22.0	+ 15 17.4	. .	− 32 4.6
42	− 3.9	− 15 56.2	. .	− 16 0.1
43	− 3.8	+ 15 56.2	. .	+ 15 52.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 23	1	β Leonis	F.	19.8	22.4	24.0	30.2	32.4	34.4	40.9	42.4	45.1	42 32.40	− 0.20	− 5.71	− 5.75	11 42 26.45	− 0.05
	2	γ Ursæ Majoris	F.	45.0	49.2	52.1	2.7	6.2	9.6	20.2	22.7	27.1	47 6.09	− 0.21	. .	− 5.75	11 47 0.13	− 0.09
	3	ο Virginis	F.	29.6	32.1	33.7	39.9	41.9	44.0	50.2	51.7	54.5	58 41.96	− 0.20	− 5.64	− 5.76	11 58 36.00	− 0.14
	4	4 Draconis	F.	. .	. .	54.4	4.6	14.2	24.9	34.5	. .	. .	6 14.47	− 0.30	. .	− 5.76	12 6 8.41	− 0.50
	5	η Virginis	F.	10.0	12.5	14.1	20.2	22.2	24.2	30.3	31.9	34.5	13 22.21	− 0.20	− 5.69	− 5.76	12 13 16.25	− 0.09
	6	κ Draconis, (R.)	F.	. .	. .	51.1	56.1	3.0	9.3	15.1	. .	. .	28 2.95	+ 0.48	. .	− 5.77	12 27 57.66	− 0.28
	7	α Canum Venat.	F.	47.9	51.3	53.2	1.2	3.8	6.3	14.3	16.2	19.6	50 3.76	− 0.21	− 5.70	− 5.78	12 49 57.77	− 0.08
	8	θ Virginis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . .	. .
	9	Polaris, S. P.	F.	. .	. .	30.0	7.0	42.0	16.0	53.0	. .	. .	10 41.60	+ 0.74	. .	− 5.78	1 10 36.56	+ 0.94
	10	μ^1 Bootis	F.	26.7	30.0	31.9	39.4	42.2	44.7	52.4	54.5	57.6	19 42.16	− 0.20	− 5.75	− 5.84	15 19 36.12	− 0.10
	11	α Coronæ Borealis	F.	4.5	7.4	9.1	16.0	18.3	20.7	27.5	29.2	32.1	29 18.31	− 0.20	− 5.81	− 5.84	15 29 12.27	− 0.03
	12	α Serpentis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	13	β Aquarii.	F.	36.2	38.9	40.5	46.6	48.7	50.7	56.8	58.4	0.9	24 48.63	− 0.20	− 6.00	− 5.99	21 24 42.44	+ 0.04
	14	ε Pegasi	F.	. .	. .	49.7	51.8	53.8	55.8	57.9	. .	. .	37 53.81	− 0.20	− 5.98	− 5.99	21 37 47.62	0.00
	15	Moon II.	F.	8.7	11.4	13.0	19.7	21.8	24.0	30.4	32.1	34.7	56 21.78	− 0.20	. .	− 6.00	21 56 15.66	−64.90
	16	α Aquarii	F.	59.8	2.4	3.9	10.0	12.0	14.0	20.2	21.8	24.3	59 12.04	− 0.20	− 6.03	− 6.00	21 59 5.84	+ 0.08
25	17	9 Draconis	E.	. .	. .	48.9	57.7	6.2	14.8	23.7	. .	. .	24 6.31	− 0.05	. .	− 6.62	10 23 59.64	− 0.44
	18	226 Cephei, S. P.	E.	. .	. .	20.4	11.9	4.1	55.9	47.5	. .	. .	30 4.01	− 0.25	. .	− 6.62	22 29 57.14	− 0.02
	19	l Leonis	E.	20.2	22.8	24.4	30.7	32.8	34.9	41.1	42.7	45.3	42 32.77	− 0.18	− 6.65	− 6.63	10 42 25.96	+ 0.03
	20	ι Cephei, S. P.	E.	. .	. .	18.8	14.6	9.4	4.3	59.1	. .	. .	45 9.27	− 0.21	. .	− 6.63	22 45 2.43	+ 0.31
	21	α Ursæ Majoris	E.	22.6	28.1	31.3	44.4	48.8	53.2	6.6	9.8	15.2	55 48.89	− 0.12	. .	− 6.63	10 55 42.14	− 0.02
	22	δ Leonis	E.	5.8	8.6	10.1	16.7	19.0	21.2	27.7	29.5	32.1	7 18.97	− 0.17	− 6.60	− 6.63	11 7 12.17	− 0.09
	23	δ Crateris	E.	45.9	48.3	49.9	56.2	58.3	0.4	6.7	8.2	10.9	12 58.31	− 0.21	− 6.71	− 6.64	11 12 51.46	+ 0.04
	24	τ Leonis	E.	10.5	13.0	14.6	20.6	22.7	24.7	30.8	32.4	34.8	21 22.68	− 0.19	− 6.61	− 6.64	11 21 15.85	− 0.05
	25	λ Draconis	E.	. .	. .	35.8	42.2	48.1	54.0	59.9	. .	. .	23 48.03	− 0.09	. .	− 6.64	11 23 41.30	+ 0.08
	26	υ Leonis	E.	13.1	15.6	17.0	23.4	25.4	27.4	33.5	35.0	37.5	30 25.32	− 0.20	− 6.72	− 6.64	11 30 18.48	+ 0.04
	27	γ Cephei, S. P.	E.	. .	. .	25.0	16.0	6.2	57.1	47.8	. .	. .	34 6.47	− 0.26	. .	− 6.65	23 33 59.56	+ 0.95
	28	β Leonis	E.	20.6	23.2	25.0	31.2	33.3	35.2	41.6	43.4	45.9	42 33.27	− 0.18	− 6.61	− 6.65	11 42 26.44	− 0.05
	29	ο Virginis	E.	30.5	33.0	34.7	40.8	42.9	45.0	51.1	52.8	55.1	58 42.88	− 0.19	− 6.58	− 6.66	11 58 36.03	− 0.10
	30	4 Draconis	E.	. .	. .	55.0	4.8	14.8	25.0	35.0	. .	. .	6 14.97	− 0.03	. .	− 6.66	12 6 8.28	− 0.53
	31	η Virginis	E.	11.0	13.7	15.0	21.0	23.1	25.2	31.2	33.0	35.4	13 23.18	− 0.20	− 6.67	− 6.66	12 13 16.32	− 0.01
	32	β Corvi	E.	28.6	31.4	33.1	39.6	41.7	44.0	50.7	52.3	55.2	27 41.84	− 0.23	− 6.60	− 6.67	12 27 34.94	− 0.02
	33	21 Cassiopeæ, S. P.	E.	. .	. .	24.8	17.5	10.0	3.1	55.1	. .	. .	37 10.14	− 0.25	. .	− 6.67	0 37 3.22	+ 0.30
	34	32^1 Camelopardalis	E.	. .	. .	. .	58.6	18.7	38.7	59.2	. .	. .	48 19.18	+ 0.12	. .	− 6.68	12 48 12.62	− 8.50
	35	32^2 Camelopardalis	E.	. .	. .	45.2	6.9	26.2	46.3	5.6	. .	. .	48 26.11	+ 0.12	. .	− 6.68	12 48 19.55	− 1.57
	36	θ Virginis	E.	9.0	11.6	13.2	19.2	21.3	23.3	29.5	31.0	33.4	3 21.28	− 0.20	− 6.70	− 6.68	13 3 14.40	− 0.02
	37	Polaris, S. P.	E.	. .	. .	32.0	9.5	43.5	20.0	58.0	. .	. .	10 44.10	− 1.25	. .	− 6.68	1 10 36.17	. .
	38	α Virginis	E.	16.5	19.2	20.7	26.8	29.0	31.1	37.2	38.9	41.4	18 28.98	− 0.21	− 6.74	− 6.69	13 18 22.08	+ 0.04
	39	α Draconis	E.	. .	. .	52.0	56.0	1.6	6.4	11.1	. .	. .	1 1.45	− 0.11	. .	− 6.71	14 0 54.63	− 0.19
	40	α Bootis	E.	39.1	41.7	43.4	49.7	51.9	54.1	0.7	2.4	5.1	9 52.01	− 0.18	− 6.66	− 6.71	14 9 45.12	− 0.02
	41	Venus, N.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	42	Moon II	F.	55.6	58.2	0.0	6.1	8.0	10.3	16.6	18.2	20.9	33 8.21	− 0.05	. .	− 7.04	23 33 1.12	−61.83
	43	β Ceti	F.	56.8	59.7	1.2	7.6	10.0	12.0	18.4	20.0	22.6	37 9.81	− 0.04	− 7.31	− 7.06	0 37 2.71	+ 0.30
	44	Polaris	F.	. .	. .	57.0	22.0	48.0	11.0	35.0	. .	. .	10 47.10	− 2.13	. .	− 7.07	1 10 37.60	+ 1.46
26	45	Sun I, S.	F.	26.4	29.1	30.6	36.9	39.0	41.1	47.5	49.0	51.6	14 39.02	− 0.07	. .	− 7.10	2 14 31.85	. .
	46	Sun II, N.	F.	. .	. .	. .	50.4	52.5	54.6	58.7	0.3	3.0	16 50.13	− 0.08	. .	− 7.10	2 16 42.96	. .
	47	Mercury, (center)	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	48	η Tauri	F.	38.0	40.8	42.6	49.3	51.5	53.6	0.5	2.2	5.0	39 51.50	− 0.08	− 7.19	− 7.13	3 39 44.29	+ 0.07
	49	α Tauri	F.	21.0	23.7	25.3	31.6	33.7	35.9	42.2	43.8	46.4	28 33.73	− 0.07	− 7.11	− 7.15	4 28 26.51	− 0.06

4, 6, 17, 18, 20, 27, 30, 34, 35. Bisections at C_1 and C_5.
23, 25, 34, 35, 37. Unsteady.
48. Extremely faint.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	23 32	14.8	12.4	1.3	3.7	28	572	478	. .	. .	. .	64.3	23 35 22.3	. .	+ 25.2	74 42 8.7	+ 2.0
2	344 24	6.8	5.0	24.2	27.0	23	. .	400	. .	286	. .	64.3	344 28 47.6	. .	− 16.1	35 34 52.7	+ 2.1
3	29 22	9.8	8.5	27.5	0.2	26	796	728	. .	640	592	64.3	29 25 52.9	. .	+ 32.7	80 32 46.8	+ 1.7
4	320 30	4.7	3.1	22.2	26.0	26	. .	676	. .	646	. .	64.3	320 33 58.4	. .	− 47.6	11 39 32.0	− 0.2
5	38 46	5.0	4.8	24.5	26.7	28	060	972	. .	912	870	64.3	38 49 37.2	. .	+ 46.6	89 56 45.0	+ 0.8
6	211 34	8.2	7.6	26.8	0.6	33	166	. .	. .	. .	214	64.3	211 36 13.6	. .	+ 35.7	19 29 31.9	− 3.5
7	359 48	10 8.2	6.7	26.1	28.4	24	828	810	. .	744	736	64.3	359 52 24.0	. .	− 0.1	50 58 45.1	+ 1.9
8	43 40	10.0	8.1	28.2	1.6	28	248	240	. .	214	188	64.3	43 43 31.9	. .	+ 55.5	94 50 48.6	+ 4.0
9	307 28	6.6	5.5	23.7	28.2	27	252	318	267	235	212	64.3	307 31 46.9	. .	− 1 15.5	358 36 52.6	+ 1.8
10	1 0	8.6	6.5	26.3	29.0	27	702	696	. .	550	545	64.3	1 3 40.3	. .	+ 1.1	52 10 2.6	+ 1.7
11	11 40	7.3	5.6	24.9	27.3	25	. .	178	. .	040	. .	64.3	11 44 19.8	. .	+ 12.2	62 50 53.2	+ 2.1
12	31 58	5.1	3.7	22.6	26.6	22	. .	924	. .	818	. .	64.3	32 2 55.7	. .	+ 37.5	83 9 54.4	+ 2.1
13	44 56	2.4	2.6	23.3	27.4	21	784	. .	. .	. .	656	64.3	45 1 13.7	. .	+ 58.8	96 8 33.7	+ 1.8
14																	
15																	
16	39 46	8.2	7.7	27.4	1.7	26	. .	470	. .	378	. .	64.3	39 49 57.1	. .	+ 48.2	90 57 6.5	+ 0.7
17	322 28	9.5	9.0	29.0	0.8	29	. .	020	. .	080	. .	65.1	322 31 16.9	. .	− 44.8	13 36 53.3	− 0.9
18	294 24	10.0	8.7	29.4	1.2	22	. .	660	. .	640	. .	65.1	294 28 54.5	. .	− 2 7.7	345 33 8.0	+ 1.7
19	27 34	12.5	10.5	29.8	2.2	21	. .	280	. .	185	. .	65.1	27 39 14.8	. .	+ 30.7	78 46 6.7	+ 0.3
20	284 24	9.2	8.0	27.2	29.7	25	. .	963	. .	925	. .	65.1	284 28 5.5	. .	− 3 43.2	335 30 43.5	− 0.8
21	336 22	8.5	6.3	26.8	28.3	23	. .	685	. .	660	. .	65.1	336 26 41.9	. .	− 25.6	27 32 37.5	− 4.8
22	17 36	12.2	10.5	0.8	2.3	29	. .	250	. .	170	. .	65.1	17 39 12.7	. .	+ 18.7	68 45 52.6	+ 0.2
23	52 52	13.5	11.5	0.8	3.3	22	. .	040	. .	900	. .	65.1	52 57 2.4	. .	+ 1 17.7	104 4 41.3	+ 0.6
24	35 14	8.5	5.9	25.1	29.0	23	. .	585	. .	480	. .	65.1	35 18 43.8	. .	+ 41.7	86 25 46.7	+ 0.2
25	328 48	15.3	13.8	4.1	5.7	29	. .	230	. .	210	. .	65.1	328 51 9.2	. .	− 35.6	19 56 54.8	− 1.9
26	38 56	10.5	8.5	28.8	1.1	28	. .	830	. .	730	. .	65.1	38 59 20.9	. .	+ 47.6	90 6 29.7	+ 1.4
27	295 46	6.3	6.0	25.6	28.7	27	. .	115	. .	082	. .	65.1	295 49 49.6	. .	− 2 1.2	346 54 9.6	− 0.4
28	23 32	9.0	7.5	26.2	28.5	28	. .	010	. .	925	. .	65.1	23 35 20.0	. .	+ 25.8	74 42 7.0	+ 0.5
29	29 22	7.5	6.3	26.3	28.5	27	. .	055	. .	945	. .	65.1	29 25 50.7	. .	+ 33.3	80 32 45.2	+ 0.3
30	320 30	9.7	9.0	28.1	1.7	26	. .	460	. .	440	. .	65.1	320 33 56.7	. .	− 48.6	11 39 29.3	− 2.3
31	38 46	8.6	6.9	26.0	0.2	27	. .	925	. .	880	. .	65.1	38 49 36.1	. .	+ 47.6	89 56 44.9	+ 0.7
32	61 28	9.7	8.7	28.5	0.7	23	. .	900	. .	750	. .	65.1	61 32 36.8	. .	+ 1 49.0	112 40 47.0	+ 0.5
33	293 8	11.0	9.2	28.0	2.0	24	. .	. .	790	. .	. .	65.1	293 12 21.6	. .	− 2 17.6	344 16 25.2	+ 1.8
34	314 42	6.5	4.3	25.0	27.7	22	. .	450	. .	420	. .	65.1	314 47 1.8	. .	− 59.8	5 52 23.2	−18.7
35	314 42	6.5	4.3	25.0	27.7	21	. .	160	. .	140	. .	65.1	314 47 21.4	. .	− 59.8	5 52 42.8	+ 0.9
36	43 40	10.0	8.0	28.3	1.8	28	. .	410	. .	360	. .	65.1	43 43 27.1	. .	+ 56.9	94 50 45.2	+ 0.7
37	307 28	13.5	10.7	1.3	4.7	26	920	910	865	855	860	65.1	307 31 46.9	. .	− 1 17.4	358 36 50.7	+ 0.5
38	49 18	9.5	7.5	28.5	1.0	28	. .	210	. .	120	. .	65.1	49 21 30.8	. .	+ 1 9.4	90 29 1.4	+ 1.3
39	333 50	2.1	0.9	21.5	24.1	25	. .	825	. .	800	. .	65.1	333 54 13.9	. .	− 29.3	25 0 5.8	− 2.1
40	18 58	11.1	8.7	28.5	0.8	27	. .	215	. .	158	. .	65.1	19 1 45.3	. .	+ 20.7	70 8 27.2	+ 1.7
41	42 36	4.1	4.0	24.3	28.2	26	. .	990	. .	984	. .	61.8	42 39 49.6	. .	+ 53.4	93 47 4.2	
42																	
43	57 30	3.5	4.5	24.6	27.5	25	. .	632	. .	554	. .	61.8	57 34 10.9	. .	+ 1 30.3	108 42 2.4	− 3.4
44	310 14	10 3.2	2.4	22.2	27.4	26	595	650	654	656	664	61.8	310 17 56.4	. .	− 1 7.4	1 23 10.2	+ 0.2
45	25 28	9 21.3	22.1	11.5	15.2	22	955	940	. .	. .	. .	61.8	25 32 49.5	. .	+ 27.1	76 39 37.8	
46	24 56	7.0	8.3	28.4	0.4	22	. .	. .	. .	. .	070	61.8	25 1 0.7	. .	+ 26.5	76 7 48.4	
47	19 24	3.9	4.4	24.0	26.7	22	790	810	. .	760	760	61.8	19 28 54.5	. .	+ 20.0	70 35 35.7	
48	15 8	9.1	8.9	27.9	0.4	28	. .	310	. .	290	. .	61.8	15 11 25.7	. .	+ 15.3	66 18 2.2	− 1.0
49	22 34	2.2	2.9	22.0	24.4	24	. .	004	. .	954	. .	61.8	22 38 37.6	. .	+ 23.5	73 45 22.3	0.0

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	30.128	71.0	55.2
5	. .	. .	54.2
8	. .	. .	53.1
10	. .	. .	50.0
12	30.160	71.0	50.0
13	30.214	64.5	49.0
16	30.210	63.0	56.8
18	30.280	71.0	52.0
37	30.354	72.0	44.0
42	30.412	66.0	59.6
43	30.400	66.2	62.8
44	30.388	66.2	65.7
46	30.330	67.0	69.0
47	. .	. .	71.0
48	. .	. .	71.4
49	30.296	69.2	72.8

For a summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
41	− 9.5	+ 13.7	. .	+ 4.2
45	− 3.7	− 15 54.7	. .	− 15 58.4
46	− 3.7	+ 15 54.7	. .	+ 15 51.0
47	− 2.5	. .	0.0	− 2.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 26	1	ι Aurigæ. . . .	F.	23.1	26.0	27.9	35.2	37.7	40.0	47.4	49.1	52.2	48 37.62	— 0.09	— 7.07	— 7.16	4 48 30.37	— 0.13
	2	β Orionis. . . .	F.	11.4	14.0	15.4	21.6	23.7	25.7	31.8	33.5	36.0	8 23.68	— 0.05	— 7.27	— 7.16	5 8 16.37	0.00
	3	β Tauri	F.	56.8	59.5	1.3	8.3	10.5	12.9	19.7	21.5	24.5	18 10.56	— 0.09	— 7.14	— 7.17	5 18 3.30	— 0.05
	4	δ Orionis. . . .	F.	16.3	18.5	20.1	26.2	28.2	30.2	36.3	37.9	40.4	25 28.23	— 0.06	— 7.24	— 7.17	5 25 21.00	+ 0.04
	5	α Orionis. . . .	F.	1.8	4.6	6.2	12.3	14.4	16.5	22.5	24.0	26.6	48 14.32	— 0.06	— 7.15	— 7.18	5 48 7.08	— 0.06
	6	δ Leonis	F.	6.5	9.2	10.8	17.4	19.6	21.7	28.2	29.8	32.6	7 19.53	— 0.08	— 7.26	— 7.31	11 7 12.14	— 0.11
	7	δ Crateris . . .	F.	46.2	48.9	50.4	56.8	58.8	0.8	7.2	8.8	11.4	12 58.81	— 0.04	— 7.39	— 7.31	11 12 51.46	+ 0.05
	8	τ Leonis	F.	. .	. .	19.0	21.1	23.2	25.2	27.4	. .	. .	21 23.19	— 0.06	— 7.26	— 7.31	11 21 15.82	— 0.07
	9	υ Leonis	F.	13.6	16.2	17.7	23.7	25.8	28.0	34.0	35.5	38.0	30 25.83	— 0.06	— 7.38	— 7.32	11 30 18.45	+ 0.02
	10	β Leonis, (R.) . .	F.	21.0	22.7	25.2	31.5	33.7	35.9	41.8	43.8	46.0	42 33.62	+ 0.08	. .	— 7.32	11 42 26.38	— 0.10
	11	γ Ursæ Majoris . .	F.	46.4	50.6	53.4	4.0	7.5	11.0	21.4	24.0	28.5	47 7.42	— 0.14	. .	— 7.32	11 46 59.96	— 0.20
	12	ο Virginis . . .	F.	31.0	33.6	35.2	41.3	43.4	45.5	51.7	53.3	55.9	58 43.43	— 0.07	— 7.26	— 7.33	11 58 36.03	— 0.09
	13	12 Canum Venat. .	F.	49.6	52.7	54.7	2.5	5.2	7.7	15.8	17.6	21.0	50 5.20	— 0.10	— 7.26	— 7.35	12 49 57.75	— 0.09
	14	θ Virginis . . .	Ha.	9.4	12.0	13.6	19.7	21.6	23.7	29.9	31.5	33.9	3 21.70	— 0.05	— 7.27	— 7.35	13 3 14.30	— 0.12
	15	Polaris, S. P. . .	F.	. .	. .	33.0	7.0	43.0	18.0	54.0	. .	. .	10 42.68	+ 2.31	. .	— 7.35	1 10 37.64	+ 1.36
	16	ζ Virginis . . .	F.	0.6	3.2	4.7	10.8	13.0	14.9	21.0	22.6	25.1	28 12.88	— 0.06	— 7.43	— 7.36	13 28 5.46	+ 0.07
	17	η Bootis	Ha.	25.3	27.9	29.5	35.9	38.2	40.3	46.7	48.3	51.2	48 38.14	— 0.08	— 7.18	— 7.37	13 48 30.69	— 0.24
	18	α Coronæ Borealis .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	19	α Serpentis . . .	F.	48.2	50.8	52.5	58.7	0.8	2.8	8.7	10.3	12.9	38 0.63	— 0.06	— 7.44	— 7.41	15 37 53.16	+ 0.05
	20	ε Serpentis . . .	Ha.	16.5	19.1	20.6	26.7	28.8	30.8	37.0	38.6	41.0	44 28.79	— 0.06	— 7.32	— 7.31	15 44 21.42	+ 0.01
27	21	β Corvi	Ha.	29.4	32.2	33.9	40.4	42.6	44.8	51.6	53.2	56.0	27 42.68	— 0.16	— 7.62	— 7.66	12 27 34.86	— 0.09
	22	21 Cassiopeæ, S. P. .	Ha.	. .	. .	26.4	18.3	11.4	3.2	56.3	. .	. .	37 11.16	— 0.35	. .	— 7.66	0 37 3.15	+ 0.15
	23	32¹ Camelopardalis .	Ha.	21.2	46.3	1.3	0.9	21.2	41.3	41.3	55.3	21.1	48 21.10	+ 0.33	. .	— 7.66	12 48 13.77	— 7.21
	24	32² Camelopardalis .	Ha.	29.3	54.3	9.3	9.3	29.0	48.3	48.6	4.0	28.6	48 28.97	+ 0.33	. .	— 7.66	12 48 21.64	+ 0.66
	25	Polaris, S. P. . .	Ha.	. .	. .	. .	11.0	. .	. .	57.0	. .	. .	10 46.65	— 2.30	. .	— 7.67	1 10 36.68	. .
	26	ζ Virginis . . .	Ha.	1.0	3.5	5.0	11.2	13.2	15.2	21.3	23.0	25.4	28 13.20	— 0.15	— 7.66	— 7.68	13 28 5.37	— 0.02
	27	η Ursæ Majoris . .	Ha.	15.2	19.2	21.7	31.0	34.4	37.6	47.0	49.4	53.5	42 34.33	— 0.10	. .	— 7.68	13 42 26.55	— 0.08
	28	η Bootis	Ha.	25.8	28.4	30.2	36.6	38.7	40.9	47.3	48.9	51.6	48 38.71	— 0.14	— 7.68	— 7.68	13 48 30.89	— 0.05
	29	α Draconis . . .	Ha.	33.6	39.8	43.4	57.8	2.7	7.3	21.9	25.5	31.6	1 2.62	— 0.05	. .	— 7.69	14 0 54.88	+ 0.06
	30	α Bootis	Ha.	. .	. .	. .	. .	. .	. .	1.9	3.3	6.0	9 53.07	— 0.13	— 7.78	— 7.69	14 9 45.25	+ 0.09
	31	θ Bootis	Ha.	35.8	40.2	42.7	52.8	56.3	59.4	9.4	11.8	15.9	20 56.03	— 0.09	. .	— 7.70	14 20 48.24	+ 0.19
29	32	Polaris	Ha.	. .	. .	2.0	27.0	52.0	16.0	42.0	. .	. .	10 52.30	— 1.00	. .	— 8.86	1 10 42.44	+ 4.82
30	33	Sun I, N. . . .	Ha.	38.2	40.8	42.3	48.8	51.0	53.0	59.3	1.0	3.5	29 50 88	— 0.01	. .	— 8.88	2 29 41.99	. .
	34	Sun II, S. . . .	Ha.	50.0	52.7	54.3	0.8	2.8	4.9	11.2	12.8	15.6	32 2.79	— 0.01	. .	— 8.88	2 31 53.90	. .
	35	Mercury I, (center)	Ha.	47.6	50.2	51.9	58.5	0.7	2.9	9.4	11.1	14.0	40 0.70	— 0.01	. .	— 8.90	3 39 51.79	+ 0.23
	36	α Tauri	Ha.	22.9	25.4	27.0	33.3	35.3	37.6	43.8	45.5	48.2	28 35.44	— 0.01	— 8.90	— 8.91	4 28 26.52	— 0.03
	37	β Orionis. . . .	Ha.	12.9	15.6	17.1	23.3	25.5	27.4	33.6	35.0	37.6	8 25.33	0.00	— 9.01	— 8.92	5 8 16.41	+ 0.08
	38	β Tauri	Ha.	58.4	1.3	3.0	10.0	12.2	14.6	21.4	23.2	25.9	18 12.22	— 0.02	— 8.91	— 8.92	5 18 3.28	— 0.03
	39	δ Orionis. . . .	Ha.	17.6	20.0	21.6	27.9	29.9	31.9	38.0	39.6	42.1	25 29.84	0.00	— 8.95	— 8.93	5 25 20.91	— 0.01
	40	ε Orionis. . . .	Ha.	32.9	35.2	36.8	42.9	45.0	47.0	53.0	54.7	57.1	29 44.96	0.00	— 8.95	— 8.93	5 29 36.03	— 0.01
	41	γ Ursæ Majoris . .	Ha.	. .	. .	2.5	5.7	9.4	12.9	16.5	. .	. .	47 9.42	— 0.23	. .	— 9.03	11 47 0.06	— 0.04
	42	ο Virginis . . .	Ha.	32.9	35.4	36.9	43.0	45.2	47.3	53.3	55.0	57.7	58 45.19	— 0.11	— 9.00	— 9.04	11 58 36.04	— 0.06
	43	4 Draconis . . .	Ha.	. .	. .	57.0	7.2	17.2	27.2	37.3	. .	. .	6 17.23	— 0.58	. .	— 9.04	12 6 7.59	— 0.92
	44	η Virginis . . .	Ha.	13.2	15.8	17.3	23.3	25.4	27.5	33.5	35.2	37.7	13 25.43	— 0.10	— 9.04	— 9.04	12 13 16.29	— 0.02
	45	β Corvi	Ha.	30.8	33.6	35.2	42.0	44.2	46.4	53.0	54.5	57.3	27 44.11	— 0.06	— 9.15	— 9.04	12 27 35.01	+ 0.07

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	5 52	5.0	4.4	23.5	26.2	25	848	784	. .	696	700	61.8	5 56 9.1	. .	+ 5.8	57 2 36.1	+ 0.5
2	47 10	11.8	12.7	1.4	3.4	25	. .	704	. .	614	. .	61.8	47 14 2.7	. .	+ 1 0.6	98 21 24.5	— 1.0
3	10 20	7.3	8.4	27.1	29.6	26	758	746	. .	762	708	61.8	10 23 50.6	. .	+ 10.3	61 30 22.1	+ 0.4
4	39 12	3.4	2.5	21.3	25.1	22	. .	928	. .	878	. .	61.8	39 16 54.1	. .	+ 45.8	90 24 1.1	— 0.6
5	31 26	9.0	8.0	27.5	0.2	24	. .	552	. .	438	. .	61.8	31 30 24.2	. .	+ 34.4	82 37 19.8	+ 1.5
6	17 36	10 15.9	14.6	4.5	5.6	28	894	864	. .	732	714	65.0	17 39 15.2	. .	+ 18.4	68 45 54.8	+ 2.6
7	52 52	9.4	8.5	28.2	0.7	22	. .	056	. .	924	. .	65.0	52 57 5.0	. .	+ 1 16.6	104 4 42.8	+ 2.1
8	35 14	6.3	5.4	25.0	27.0	23	. .	. .	. .	462	386	65.0	35 18 45.4	. .	+ 41.1	86 25 47.7	+ 1.3
9	38 56	6.2	5.0	25.2	27.2	29	. .	042	. .	968	. .	65.0	38 59 21.1	. .	+ 47.0	90 6 29.3	+ 1.0
10																	
11	344 24	4.1	2.4	22.5	24.5	23	. .	450	. .	614	. .	65.0	344 28 47.8	. .	— 16.1	35 34 52.9	+ 2.9
12	29 22	9.3	8.4	27.9	29.4	26	828	798	. .	736	680	65.0	29 25 52.7	. .	+ 32.8	80 32 46.7	+ 1.9
13	359 48	0.3	28.6	18.4	20.2	25	530	486	. .	350	314	65.0	359 52 22.9	. .	— 0.1	50 58 44.0	+ 1.5
14	43 40	10 14.8	14.9	4.6	7.0	27	. .	940	. .	890	. .	65.0	43 43 28.4	. .	+ 55.7	94 50 45.3	+ 0.8
15	307 28	9 23.8	22.8	11.9	16.0	28	208	208	160	182	168	65.0	307 31 45.8	. .	— 1 15.8	358 36 51.2	+ 1.4
16	38 44	10 6.2	5.5	24.5	27.2	23	. .	504	. .	350	. .	65.0	38 48 46.5	. .	+ 46.9	89 55 54.6	+ 1.6
17	19 46	10 9.0	8.5	28.2	29.5	25	. .	055	. .	955	. .	65.0	19 50 19.0	. .	+ 21.1	70 57 1.3	+ 0.7
18	11 40	5.3	3.9	23.8	26.4	25	. .	392	. .	302	. .	65.0	11 44 18.3	. .	+ 12.2	62 50 51.7	+ 1.1
19	31 58	8.0	6.9	26.3	29.3	22	. .	706	. .	628	. .	65.0	32 2 56.4	. .	+ 36.6	83 9 54.2	+ 2.2
20	33 56	6.9	6.2	25.3	28.5	23	. .	290	. .	210	. .	65.0	34 0 48.4	. .	+ 39.5	85 7 49.1	+ 1.0
21	61 28	10 16.8	16.3	6.0	7.4	22	. .	800	. .	735	. .	64.0	61 32 44.6	. .	+ 1 44.1	112 40 49.9	+ 3.3
22	293 8	10 2.1	1.0	20.3	24.7	25	. .	. .	. .	675	685	64.0	293 12 15.6	. .	— 2 11.2	344 16 25.6	+ 2.7
23	314 42	12.0	11.5	0.8	2.4	22	. .	545	. .	. .	. .	64.0	314 46 55.4	. .	— 57.0	5 52 19.6	—21.8
24	314 42	12.0	11.5	0.8	2.4	21	. .	370	. .	. .	. .	64.0	314 47 13.3	. .	— 57.0	5 52 37.5	— 3.9
25	307 28	17.2	17.0	5.0	8.1	26	. .	. .	. .	. .	895	64.0	307 31 41.0	. .	— 1 13.5	358 36 48.7	— 0.9
26	38 44	10 9.5	8.3	26.9	29.6	23	. .	145	. .	090	. .	64.0	38 48 47.5	. .	+ 45.5	89 55 54.2	+ 1.3
27	348 52	3.7	2.5	21.4	24.4	26	. .	570	. .	475	. .	64.0	348 56 1.4	. .	— 11.1	40 2 11.5	— 0.7
28	19 46	10.4	10.5	29.3	0.0	24	. .	885	. .	775	. .	64.0	19 50 20.0	. .	+ 20.4	70 57 1.6	+ 1.2
29	333 50	2.1	1.2	19.5	23.0	25	. .	935	. .	960	. .	64.0	333 54 12.1	. .	— 27.8	25 0 5.5	— 1.8
30	18 58	5.4	5.5	23.9	26.0	27	. .	. .	. .	330	315	64.0	19 1 45.6	. .	+ 19.6	60 8 26.4	+ 1.3
31	346 22	8.2	8.0	25.9	28.0	23	. .	535	. .	460	. .	64.0	346 26 43.2	. .	— 13.7	37 32 50.7	— 0.2
32	310 14	10.4	11.0	0.0	2.5	26	. .	215	230	260	. .	64.5	310 17 58.0	. .	— 1 7.0	1 23 12.2	+ 1.0
33	23 42	17.0	16.0	4.5	4.0	26	440	500	. .	. .	. .	64.5	23 45 50.8	. .	+ 24.9	74 52 36.9	
34	24 14	10.3	9.7	28.7	2.5	27	. .	. .	. .	655	655	64.5	24 17 36.3	. .	+ 25.5	75 24 23.0	
35	17 6	10 14.4	14.5	4.3	5.4	23	210	170	. .	090	110	64.5	17 10 41.7	. .	+ 17.4	68 17 20.3	
36	22 34	15.1	15.3	4.0	5.1	23	370	320	. .	270	260	64.5	22 38 39.0	. .	+ 23.5	73 45 23.7	+ 1.5
37	47 10	16.9	17.6	6.5	8.4	25	. .	505	. .	440	. .	64.5	47 14 3.2	. .	+ 1 0.8	98 21 25.2	+ 0.1
38	10 20	16.1	16.4	5.5	7.0	26	. .	330	. .	290	. .	64.5	10 23 51.7	. .	+ 10.3	61 30 23.2	+ 1.3
39	39 12	16.0	16.1	4.7	7.3	22	. .	205	. .	100	. .	64.5	39 16 55.3	. .	+ 46.0	90 24 2.5	+ 1.1
40	40 6	16.2	15.7	5.2	7.0	24	. .	690	. .	630	. .	64.5	40 10 17.0	. .	+ 47.5	91 17 25.7	+ 2.1
41	344 24	15.3	13.5	1.0	3.1	23	. .	. .	. .	035	070	65.1	344 28 44.6	. .	— 16.0	35 34 49.8	+ 0.7
42	29 22	17.1	15.1	3.1	5.0	26	. .	475	. .	440	. .	65.1	29 25 51.1	. .	+ 32.5	80 32 44.8	+ 0.3
43	320 30	15.0	14.7	3.0	4.9	26	. .	302	. .	. .	. .	65.1	320 33 55.0	. .	— 47.4	11 39 28.8	— 1.6
44	38 46	17.2	15.9	4.4	5.5	27	. .	385	. .	320	. .	65.1	38 49 36.7	. .	+ 46.7	89 56 44.6	+ 0.6
45	61 28	16.5	15.8	4.4	6.7	23	. .	130	. .	075	. .	65.1	61 32 41.5	. .	+ 1 46.0	112 40 48.7	+ 1.8

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
3	. .	. .	73.8
5	30.250	70.8	73.8
7	30.230	69.5	55.8
13	30.220	68.0	52.8
16	. .	. .	52.0
17	30.214	69.0	51.3
20	30.186	70.3	50.0
21	30.022	74.0	64.1
25	. .	. .	64.5
26	. .	. .	64.2
30	. .	. .	63.5
31	30.012	74.0	. .
32	30.072	64.0	63.2
33	30.056	65.5	66.5
35	30.035	66.5	68.6
36	30.011	67.0	69.6
37	. .	. .	70.9
40	30.006	67.5	70.5
41	30.022	69.0	55.2
44	. .	. .	55.2

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
33	— 3.5	+ 15 53.0	. .	+ 15 49.5
34	— 3.6	— 15 53.0	. .	— 15 56.0
35	— 2.5	. . .	0.0	— 2.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 30	1	21 Cassiopeæ, S. P.	Ha.	57.4	48.2	43.0	20.0	12.4	5.0	42.4	36.2	27.2	37 12.42	+ 0.31	. .	− 9.05	0 37 3.68	+ 0.53
	2	32¹ Camelopardalis	Ha.	22.3	47.5	2.3	2.0	21.9	41.3	41.5	56.9	21.3	48 21.89	− 1.09	. .	− 9.05	12 48 11.75	− 8.94
	3	32² Camelopardalis	Ha.	30.7	54.9	10.2	9.3	28.7	49.7	48.7	5.0	29.7	48 29.65	− 1.09	. .	− 9.05	12 48 19.51	− 1.18
	4	Polaris, S. P.	Ha.	. .	. .	36.0	14.0	47.0	25.0	1.0	. .	. .	10 48.10	+ 4.21	. .	− 9.05	1 10 43.26	+ 5.40
	5	α Virginis	Ha.	18.7	21.2	22.9	29.0	31.1	33.2	39.3	41.0	43.7	18 31.12	− 0.08	− 9.00	− 9.06	13 18 21.98	− 0.07
	6	ζ Virginis	Ha.	2.3	4.9	6.5	12.5	14.6	16.6	22.6	24.2	26.7	28 14.54	− 0.10	− 9.04	− 9.06	13 28 5.38	− 0.02
	7	η Ursæ Majoris	Ha.	16.7	20.7	23.2	32.4	35.7	38.8	48.3	50.8	54.9	42 35.72	− 0.20	. .	− 9.07	13 42 26.45	− 0.18
	8	η Bootis	Ha.	27.0	29.8	31.0	38.0	40.0	42.2	48.7	50.3	53.0	48 40.00	− 0.12	− 8.98	− 9.07	13 48 30.81	− 0.14
	9	50 Cassiopeæ, S. P.	Ha.	7.7	59.6	54.7	35.3	28.3	22.2	2.6	58.0	49.8	52 28.69	+ 0.25	. .	− 9.07	1 52 19.87	+ 0.36
	10	α Draconis	Ha.	35.0	41.0	44.6	59.0	4.0	8.6	23.2	26.9	32.8	1 3.90	− 0.30	. .	− 9.07	14 0 54.53	− 0.29
	11	α Bootis	Ha.	41.4	44.2	45.7	52.0	54.4	56.6	3.0	4.7	7.3	9 54.37	− 0.12	− 9.08	− 9.07	14 9 45.18	+ 0.01
May 1	12	Polaris	F.	. .	. .	3.0	28.0	. .	. .	40.0	. .	. .	10 52.73	− 3.68	. .	− 9.64	1 10 39.41	+ 0.78
2	13	σ Virginis	F.	33.6	36.3	37.8	43.9	46.1	48.2	54.3	55.8	58.3	58 46.03	− 0.17	− 9.79	− 9.78	11 58 35.08	− 0.01
	14	η Virginis	F.	14.1	16.4	18.1	24.3	26.2	28.3	34.3	36.0	38.5	13 26.24	− 0.16	− 9.80	− 9.78	12 13 16.30	0.00
	15	β Corvi	F.	31.7	34.4	36.2	42.7	44.9	47.2	53.8	55.5	58.2	27 44.96	− 0.14	− 9.93	− 9.78	12 27 35.04	+ 0.11
	16	α Canum Venat.	F.	. .	. .	2.5	5.0	7.6	10.4	13.0	. .	. .	50 7.72	− 0.22	− 9.69	− 9.79	12 49 57.71	− 0.10
	17	θ Virginis	F.	12.1	14.7	16.2	22.3	24.4	26.4	32.6	34.1	36.6	3 24.38	− 0.16	− 9.84	− 9.79	13 3 14.43	+ 0.01
	18	Polaris, S. P.	F.	. .	. .	34.0	10.0	47.0	23.0	58.0	. .	. .	10 45.90	+ 3.41	. .	− 9.79	1 10 39.52	+ 0.63
	19	α Virginis	F.	19.7	22.2	23.7	30.0	32.0	34.1	40.2	41.7	44.4	18 32.00	− 0.15	− 9.81	− 9.79	13 18 22.06	+ 0.01
	20	ζ Virginis	F.	3.2	5.6	7.2	13.3	15.4	17.4	23.6	25.0	27.5	28 15.36	− 0.16	− 9.80	− 9.79	13 28 5.41	+ 0.01
	21	η Ursæ Majoris	F.	17.5	21.5	24.0	33.2	36.6	39.6	49.2	51.6	55.6	42 36.53	− 0.25	. .	− 9.80	13 42 26.48	− 0.14
	22	η Bootis	F.	27.9	30.5	32.2	38.6	40.8	43.0	49.5	51.1	53.8	48 40.82	− 0.18	− 9.74	− 9.80	13 48 30.84	− 0.11
	23	5 Ursæ Minoris	F.	13.0	23.6	30.7	56.4	4.8	13.4	39.5	45.6	56.9	28 4.88	− 0.49	. .	− 9.81	14 27 54.58	+ 0.08
	24	ε Bootis	F.	16.0	19.0	20.8	27.6	30.0	32.1	39.1	40.8	43.7	39 29.90	− 0.20	− 9.77	− 9.81	14 39 19.89	− 0.06
	25	β Ursæ Minoris	F.	. .	. .	5.7	13.4	20.7	28.4	36.5	. .	. .	51 20.99	− 0.46	. .	− 9.81	14 51 10.62	− 0.31
	26	β Bootis	F.	. .	. .	9.1	11.8	14.6	17.3	19.9	. .	. .	57 14.56	− 0.22	. .	− 9.82	14 57 4.53	+ 0.02
	27	β Libræ	F.	0.0	2.4	4.0	10.0	12.1	14.2	20.4	21.9	24.4	10 12.16	− 0.15	− 9.86	− 9.82	15 10 2.19	+ 0.04
	28	μ Bootis	F.	30.8	33.9	36.1	43.5	46.3	48.8	56.7	58.6	1.9	19 46.29	− 0.22	− 9.75	− 9.82	15 19 36.25	− 0.08
	29	α Coronæ Borealis	F.	8.6	11.5	13.2	20.1	22.3	24.6	31.6	33.3	36.1	29 22.37	− 0.20	− 9.75	− 9.82	15 29 12.35	− 0.07
	30	α Serpentis	F.	50.8	53.6	55.1	1.2	3.2	5.2	11.4	13.0	15.6	38 3.23	− 0.17	− 9.85	− 9.82	15 37 53.24	+ 0.05
	31	ε Serpentis	F.	19.2	2.7	23.2	29.3	31.4	33.5	39.7	41.2	43.8	44 31.44	− 0.17	− 9.77	− 9.82	15 44 21.45	− 0.05
4	32	Sun I, S.	E.	. .	. .	. .	. .	. .	. .	19.1	20.6	23.5	45 10.66	− 0.15	. .	−10.20	2 45 0.31	. .
	33	Sun II, N.	E.	. .	. .	19.0	21.1	23.2	25.4	27.5	. .	. .	47 23.25	− 0.15	. .	−10.20	2 47 12.90	. .
	34	α Tauri	E.	24.3	26.9	28.5	34.8	36.9	39.0	45.4	47.0	49.6	28 36.93	− 0.15	−10.26	−10.23	4 28 26.55	+ 0.01
	35	β Orionis	E.	14.3	17.0	18.5	24.6	26.7	28.7	34.9	36.4	39.0	2 26.68	− 0.12	−10.26	−10.24	5 8 16.32	+ 0.01
	36	β Tauri	E.	59.8	2.7	4.4	11.4	13.7	16.2	23.0	24.8	27.6	18 13.73	− 0.16	−10.30	−10.24	5 18 3.33	+ 0.04
	37	ε Orionis	E.	34.2	38.2	42.3	44.3	46.3	48.4	50.4	54.5	58.6	29 46.36	− 0.13	−10.25	−10.24	5 29 35.99	0.00
	38	Moon I.	E.	18.5	21.4	23.1	29.9	32.2	34.2	40.8	42.7	45.5	55 32.03	− 0.16	. .	−10.25	5 55 21.62	+67.27
	39	α Ursæ Majoris	E.	25.8	31.5	34.5	48.0	52.5	56.5	9.7	13.0	18.9	55 52.27	− 0.24	. .	−10.33	10 55 41.70	− 0.17
	40	δ Leonis, (R.)	E.	9.1	11.7	13.5	. .	22.3	. .	31.0	32.6	35.3	7 22.21	+ 0.19	. .	−10.33	11 7 11.99	− 0.18
	41	δ Crateris	E.	49.2	51.7	53.3	59.5	1.6	3.6	10.1	11.5	14.1	13 1.62	− 0.11	−10.28	−10.33	11 12 51.18	− 0.13
	42	τ Leonis	E.	14.1	16.6	18.3	24.2	26.2	28.3	34.4	35.9	38.5	21 26.28	− 0.13	−10.35	−10.34	11 21 15.81	− 0.01
	43	λ Draconis	E.	. .	. .	39.6	45.6	51.6	57.6	3.6	. .	. .	23 51.63	− 0.28	. .	−10.34	11 23 41.01	+ 0.14
	44	υ Leonis	E.	16.6	19.2	20.7	26.8	28.8	30.8	37.0	38.5	40.9	30 28.81	− 0.13	−10.35	−10.34	11 30 18.34	− 0.03
	45	Polaris, S. P.	E.	. .	. .	. .	. .	. .	. .	40.0	. .	. .	10 28.00	. .	. .	. .	. . . .	. .
5	46	Polaris, S. P.	F.	. .	. .	37.0	12.0	48.0	23.0	58.0	. .	. .	10 47.10	+ 4.23	. .	−10.89	1 10 40.44	. .
	47	α Virginis	F.	20.6	23.3	24.8	31.0	33.1	35.3	41.6	43.2	45.5	18 33.16	− 0.16	−10.96	−10.90	13 18 22.10	+ 0.05
	48	η Bootis	F.	. .	. .	37.6	39.7	41.8	44.1	46.4	. .	. .	48 41.93	− 0.20	−10.82	−10.91	13 48 30.82	− 0.14

25. Bisections at sets B and D.
45. Uncertain; cloudy.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	293 8	14.3	12.5	0.5	4.1	24	. .	. .	. .	732	695	65.1	293 12 17.0	. .	− 2 13.9	344 16 24.3	+ 2.1
2	314 42	16.7	15.6	4.0	6.0	22	600	350	. .	. .	. .	65.1	314 46 57.7	. .	− 58.1	5 52 20.8	−19.8
3	314 42	16.7	15.6	4.0	6.0	21	365	120	. .	. .	. .	65.1	314 47 16.5	. .	− 58.1	5 52 39.6	− 1.0
4	307 28	14.0	12.9	0.3	3.7	27	120	125	130	160	078	65.1	307 31 43.1	. .	− 1 15.2	358 36 49.1	+ 0.4
5	49 18	14.3	12.7	0.7	3.2	27	. .	792	. .	750	. .	65.1	49 21 33.3	. .	+ 1 7.3	100 29 1.8	+ 1.6
6	38 44	10.5	9.1	27.0	0.0	23	. .	345	. .	250	. .	65.1	38 48 45.3	. .	+ 46.5	89 55 53.0	+ 0.2
7	348 52	14.0	11.5	0.3	2.1	26	130	075	. .	. .	. .	65.1	348 56 1.4	. .	− 11.3	40 2 11.3	− 0.1
8	19 46	16.6	15.4	3.5	5.0	24	665	665	. .	. .	. .	65.1	19 50 19.7	. .	+ 20.9	70 57 1.8	+ 1.8
9	290 40	15.5	14.6	2.0	5.5	27	. .	. .	. .	850	810	65.1	290 43 28.0	. .	− 2 31.8	341 47 17.4	+ 1.5
10	333 50	15.4	14.0	1.8	4.0	25	. .	290	. .	185	. .	65.1	333 54 11.7	. .	− 28.4	25 0 4.5	− 1.9
11	18 58	14.5	13.4	1.5	3.3	27	. .	030	. .	930	. .	65.1	19 1 45.1	. .	+ 20.0	70 8 26.3	+ 1.6
12	310 14	7.0	6.2	25.4	28.8	26	504	450	. .	. .	410	64.1	310 17 58.6	. .	− 1 6.6	1 23 13.2	+ 1.5
13	29 22	10 12.1	11.0	29.5	0.5	26	. .	775	. .	707	. .	64.1	29 25 50.1	. .	+ 32.7	80 32 44.0	− 0.3
14	38 46	3.6	2.5	20.4	23.1	28	. .	300	. .	176	. .	64.1	38 49 35.5	. .	+ 46.6	89 56 43.3	− 0.6
15	61 28	3.7	3.5	22.3	24.8	23	. .	994	. .	860	. .	64.1	61 32 40.1	. .	+ 1 46.7	112 40 48.0	+ 0.9
16	359 48	9 29.1	27.6	15.9	18.4	25	. .	. .	. .	506	540	64.1	359 52 21.0	. .	− 0.1	50 58 42.1	+ 0.8
17	43 40	9.5	7.5	26.8	29.3	28	434	364	. .	304	266	64.1	43 43 28.0	. .	+ 55.7	94 50 44.9	+ 0.5
18	307 28	8.2	6.0	23.5	27.8	27	370	412	426	444	470	64.1	307 31 43.8	. .	− 1 15.7	358 36 49.3	+ 1.1
19	49 18	10 12.9	11.5	0.8	2.5	27	935	835	. .	800	795	64.1	49 21 32.0	. .	+ 1 7.9	100 29 1.1	+ 0.9
20	38 44	12.0	9.2	29.0	0.5	23	190	168	. .	084	094	64.1	38 48 45.8	. .	+ 46.8	89 55 53.8	+ 1.1
21	348 52	13.5	11.5	1.2	2.1	26	. .	060	. .	920	. .	64.1	348 56 0.6	. .	− 11.4	40 2 10.4	− 0.5
22	19 46	10 15.6	14.3	3.5	3.5	24	670	664	. .	516	494	64.1	19 50 19.7	. .	+ 21.0	70 57 1.9	+ 2.2
23	322 34	11.1	9.5	28.6	1.4	26	. .	690	. .	500	. .	64.1	322 37 54.2	. .	− 44.4	13 43 31.0	− 1.0
24	11 12	12.6	11.8	29.9	1.0	25	856	770	. .	654	658	64.1	11 16 5.2	. .	+ 11.6	62 22 38.0	+ 1.4
25	324 8	9.7	8.3	27.6	29.9	21	965	855	. .	828	858	64.1	324 13 6.5	. .	− 41.9	15 18 45.8	− 1.6
26	357 56	16.4	14.2	3.4	4.1	27	. .	. .	. .	965	935	64.1	357 59 27.1	. .	− 2.0	49 5 46.3	+ 1.0
27	47 42	15.5	14.0	4.1	5.0	23	. .	. .	. .	010	. .	64.1	47 46 42.2	. .	+ 1 4.1	98 54 7.5	+ 0.5
28	1 0	14.4	12.2	0.9	2.1	27	620	368	. .	302	380	64.1	1 3 38.4	. .	+ 1.1	52 10 0.7	+ 2.1
29	11 40	10 13.2	10.4	29.7	0.9	24	. .	988	. .	894	. .	64.1	11 44 17.4	. .	+ 12.1	62 50 50.7	+ 1.4
30	31 58	8.5	7.0	25.1	27.3	22	835	725	. .	588	588	64.1	32 2 55.9	. .	+ 36.7	83 9 53.8	+ 2.4
31	33 56	13.7	11.4	0.8	2.6	22	935	902	. .	812	796	64.1	34 0 48.0	. .	+ 39.6	85 7 48.8	+ 1.2
32	23 2	10 2.5	2.6	19.5	23.0	25	328	287	. .	. .	. .	60.1	23 6 17.3	. .	+ 23.5	74 13 2.0	
33	22 30	6.7	7.3	23.8	27.0	24	. .	. .	. .	110	120	60.1	22 34 30.1	. .	+ 22.9	73 41 14.2	
34	22 34	7.5	9.3	25.4	27.8	23	622	558	. .	535	510	60.1	22 28 48.2	. .	+ 22.8	73 35 32.2	+ 0.1
35	47 10	14.5	16.1	3.7	4.8	25	190	. .	. .	. .	088	60.1	47 14 6.4	. .	+ 58.8	98 21 26.4	+ 1.8
36	10 20	16.3	17.5	5.3	6.0	26	. .	120	. .	100	. .	60.1	10 23 50.4	. .	+ 10.0	61 30 21.6	− 0.5
37	40 6	15.1	15.4	4.5	4.8	24	. .	540	. .	442	. .	60.1	40 10 16.2	. .	+ 46.1	91 17 23.5	+ 0.3
38																	
39	336 22	12.7	12.2	29.5	29.7	23	. .	315	. .	215	. .	64.5	336 26 44.0	. .	− 24.2	27 32 41.0	+ 0.2
40	162 18	16.5	14.2	2.8	5.0	30	. .	770	. .	590	. .	64.5	162 20 46.2	. .	− 17.7	68 45 52.7	+ 1.3
41	52 52	13.0	12.2	28.5	0.7	21	. .	662	. .	630	. .	64.5	52 57 7.9	. .	+ 1 13.7	104 4 42.8	+ 1.9
42	35 14	14.2	13.7	1.3	3.3	23	. .	060	. .	890	. .	64.5	35 18 45.7	. .	+ 39.6	86 25 46.5	+ 0.5
43	328 48	21.4	21.6	9.5	12.3	28	. .	970	. .	895	. .	64.5	328 51 6.5	. .	− 33.8	19 56 53.9	− 1.1
44	38 56	16.3	14.2	1.3	4.2	28	. .	435	. .	315	. .	64.5	38 59 22.2	. .	+ 45.3	90 6 28.7	+ 0.8
45	307 28	14.5	14.7	1.2	3.2	27	. .	. .	. .	315	. .	64.5	307 31 38.5	. .	− 1 12.8	358 36 46.9	− 0.8
46	307 28	10 10.0	9.8	26.7	0.7	27	490	480	490	510	420	64.8	307 31 40.7	. .	− 1 15.1	358 36 46.8	− 0.7
47	49 18	12.2	11.5	0.1	1.5	27	968	932	. .	802	800	64.8	49 21 32.7	. .	+ 1 7.2	100 29 1.1	+ 0.9
48	19 46	10.3	9.8	27.5	28.5	25	. .	. .	. .	050	032	64.8	19 50 17.5	. .	+ 20.9	70 56 59.6	+ 0.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
5	30.020	67.5	53.0
9	. .	. .	53.0
11	30.036	67.5	52.5
12	30.260	65.5	69.8
13	30.244	66.6	56.8
16	. .	. .	54.2
19	30.250	66.0	53.0
22	. .	. .	53.0
24	. .	. .	52.9
27	. .	. .	52.3
28	30.234	66.5	51.8
29	30.234	66.5	51.8
31	30.226	66.0	49.3
35	. .	. .	85.5
44	29.820	74.0	66.0
47	29.960	70.8	52.9

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
32	− 3.4	− 15 53.9	. .	− 15 57.3
33	− 3.4	+ 15 53.9	. .	+ 15 50.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
May 5	1	α Draconis	F.	37.0	42.8	46.5	0.9	5.5	10.4	25.1	28.6	35.0	1 5.76	− 0.38	. .	−10.91	14 0 54.47	− 0.32
	2	α Bootis	F.	43.3	46.0	47.8	54.1	56.4	58.5	5.0	6.7	9.3	9 56.34	− 0.20	−10.95	−10.92	14 9 45.22	+ 0.03
	3	θ Bootis	F.	39.2	43.3	45.7	55.8	59.4	2.5	12.4	14.9	19.3	20 59.17	− 0.29	. .	−10.92	14 20 47.96	− 0.10
	4	Venus II, N.	Ha.	. .	. .	35.3	37.3	39.2	41.3	43.3	. .	. .	0 39.29	− 0.13	. .	. .	. . . . .	. .
6	5	Sun I, N.	Ha.	41.7	44.2	45.8	52.1	54.3	56.4	2.9	4.6	7.3	52 54.37	− 0.17	. .	. .	. . . . .	. .
	6	Sun II, S.	Ha.	54.3	57.0	58.7	5.0	7.2	9.3	15.7	17.3	20.0	55 7.17	− 0.17	. .	. .	. . . . .	. .
	7	α Andromedæ	E.	. .	. .	46.8	49.0	51.3	53.6	56.2	. .	. .	1 51.39	− 0.18	−11.73	−11.81	0 1 39.40	− 0.06
	8	Venus II, N.	E.	12.2	14.6	16.2	22.4	24.5	26.5	32.6	34.2	36.8	4 24.44	− 0.11	. .	−11.81	0 4 12.52	− 0.79
	9	Polaris	E.	. .	. .	. .	30.0	57.0	20.0	45.0	. .	. .	10 56.38	− 4.10	. .	−11.84	1 10 40.44	. .
	10	β Arietis	E.	. .	. .	34.3	36.4	38.6	40.8	43.1	. .	. .	47 38.65	− 0.17	−11.93	−11.86	1 47 26.62	+ 0.08
7	11	Sun I, S.	E.	34.2	36.9	38.6	44.8	47.0	49.1	55.6	57.0	59.9	56 47.01	− 0.16	. .	−11.88	2 56 34.97	. .
	12	Sun II, N.	E.	47.3	50.0	51.7	58.0	0.0	2.1	8.5	10.1	12.8	59 0.05	− 0.16	. .	−11.88	2 58 48.01	. .
8	13	ε Leonis	F.	27.4	30.2	31.8	38.5	40.8	43.1	49.8	51.4	54.2	38 40.80	− 0.17	−12.51	−12.52	9 38 28.11	− 0.06
	14	Moon I, N.	F.	. .	. .	23.5	25.8	28.0	30.2	32.4	. .	. .	41 27.99	− 0.16	. .	−12.52	9 41 15.31	+68.70
	15	α Leonis	F.	27.0	29.7	31.3	37.6	39.7	41.8	48.0	49.6	52.2	1 39.66	− 0.15	−12.51	−12.51	10 1 27.0	− 0.04
	16	ρ Leonis	F.	57.4	0.0	1.7	7.9	10.0	12.1	18.2	19.7	22.3	26 9.92	− 0.15	−12.56	−12.52	10 25 57.05	− 0.03
	17	Polaris	Ha.	. .	. .	7.0	31.5	54.0	19.0	44.0	. .	. .	10 55.60	+ 0.72	. .	−12.74	1 10 43.58	+ 1.87
9	18	Sun I, S.	Ha.	21.3	24.0	25.6	32.1	34.2	36.2	42.7	44.0	47.0	4 34.12	− 0.17	. .	−12.79	3 4 21.16	. .
	19	Sun II, N.	Ha.	34.4	37.0	38.8	45.2	47.3	49.4	56.0	57.5	0.3	6 47.32	− 0.17	. .	−12.79	3 6 34.36	. .
	20	Moon I, N.	Ha.	44.3	46.8	48.4	54.9	57.0	59.1	5.5	7.1	9.8	37 56.99	− 0.27	. .	−12.94	10 37 43.78	+68.43
	21	α Ursæ Majoris	Ha.	28.3	33.9	37.4	50.5	55.0	59.4	12.5	16.0	21.5	56 54.94	− 0.25	. .	−12.95	10 55 41.74	+ 0.03
	22	δ Leonis	Ha.	12.1	14.8	16.5	23.0	25.1	27.2	34.0	35.7	38.4	7 25.20	− 0.22	−12.94	−12.96	11 7 12.02	− 0.08
	23	δ Crateris	Ha.	51.9	54.5	56.1	2.3	4.3	6.4	12.9	14.4	17.0	13 4.42	− 0.21	−12.96	−12.96	11 12 51.25	− 0.03
	24	τ Leonis	Ha.	16.7	19.3	20.8	26.9	28.9	30.9	37.0	38.7	41.2	21 28.93	− 0.21	−12.97	−12.96	11 21 15.76	− 0.01
	25	υ Leonis	Ha.	19.2	21.7	23.3	29.4	31.4	33.5	39.8	41.2	43.7	30 31.47	− 0.22	−12.97	−12.97	11 30 18.28	− 0.04
	26	γ Cephei, S. P.	Ha.	. .	. .	31.3	22.5	13.0	3.7	55.0	. .	. .	34 13.15	− 0.12	. .	−12.97	23 34 0.06	+ 0.30
	27	β Leonis	Ha.	26.8	29.5	31.1	37.4	39.5	41.7	48.0	49.7	52.3	42 39.56	− 0.22	−12.98	−12.97	11 42 26.37	0.00
	28	Groom. 4163, S. P.	Ha.	. .	. .	58.2	50.3	43.4	35.8	29.0	. .	. .	47 43.38	− 0.14	. .	−12.97	23 47 30.27	+ 0.07
	29	ο Virginis	Ha.	36.9	39.3	41.0	47.1	49.2	51.3	57.4	58.9	1.5	58 49.18	− 0.22	−12.94	−12.98	11 58 35.98	− 0.06
	30	θ Virginis	Ha.	15.4	17.9	19.5	25.6	27.6	29.6	35.7	37.4	39.9	3 27.62	− 0.21	−13.05	−13.00	13 3 14.41	+ 0.01
	31	Polaris, S. P.	Ha.	. .	. .	45.0	21.5	59.0	32.0	. .	. .	. .	10 57.04	+ 0.58	. .	−13.00	1 10 44.62	+ 2.70
11	32	β Corvi	F.	36.2	39.1	40.8	47.4	49.6	51.8	58.4	0.0	2.9	27 49.58	− 0.43	−14.32	−14.20	12 27 34.95	+ 0.08
	33	Moon I, N.	F.	26.5	29.2	30.8	37.0	39.2	41.3	47.6	49.1	51.6	30 39.14	− 0.38	. .	−14.20	12 30 24.56	+68.65
	34	12 Canum Venat.	F.	56.5	0.0	2.0	9.6	12.3	14.9	22.8	24.9	28.0	50 12.33	− 0.30	−14.30	−14.21	12 49 57.82	+ 0.09
	35	θ Virginis	F.	16.6	19.3	20.8	27.0	29.0	31.0	37.1	38.8	41.7	3 28.98	− 0.39	−14.23	−14.21	13 3 14.38	− 0.02
	36	Polaris, S. P.	F.	. .	. .	49.6	23.1	0.3	35.6	10.2	. .	. .	10 59.76	− 3.22	. .	−14.21	1 10 42.33	. .
	37	α Virginis	F.	24.1	26.8	28.3	34.5	36.7	38.6	44.8	46.4	49.0	18 36.58	− 0.40	−14.14	−14.22	13 18 21.96	− 0.09
	38	ζ Virginis	F.	7.8	10.3	11.8	18.0	20.0	22.0	28.1	29.7	32.2	28 19.99	− 0.38	−14.21	−14.22	13 28 5.39	− 0.01
	39	η Ursæ Majoris	F.	21.9	25.9	28.3	37.9	41.0	44.2	53.7	56.0	0.0	42 40.99	− 0.26	. .	−14.23	13 42 26.50	− 0.08
	40	η Bootis	F.	32.6	35.2	36.8	43.2	45.4	47.6	54.1	55.7	58.4	48 45.44	− 0.34	−14.19	−14.23	13 38 30.87	− 0.07
	41	50 Cassiopeæ, S. P.	F.	13.7	5.3	0.1	41.2	34.9	28.4	8.2	3.6	55.0	52 34.49	− 0.54	. .	−14.23	1 52 19.72	− 0.16
	42	α Draconis	F.	40.1	46.2	49.7	4.4	9.4	14.0	28.5	32.1	38.1	1 9.17	− 0.18	. .	−14.23	14 0 54.76	+ 0.04
	43	α Bootis	F.	46.8	49.5	51.1	57.5	59.7	2.0	8.4	10.1	12.7	9 59.76	− 0.34	−14.22	−14.24	14 9 45.18	− 0.02
	44	θ Bootis	F.	42.5	46.8	49.3	59.2	2.5	6.0	16.1	18.6	22.9	21 2.66	− 0.25	. .	−14.22	14 21 48.19	+ 0.13
	45	β Libræ	F.	4.5	7.1	8.7	14.8	16.9	18.7	25.1	26.8	29.3	10 16.88	− 0.40	−14.23	−14.26	15 10 2.25	0.00

7. Telescope micrometer changed one revolution.
14. Bisections at wires II–VI.
20, 26, 28, 41, 42, Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	333 50	8.0	7.8	25.1	27.5	25	. .	770	. .	664	. .	64.8	333 54 10.7	. .	− 28.3	25 0 3.6	− 1.3
2	18 58	10 11.0	10.8	29.8	1.0	27	262	234	. .	142	132	64.8	19 1 44.1	. .	+ 19.9	70 8 25.2	+ 1.3
3	346 22	14.7	13.9	1.0	2.5	23	238	218	. .	218	164	64.8	346 26 43.1	. .	− 13.9	37 32 50.4	+ 1.7
4	39 44	7.4	7.2	26.6	29.2	25	. .	935	. .	940	. .	65.1	39 48 6.5	. .	+ 47.2	90 55 14.9	
5	21 56	11.2	11.3	0.0	0.7	24	135	175	. .	. .	. .	65.1	22 0 31.5	. .	+ 22.3	73 7 15.0	
6	22 28	11.5	11.5	29.1	0.7	25	. .	. .	. .	345	320	65.1	22 32 12.0	. .	+ 22.9	73 38 56.1	
7	10 26	15.5	15.3	3.5	4.9	21	. .	750	. .	695	. .	64.3	10 31 18.6	. .	+ 10.2	61 37 50.0	+ 0.3
8	39 24	11.3	10.3	28.3	1.8	21	. .	635	. .	595	. .	64.3	39 29 8.9	. .	+ 45.3	90 36 15.4	
9	310 14	3.7	3.2	24.2	28.6	26	. .	655	700	680	680	64.3	310 17 57.1	. .	− 1 4.4	11 23 13.9	+ 1.1
10	18 38	11.5	10.3	29.8	0.8	21	. .	320	. .	. .	. .	64.3	18 43 14.3	. .	+ 18.4	69 49 53.9	+ 2.6
11	22 10	10 16.0	15.8	4.0	6.6	19	. .	350	. .	. .	. .	64.3	22 15 39.0	. .	+ 22.1	73 22 22.3	
12	21 38	10 4.8	4.5	22.3	25.4	19	. .	. .	. .	262	265	64.3	21 43 50.3	. .	+ 21.6	72 50 33.1	
13	14 26	9 12.5	11.0	29.8	1.4	23	. .	. .	. .	715	715	65.0	14 31 5.9	. .	+ 14.6	65 37 41.7	+ 0.7
14	22 22	10 10.7	9.6	27.3	0.5	25	850	308	460	288	215	65.0	22 26 12.4	. .	+ 23.3	73 32 56.9	
15	26 12	8.6	6.4	24.0	26.8	22	052	002	. .	938	900	65.0	26 17 8.3	. .	+ 27.8	77 23 57.3	+ 0.8
16	28 50	4.5	0.8	19.4	22.9	24	. .	150	. .	950	. .	65.0	28 54 41.0	. .	+ 31.1	70 1 33.3	− 0.9
17	310 14	0.9	1.1	19.0	23.2	26	935	835	890	840	900	64.0	310 17 57.7	. .	− 1 5.6	1 23 13.3	0.0
18	21 38	2.8	3.5	20.3	23.5	22	050	145	. .	. .	. .	64.0	21 43 10.1	. .	+ 22.0	72 49 53.3	
19	21 8	3.0	4.5	21.5	25.0	28	. .	. .	. .	640	635	64.0	21 11 27.5	. .	+ 21.4	72 18 10.1	
20	26 32.5	9 10.9	9.6	26.0	29.3	27	. .	937	790	595	. .	64.8	26 36 6.8	. .	+ 28.2	77 42 56.2	
21	336 22	10 5.2	4.3	20.7	24.1	23	. .	. .	. .	820	880	64.8	336 26 42.0	. .	− 24.6	27 32 38.6	− 1.5
22	17 34	7.5	5.7	22.3	25.5	21	. .	. .	. .	. .	695	64.8	17 39 12.3	. .	+ 18.0	68 45 51.5	+ 0.7
23	52 52	7.0	6.0	22.8	26.5	22	. .	265	. .	165	. .	64.8	52 57 5.0	. .	+ 1 14.7	104 4 40.9	0.0
24	35 14	7.5	6.1	23.1	26.9	23	640	580	. .	. .	. .	64.8	35 18 4.6	. .	+ 40.0	86 25 45.8	+ 0.1
25	38 56	8.0	6.3	23.0	26.7	29	060	050	. .	. .	. .	64.8	38 59 21.2	. .	+ 45.8	90 6 28.2	+ 0.5
26	295 46	5.7	4.0	20.4	25.5	27	. .	640	. .	625	. .	64.8	295 49 43.6	. .	− 1 56.4	346 54 8.4	+ 0.4
27	23 32	9.0	7.1	23.6	26.5	29	. .	120	. .	040	. .	64.8	23 35 19.3	. .	+ 24.7	74 42 5.2	+ 0.1
28	292 32	6.0	5.0	21.4	26.0	23	. .	. .	. .	295	. .	64.8	292 36 48.9	. .	− 2 15.3	343 40 54.8	− 1.0
29	29 22	7.8	6.3	23.0	26.6	27	. .	165	. .	060	. .	64.8	29 25 50.0	. .	+ 32.0	80 32 43.2	− 0.6
30	43 40	. .	5.8	23.0	27.0	28	. .	620	. .	480	. .	64.8	43 43 27.9	. .	+ 54.4	94 50 43.5	− 0.7
31	307 28	5.0	4.5	21.2	25.9	27	. .	920	912	920	. .	64.8	307 31 39.3	. .	− 1 14.0	358 36 46.5	− 0.1
32	61 28	29.0	28.2	16.0	20.5	24	310	192	. .	. .	. .	64.8	61 32 42.1	. .	+ 1 46.8	112 40 50.1	+ 2.6
33	37 11.5	10 27.7	24.8	13.8	17.8	22	700	562	224	090	860	64.8	37 16 43.6	. .	+ 44.2	88 23 49.0	
34	359 48	2.8	1.5	18.9	22.1	25	560	486	. .	452	440	64.8	359 52 19.9	. .	− 0.1	50 58 41.0	+ 1.6
35	43 40	10 4.0	1.0	19.7	24.9	28	. .	910	. .	844	. .	64.8	43 43 26.4	. .	+ 55.5	94 50 43.1	− 1.1
36	307 28	3.9	2.6	19.7	24.1	27	950	974	966	925	936	64.8	307 31 40.3	. .	− 1 15.5	358 36 46.0	0.0
37	49 18	1.2	28.5	16.6	21.0	28	. .	708	. .	630	. .	64.8	49 21 32.6	. .	+ 1 7.4	100 29 1.2	+ 1.0
38	38 44	3.4	0.8	19.0	22.7	23	798	782	. .	762	718	64.8	38 48 45.6	. .	+ 46.8	89 55 53.6	+ 1.4
39	348 52	5.1	1.8	21.0	24.0	26	. .	784	. .	680	. .	64.8	348 55 59.1	. .	− 11.4	40 2 8.9	+ 0.3
40	19 46	3.5	0.7	19.3	22.1	25	. .	740	. .	688	. .	64.8	19 50 16.0	. .	+ 21.0	70 56 58.2	− 0.2
41	290 40	0.7	27.6	15.8	21.0	29	. .	085	175	200	. .	64.8	290 43 25.6	. .	− 2 32.7	341 47 14.1	+ 0.8
42	333 50	1.5	29.6	18.3	21.3	26	. .	220	. .	348	. .	64.8	333 54 8.4	. .	− 28.5	25 0 1.1	− 2.1
43	18 58	3.2	29.8	18.5	22.7	28	016	924	. .	836	796	64.8	19 1 43.0	. .	+ 20.1	70 8 24.3	+ 1.4
44	346 22	0.6	28.5	16.4	20.0	24	. .	. .	. .	298	284	64.8	346 26 39.7	. .	− 14.1	37 32 46.8	− 0.2
45	47 42	5.2	4.0	22.8	25.9	23	. .	860	. .	726	. .	64.8	47 46 42.1	. .	+ 1 4.2	98 54 7.5	+ 0.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	52.4
4	29.788	62.0	59.6
6	29.716	69.0	74.0
8	. .	. .	71.0
9	. .	. .	74.5
11	. .	. .	79.5
15	. .	. .	60.0
16	29.612	71.0	
17	29.802	67.5	69.0
18	29.800	69.5	73.0
20	29.846	70.5	64.0
24	. .	. .	62.1
29	29.864	68.8	60.8
31	. .	. .	58.5
33	29.940	73.0	49.6
37	. .	. .	49.5
39	. .	. .	49.3
42	29.960	73.0	48.8
44	. .	. .	48.2
45	. .	. .	48.1

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	− 8.0	+ 12.1	. .	+ 4.1
5	− 3.3	+ 15 50.5	. .	+ 15 47.2
6	− 3.4	− 15 50.5	. .	− 15 53.9
8	− 7.9	+ 12.0	. .	+ 4.1
11	− 3.3	− 15 54.6	. .	− 15 57.9
12	− 3.3	+ 15 54.6	. .	+ 15 51.3
14	−21 56.8	+ 15 50.5	. .	− 6 6.3
18	− 3.2	− 15 51.6	. .	− 15 54.8
19	− 3.2	+ 15 51.6	. .	+ 15 48.4
20	−26 10.3	+ 16 4.6	. .	− 10 5.7
33	−36 25.4	+ 16 30.1	. .	− 19 55.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
													m. s.	s.	s.	s.	h m. s.	s.
1870. May 11	1	μ^1 Bootis	F.	35.5	38.9	40.6	48.4	50.9	53.5	1.2	3.1	6.5	19 50.96	— 0.30	—14.26	—14.27	15 19 36.39	— 0.02
	2	α Coronæ Borealis .	F.	13.4	16.3	18.0	24.9	27.2	29.4	36.3	38.0	40.9	29 27.16	— 0.32	—14.33	—14.27	15 29 12.57	+ 0.06
	3	α Serpentis . . .	F.	55.6	58.2	59.8	6.0	8.0	10.0	16.2	17.6	20.2	38 7.96	— 0.36	—14.28	—14.28	15 37 53.32	+ 0.02
	4	ε Serpentis . . .	F.	24.0	26.5	28.0	34.2	36.2	38.3	44.5	46.0	48.6	44 36.26	— 0.37	—14.28	—14.28	15 44 21.61	+ 0.01
	5	ε Coronæ Borealis .	F.	14.7	17.7	19.4	26.1	28.4	30.7	37.5	39.2	42.2	52 28.43	— 0.32	. .	—14.28	15 52 13.83	— 0.07
	6	β Scorpii	F.	56.0	58.8	0.4	6.7	9.0	11.2	17.6	19.2	22.1	58 9.01	— 0.42	—14.23	—14.28	15 57 54.31	— 0.02
	7	δ Ophiuchi . . .	F.	35.8	38.4	39.9	46.0	48.1	50.1	56.4	57.8	0.3	7 48.09	— 0.38	—14.26	—14.29	16 7 33.42	— 0.01
	8	τ Herculis . . .	F.	48.7	52.3	54.7	3.5	6.5	9.5	18.3	20.5	24.3	16 6.48	— 0.27	. .	—14.29	16 15 51.92	+ 0.19
	9	α Scorpii	F.	28.9	32.0	33.6	40.4	42.6	44.8	51.7	53.4	56.4	21 42.64	— 0.44	—14.24	—14.29	16 21 27.91	— 0.06
	10	Polaris	Ha.	. .	. .	10.5	31.2	59.6	18.9	42.9	. .	. .	10 57.12	+ 3.41	. .	—14.46	1 11 46.07	+ 2.89
	11	α Arietis	Ha.	51.3	54.0	55.8	0.2	2.3	. .	. .	. .	. .	0 4.58	— 0.25	—14.53	—14.49	1 59 49.84	+ 0.05
12	12	Sun I, N. . . .	Ha.	5.9	8.5	10.3	16.7	18.9	21.0	27.7	29.2	32.0	16 18.91	— 0.25	. .	—14.52	3 16 4.14	. .
	13	Sun II, S. . . .	Ha.	19.7	22.5	24.5	30.6	32.7	34.9	41.3	43.0	45.6	18 32.76	— 0.25	. .	—14.52	3 18 17.99	. .
	14	Polaris, S. P. . .	Ha.	28.5	43.4	40.4	52.4	. .	. .	. .	. .	. .	11 3.75	— 2.20	. .	—14.78	1 10 46.77	+ 3.29
	15	Moon I, N.. . .	Ha.	50.0	52.6	54.3	0.5	2.6	4.7	11.0	12.5	15.0	28 2.58	— 0.31	. .	—14.79	13 27 47.48	+69.41
	16	η Bootis	Ha.	33.0	35.8	37.4	43.8	46.0	48.1	54.6	56.1	58.9	48 45.97	— 0.28	—14.78	—14.80	13 48 30.89	— 0.07
	17	α Bootis	Ha.	47.2	49.9	51.6	58.1	0.3	2.4	9.0	10.5	13.3	10 0.26	— 0.28	—14.78	—14.81	14 9 45.17	— 0.03
	18	Venus II, N. . .	E.	3.9	6.5	8.0	14.1	16.1	18.1	24.4	25.9	28.5	27 16.17	— 0.26	. .	. .	. . . .	. .
13	19	Sun I, N. . . .	E.	1.8	4.7	6.2	12.6	14.7	16.9	23.5	25.0	27.7	20 14.79	— 0.27	. .	. .	. . . .	. .
	20	Sun II, S. . . .	E.	15.9	18.4	20.3	20.6	28.8	31.0	37.5	39.2	41.8	22 28.83	— 0.27	. .	. .	. . . .	. .
	21	β Ceti	F.	6.1	8.8	10.3	16.8	19.0	21.1	27.5	29.2	31.9	37 18.97	— 0.25	—15.89	—15.73	0 37 2.99	+ 0.21
	22	Polaris	F.	. .	. .	10.6	36.6	59.8	22.4	47.7	. .	. .	10 59.92	+ 0.69	. .	—15.75	1 10 44.86	+ 0.39
	23	β Arietis	F.	29.7	32.4	34.0	40.5	42.7	44.9	51.5	53.0	55.7	47 42.71	— 0.26	—15.77	—15.76	1 47 26.69	+ 0.02
	24	α Arietis	F.	52.5	55.4	57.0	3.7	5.9	8.1	14.7	16.3	19.1	0 5.86	— 0.26	—15.70	—15.76	1 59 49.84	+ 0.01
14	25	Sun I	F.	58.8	1.3	2.9	9.3	11.5	13.7	20.2	21.9	24.6	24 11.58	— 0.26	. .	—15.80	3 23 55.52	. .
	26	Sun II, N. . . .	F.	12.9	15.5	17.3	23.6	25.9	28.0	34.5	36.0	38.7	26 25.82	— 0.26	. .	—15.80	3 26 9.76	. .
	27	β Tauri	F.	5.4	8.3	10.0	16.9	19.3	21.7	28.5	30.4	33.3	18 19.31	— 0.25	—15.83	—15.84	5 18 3.22	— 0.03
	28	ε Orionis	F.	39.9	42.4	43.9	50.0	52.0	54.1	0.2	1.8	4.4	29 52.08	— 0.25	—15.89	—15.84	5 29 35.99	+ 0.04
	29	α Orionis	F.	10.7	13.3	14.9	21.0	23.1	25.1	31.2	32.8	35.4	48 23.06	— 0.26	—15.82	—15.85	5 48 6.95	— 0.06
	30	μ Geminorum . .	F.	7.5	10.4	12.0	18.7	20.8	22.9	29.6	31.3	34.0	15 20.80	— 0.26	—15.86	—15.86	6 15 4.68	— 0.04
	31	γ Geminorum . .	F.	14.4	17.0	18.6	25.0	27.2	29.3	35.8	37.4	40.0	30 27.19	— 0.26	—15.80	—15.87	6.30 11.06	— 0.10
	32	α Canis Majoris . .	F.	27.4	30.2	31.7	38.0	40.1	42.2	48.8	50.2	53.0	39 40.18	— 0.25	—15.90	—15.87	6 39 24.06	— 0.05
	33	21 Cassiopeæ, S. P. .	F.	5.1	56.3	50.6	27.9	19.9	13.0	50.0	43.8	35.3	37 20.21	— 0.22	. .	—16.00	0 37 3.99	+ 0.01
	34	α Canum Venat. .	F.	58.1	1.5	3.4	11.4	14.0	16.6	24.5	26.5	29.5	50 13.94	— 0.31	—15.93	—16.01	12 49 57.62	— 0.08
	35	θ Virginis . . .	F.	18.4	21.0	22.5	28.6	30.7	32.8	38.6	40.3	43.0	3 30.66	— 0.29	—16.02	—16.01	13 3 14.36	— 0.03
	36	Polaris, S. P. . .	F.	. .	. .	50.5	26.6	59.8	. .	. .	. .	. .	11 1.00	+ 0.46	. .	—16.01	1 10 45.45	+ 0.63
	37	38 Cassiopeæ, S. P. .	F.	24.6	17.8	13.5	54.5	48.6	43.0	24.7	20.7	13.6	21 49.00	— 0.23	. .	—16.02	1 21 32.75	— 0.55
	38	ζ Virginis . . .	F.	9 4	12.0	13.5	19.6	21.7	23.7	39.7	41.3	43.9	28 21.64	— 0.29	—15.96	—16.02	13 28 5.33	— 0.06
	39	5 Ursæ Minoris . .	F.	18.0	29.0	35.8	1.2	9.4	18.3	44.7	50.6	1.9	28 9.88	— 0.37	. .	—16.05	14 27 54.46	+ 0.15
	40	μ Bootis	F.	37.4	40.6	42.5	50.1	52.7	55.3	3.1	5.0	8.4	19 52.79	— 0.31	—16.07	—16.06	15 19 36.42	0.00
	41	Moon I, N. . .	F.	58.7	1.4	3.0	9.5	11.7	13.8	20.4	22.2	25.0	28 11.74	— 0.29	. .	—16.07	15 27 55.38	+71.86
	42	α Serpentis . . .	F.	57.4	0.0	1.5	7.7	9.8	11.8	17.9	19.5	22.1	38 9.74	— 0.30	—16.09	—16.07	15 37 53.37	+ 0.04
	43	δ Scorpii	F.	43.8	46.5	48.2	54.6	56.9	59.0	5.7	7.4	10.2	52 56.92	— 0.29	—16.06	—16.08	15 52 40.55	— 0.01
	44	β^1 Scorpii	F.	57.8	0.4	2.2	8.7	10.8	12.9	19.5	21.0	23.7	58 10.78	— 0.29	—16.08	—16.08	15 57 54.41	+ 0.03
	45	Groombridge 2320	F.	45.5	52.2	56.5	12.6	18.2	23.9	40.1	45.0	51.0	6 18.33	— 0.34	. .	—16.08	16 6 1.91	+ 0.19
	46	τ Herculis . . .	F.	50.5	54.3	56.5	5.4	8.3	11.2	20.1	22.2	25.9	16 8.27	— 0.31	. .	—16.09	16 15 51.87	+ 0.10

11. Transits observed over wires B_1–C_2.
14. Transits and bisections observed over wires C_1–B_1.
15, 33, 39. Bisections at sets B and D.
20. Unsteady.
39. Entire seconds assumed.
41. Circle reading increased 2′.

Number.	Circle Division.	MICROSCOPE MICROMS. I.	II.	III.	IV.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	1 0	2.9	0.2	18.9	22.3	28	636	516	. .	412	416	64.8	1 3 34.0	. .	+ 1.1	52 9 56.3	0.0
2	11 40	2.7	0.4	19.4	22.1	25	844	826	. .	732	748	64.8	11 44 15.2	. .	+ 12.1	62 50 48.5	+ 1.1
3	31 58	1.6	28.5	17.0	20.0	23	. .	372	. .	358	. .	64.8	32 2 53.9	. .	+ 36.5	83 9 51.6	+ 1.3
4	33 56	2.0	29.7	18.3	22.5	23	. .	790	. .	650	. .	64.8	34 0 47.1	. .	+ 39.4	85 7 47.7	+ 1.1
5	11 34	4.0	3.2	21.0	24.2	26	. .	254	. .	150	. .	64.8	11 38 6.9	. .	+ 12.0	62 44 40.1	+ 0.2
6	58 14	2.5	29.8	18.9	22.9	23	. .	150	. .	044	. .	64.8	58 18 56.1	. .	+ 1 34.3	109 26 51.6	+ 0.4
7	42 10	2.5	29.7	18.5	22.1	25	. .	961	. .	835	. .	64.8	42 14 13.7	. .	+ 52.9	93 21 27.8	+ 0.1
8	352 12	2.4	28.0	17.9	20.5	25	. .	406	. .	408	. .	64.8	352 16 22.6	. .	— 7.9	43 22 35.9	— 0.1
9	64 56	3.4	2.3	20.5	25.7	26	. .	. .	. .	448	400	64.8	65 0 2.0	. .	+ 2 4.4	116 8 27.6	+ 1.2
10	310 14	9 24.0	23.5	12.7	18.5	27	240	980	155	110	195	64.5	310 17 57.2	. .	— 1 6.3	1 23 12.1	— 2.0
11	15 58	10 0.7	29.7	18.5	22.5	23	980	930	. .	. .	. .	64.5	16 2 44.8	. .	+ 16.0	67 9 22.0	+ 0.5
12	20 20	29.1	29.0	18.1	21.5	22	480	520	. .	. .	. .	64.5	20 25 7.6	. .	+ 20.6	71 31 49.4	
13	20 52	0.4	29.8	19.3	23.6	23	. .	. .	. .	810	800	64.5	20 56 44.7	. .	+ 21.2	72 3 27.1	
14	307 28	2.5	1.5	19.3	24.2	27	900	945	010	095	. .	65.1	307 31 39.3	. .	— 1 14.4	358 36 46.1	+ 0.3
15	43 5.9	10 10.3	8.9	27.5	1.2	27	. .	820	645	440	. .	65.1	43 9 38.6	. .	+ 53.7	94 16 53.5	
16	19 46	5.5	4.1	22.5	25.5	25	. .	470	. .	425	. .	65.1	19 50 17.3	. .	+ 20.7	70 56 59.2	+ 1.0
17	18 58	5.5	4.9	22.9	26.5	27	. .	660	. .	570	. .	65.1	19 1 43.6	. .	+ 19.8	70 8 24.6	+ 1.8
18	37 26	27.5	27.3	16.8	20.7	27	310	285	. .	183	135	61.4	37 29 52.6	. .	+ 43.1	88 36 56.9	
19	20 6	1.5	1.4	18.2	22.8	25	950	910	. .	. .	. .	64.3	20 10 10.5	. .	+ 20.7	71 16 52.4	
20	20 38	1.1	0.2	16.8	21.8	26	. .	. .	. .	950	820	64.3	20 41 55.3	. .	+ 21.3	71 48 37.8	
21																	
22	310 14	27.8	26.8	14.5	21.6	27	008	963	950	977	975	61.4	310 17 59.9	. .	— 1 5.9	1 23 15.2	+ 0.6
23	18 38	2.0	2.6	20.0	24.6	22	188	090	. .	014	002	61.4	18 43 10.2	. .	+ 18.9	69 49 50.3	— 0.7
24	15 58	2.1	2.1	18.9	23.6	23	786	772	. .	706	694	64.3	16 2 45.4	. .	+ 16.0	67 9 22.6	+ 1.2
25																	
26	19 52	1.0	0.8	19.5	22.0	27	. .	. .	. .	958	710	64.3	19 55 42.8	. .	+ 20.1	71 2 24.1	
27	10 20	2.2	3.3	21.7	24.7	27	180	130	. .	002	008	64.3	10 23 53.1	. .	+ 10.1	61 30 24.4	+ 1.9
28	40 6	0.4	0.7	18.8	22.5	25	. .	692	. .	608	. .	64.3	40 10 17.1	. .	+ 46.6	91 17 24.9	+ 2.7
29	31 26	7.8	8.0	24.9	28.6	24	795	739	. .	684	654	64.3	31 30 24.7	. .	+ 33.8	82 37 19.7	+ 2.4
30	16 14	8.8	9.6	27.0	28.8	23	188	072	. .	004	004	64.3	16 18 48.8	. .	+ 16.2	67 25 26.2	+ 2.8
31	22 18	8.8	9.5	27.0	28.5	22	700	652	. .	550	536	64.3	22 22 55.8	. .	+ 22.8	73 29 39.8	+ 3.7
32	55 20	3.8	5.1	22.3	25.8	22	745	611	. .	630	625	64.3	55 24 59.1	. .	+ 1 19.9	106 32 40.2	+ 3.7
33	293 8	8.5	6.5	24.1	28.0	25	635	. .	. .	. .	585	64.7	293 12 11.6	. .	— 2 10.5	344 16 22.3	+ 2.6
34	359 48	6.5	5.9	22.3	24.2	25	380	290	. .	204	208	64.7	359 52 19.6	. .	— 0.1	50 58 40.7	+ 1.9
35	43 40	9.8	8.5	26.1	29.1	28	. .	448	. .	322	. .	64.7	43 43 27.8	. .	+ 54.1	94 50 43.1	— 1.0
36	307 28	8.7	8.4	23.9	28.4	27	690	680	708	. .	. .	64.7	307 31 39.4	. .	— 1 13.6	358 36 47.0	+ 1.7
37	288 28	10.5	9.3	26.1	29.1	26	. .	632	. .	534	. .	64.7	288 31 53.6	. .	— 2 47.8	339 35 27.0	+ 1.1
38	38 44	10.6	9.3	25.3	28.4	23	. .	248	. .	190	. .	64.7	38 48 46.8	. .	+ 45.8	89 55 53.8	+ 1.7
39	322 34	8.2	6.2	27.5	26.8	27	060	120	. .	106	154	64.7	322 37 48.8	. .	— 43.4	13 43 26.6	— 1.7
40	1 0	9.6	6.5	23.1	27.0	28	220	128	. .	092	046	64.7	1 3 34.1	. .	+ 1.1	52 9 56.4	+ 0.8
41	53 56	10 0.2	28.0	14.8	19.1	38	. .	220	170	064	. .	64.7	53 57 8.3	. .	+ 1 18.3	105 4 47.8	
42	31 58	7.8	6.7	22.4	26.1	22	. .	. .	. .	820	724	64.7	32 2 55.2	. .	+ 35.9	83 9 52.3	+ 2.4
43	61 4	8.3	7.0	23.5	28.3	30	. .	. .	. .	610	560	64.7	61 6 54.4	. .	+ 1 43.8	112 14 59.4	+ 2.1
44	58 14	8.2	6.0	22.7	27.5	22	. .	746	. .	586	. .	64.7	58 18 57.4	. .	+ 1 32.9	109 26 51.5	+ 0.2
45	330 40	5.4	2.4	19.8	23.3	22	580	550	. .	480	600	64.7	330 45 2.8	. .	— 32.2	21 50 51.8	+ 1.3
46	352 12	9.6	6.7	24.0	27.1	24	. .	. .	. .	960	936	64.7	352 16 21.4	. .	— 7.8	43 22 34.8	— 0.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
3	29.950	73.0	47.3
6	. .	. .	47.3
10	29.924	63.5	65.5
11	. .	. .	70.7
12	29.896	68.0	74.5
15	29.916	72.5	56.1
17	. .	. .	55.9
18	. .	. .	67.0
19	. .	. .	64.2
21	30.024	65.0	68.2
23	. .	. .	73.6
25	30.036	69.8	76.7
27	. .	. .	78.0
29	30.040	71.8	78.2
32	30.016	72.0	77.8
33	30.030	68.3	67.8
38	. .	. .	62.2
40	. .	. .	63.2
42	30.056	70.0	57.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
12	— 3.0	+ 15 48.8	. .	+ 15 45.8
13	— 3.1	— 15 48.8	. .	— 15 51.9
15	—41 31.0	+ 16 38.5	. .	— 24 52.5
18	— 7.1	+ 10.9	. .	+ 3.8
19	— 3.0	+ 15 52.7	. .	+ 15 49.7
20	— 3.0	— 15 52.7	. .	— 15 55.7
26	— 2.9	+ 15 50.5	. .	+ 15 47.6
41	—49 12.8	+ 16 40.3	. .	— 32 32.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
May 14	1	α Scorpii	F.	30.8	33.5	35.3	42.2	44.3	46.6	53.2	55.1	58.0	21 44.33	− 0.20	−16.03	−16.09	16 21 27.95	− 0.07
15	2	Polaris, S. P.	Ha.	27.0	38.0	37.0	50.6	27.5	1.2	. .	. .	. .	11 1.09	+ 0.45	. .	−16.44	1 10 45.10	. .
	3	δ Ophiuchi	Ha.	37.9	40.5	42.0	48.1	50.1	52.2	58.4	0.0	2.5	7 50.19	− 0.26	−16.43	−16.51	16 7 33.42	− 0.06
	4	τ Herculis	Ha.	50.8	54.5	57.0	5.7	8.7	11.6	20.6	22.9	26.6	16 8.71	− 0.35	. .	−16.51	16 15 51.85	+ 0.07
	5	α Scorpii	Ha.	31.9	33.9	35.7	42.4	44.8	47.0	53.8	55.5	58.4	21 44.82	− 0.26	−16.54	−16.51	16 21 28.05	+ 0.02
	6	Moon II, N.	Ha.	32.3	35.1	36.8	43.4	45.5	47.7	54.5	56.3	59.0	33 45.62	− 0.26	. .	−16.52	16 33 28.84	−72.91
	7	9 Camelopard., S. P.	Ha.	52.8	46.5	42.6	27.5	22.5	17.6	2.5	58.6	52.6	41 22.58	− 0.22	. .	−16.52	4 41 5.84	+ 0.24
	8	κ Ophiuchi	Ha.	36.7	39.3	40.8	47.1	49.1	51.1	57.4	59.0	1.5	51 49.11	− 0.27	−16.54	−16.52	16 51 32.32	+ 0.06
	9	d Herculis	Ha.	52.1	55.3	57.0	4.3	6.7	9.2	16.7	18.5	21.4	57 6.80	− 0.28	. .	−16.53	16 56 49.99	+ 0.16
	10	a^1 Herculis	Ha.	48.8	51.3	53.0	59.3	1.4	3.5	9.8	11.4	14.0	9 1.39	− 0.27	−16.54	−16.53	17 8 44.59	+ 0.03
	11	44 Ophiuchi	Ha.	30.9	33.6	35.3	42.1	44.2	46.5	53.3	54.8	57.7	18 44.27	− 0.25	−16.57	−16.54	17 18 27.48	+ 0.06
	12	Venus II, N.	E.	42.9	45.4	46.9	53.0	55.1	57.1	3.3	4.8	7.3	38 58.09	− 0.12	. .	−16.74	0 38 38.23	− 0.72
	13	Polaris	E.	. .	. .	19.5	43.5	7.9	29.8	54.5	. .	. .	11 7.54	− 1.63	. .	−16.75	1 10 49.16	+ 3.29
16	14	α Tauri	E.	30.7	35.1	39.5	41.5	43.6	45.8	47.8	52.2	56.2	28 43.60	− 0.14	−16.92	−16.85	4 28 26.61	+ 0.05
	15	Mercury I	E.	59.5	2.4	4.0	10.9	13.0	15.1	22.0	23.8	26.7	59 13.04	− 0.15	. .	−16.87	4 58 56.02	+ 0.34
	16	β Orionis	E.	21.1	23.6	25.2	31.4	33.5	35.6	41.5	43.1	45.7	8 33.41	− 0.09	−17.06	−16.87	5 8 16.45	+ 0.18
	17	β Tauri	E.	6.4	9.2	11.1	18.0	20.4	22.7	29.5	31.4	34.4	18 20.34	− 0.16	−16.95	−16.88	5 18 3.30	+ 0.05
	18	α Orionis	E.	11.7	14.3	15.8	22.0	24.0	26.0	32.3	33.8	36.4	48 24.03	− 0.13	−16.93	−16.89	5 48 7.01	+ 0.01
	19	α Canis Majoris	E.	28.4	31.0	32.5	39.1	41.2	43.3	49.6	51.3	54.0	39 41.16	− 0.07	−17.08	−16.92	6 39 24.17	+ 0.08
	20	Polaris, S. P.	E.	. .	. .	47.0	24.8	4.9	41.6	. .	. .	. .	11 3.02	+ 3.35	. .	−17.11	1 10 49.26	+ 2.94
	21	ζ Virginis	E.	10.3	12.9	14.4	20.4	22.6	24.7	30.8	32.2	34.7	28 22.56	− 0.16	−17.01	−17.12	13 28 5.28	− 0.11
	22	η Ursæ Majoris	E.	24.8	28.6	31.0	40.8	43.7	46.9	56.4	58.7	2.7	42 43.73	− 0.27	. .	−17.13	13 42 26.33	− 0.20
	23	η Bootis	E.	35.2	38.0	39.6	46.0	48.1	50.3	56.6	58.5	1.2	48 48.17	− 0.19	−17.08	−17.13	13 48 30.85	− 0.10
	24	50 Cassiopeæ, S. P.	E.	16.6	8.6	3.6	44.2	37.4	30.6	11.3	6.5	58.1	52 37.43	+ 0.09	. .	−17.13	1 52 20.39	+ 0.29
	25	α Draconis	E.	43.0	48.9	52.4	7.3	11.9	16.7	31.3	34.9	40.9	1 11.92	− 0.35	. .	−17.13	14 0 54.44	− 0.20
	26	α Bootis	E.	49.4	52.3	53.9	0.3	2.4	4.6	11.2	12.9	15.4	10 2.49	− 0.19	−17.10	−17.14	14 9 45.16	− 0.04
	27	ι Cassiopeæ, S. P.	E.	. .	. .	48.4	43.0	38.5	34.1	28.0	. .	. .	18 38.43	+ 0.02	. .	−17.14	2 18 21.31	+ 0.63
	28	θ Bootis	E.	45.4	49.5	52.1	2.1	5.4	8.6	18.9	21.3	25.5	21 5.42	− 0.28	. .	−17.14	14 20 47.98	− 0.05
	29	5 Ursæ Minoris	E.	. .	. .	54.5	3.0	11.3	19.7	28.6	. .	. .	28 11.47	− 0.52	. .	−17.15	14 27 53.80	− 0.45
	30	ε Bootis	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	31	a^2 Libræ	E.	47.5	50.0	51.7	58.0	0.1	2.2	8.5	10.3	13.0	44 0.14	− 0.12	−17.17	−17.16	14 43 42.86	0.00
	32	β Ursæ Minoris	E.	. .	. .	13.2	20.5	28.4	36.4	43.5	. .	. .	51 28.45	− 0.48	. .	−17.16	14 51 10.81	− 0.02
	33	β Bootis	E.	. .	. .	16.3	19.3	22.1	24.6	27.3	. .	. .	57 21.94	− 0.24	. .	−17.16	14 57 4.54	− 0.03
	34	48 Cephei, S. P.	E.	. .	. .	26.2	17.0	8.1	57.8	49.0	. .	. .	4 7.67	+ 0.22	. .	−17.16	3 3 50.73	+ 0.40
	35	β Libræ	E.	7.1	9.8	11.3	17.4	19.4	21.5	27.6	29.4	31.9	10 19.49	− 0.14	−17.07	−17.16	15 10 2.19	− 0.09
	36	μ Bootis	E.	38.3	41.4	43.6	51.2	53.8	56.4	4.3	6.1	9.4	19 53.83	− 0.23	−17.18	−17.17	15 19 36.43	0.00
	37	α Coronæ Borealis	E.	16.2	19.0	20.7	27.5	29.8	32.2	39.0	40.8	43.7	29 29.88	− 0.20	−17.13	−17.18	15 29 12.50	− 0.05
	38	α Serpentis	E.	58.4	1.0	2.5	8.7	10.7	12.7	19.0	20.4	23.0	38 10.71	− 0.17	−17.17	−17.18	15 37 53.36	+ 0.01
	39	ε Serpentis	E.	26.7	29.3	30.7	37.0	39.0	41.0	47.1	48.7	51.2	44 38.97	− 0.16	−17.14	−17.19	15 44 21.62	− 0.05
	40	α Ophiuchi	E.	0.2	2.8	4.4	10.6	12.6	14.8	21.0	22.6	25.3	29 12.70	− 0.18	−17.15	−17.24	17 28 55.28	− 0.06
	41	Moon II, N.	E.	52.0	54.7	56.6	3.2	5.5	7.8	14.6	16.4	19.2	38 5.56	− 0.12	. .	−17.24	17 37 48.20	−73.25
	42	μ Herculis	E.	27.3	30.1	36.5	38.8	41.1	43.3	45.6	52.0	54.8	41 41.06	− 0.20	−17.17	−17.24	17 41 23.62	− 0.07
	43	Saturn I, N.	E.	29.6	32.3	33.9	. .	. .	. .	51.6	53.4	56.0	48 42.79	− 0.12	. .	−17.24	17 48 25.43	. .
	44	Saturn II, S.	E.	. .	. .	39.6	41.9	44.2	46.4	48.7	. .	. .	48 44.18	− 0.12	. .	−17.24	17 48 26.82	. .
	45	Venus II, N.	F.	37.7	40.3	41.8	48.0	50.0	52.0	58.3	59.8	2.3	42 50.02	+ 0.02	. .	−17.57	0 42 32.47	− 0.71
	46	Polaris	F.	. .	. .	22.4	46.8	11.8	37.8	1.5	. .	. .	11 12.56	− 9.25	. .	−17.57	1 10 45.74	. .
17	47	Sun I, S.	F.	51.8	54.6	56.1	2.1	4.7	7.0	13.2	15.0	17.7	36 4.69	− 0.06	. .	−17.64	3 35 46.99	. .
	48	Sun II, N.	F.	6.3	9.0	10.8	17.2	19.3	21.6	28.2	29.7	32.5	38 19.40	− 0.06	. .	−17.64	3 37 1.70	. .
	49	α Tauri	F.	31.7	34.4	35.8	40.0	42.0	43.8	46.0	. .	. .	28 44.18	− 0.05	−17.59	−17.67	4 28 26.46	− 0.10

24. Micrometer reading has been diminished by one revolution.
24, 25, 28, 42. Bisections at sets B and D.
25. Unsteady.
27, 29, 32, 33, 34. Bisections at C_1 and C_5.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	64 56	5.8	4.9	21.0	26.9	26	332	250	. .	204	170	64.7	65 0 4.1	. .	+ 2 2.8	116 8 28.1	+ 1.6
2	307 28	8.0	8.0	23.4	27.5	27	815	745	735	. .	. .	65.3	307 31 39.5	. .	— 1 13.4	358 36 47.3	+ 2.2
3	42 10	11.5	9.9	26.0	29.4	25	. .	. .	. .	090	210	65.3	42 14 16.0	. .	+ 51.5	93 21 28.7	+ 1.3
4	352 12	11.3	9.0	25.0	27.9	24	. .	970	. .	930	. .	65.3	352 16 21.5	. .	— 7.7	43 22 35.0	+ 0.1
5	64 56	9.2	8.0	24.0	28.6	26	. .	135	. .	060	. .	65.3	65 0 4.2	. .	+ 2 1.2	116 8 26.6	0.0
6	57 52	11.8	10.0	25.5	29.6	19	. .	520	355	245	. .	65.3	57 57 45.3	. .	+ 1 30.7	109 5 37.2	
7	285 0	9.2	7.0	22.7	27.9	25	. .	750	. .	710	. .	65.3	285 4 10.0	. .	— 3 28.3	336 7 2.9	+ 0.3
8	29 14	12.0	10.5	27.0	29.9	24	. .	760	. .	660	. .	65.3	29 18 23.3	. .	+ 32.0	80 25 16.5	+ 0.6
9	5 4	9.0	7.5	23.3	25.8	25	. .	970	. .	890	. .	65.3	5 8 8.2	. .	+ 5.1	56 14 34.5	+ 1.1
10	24 16	11.9	11.0	26.0	29.2	23	. .	045	. .	960	. .	65.3	24 20 49.8	. .	+ 25.8	75 27 36.8	+ 0.8
11	62 50	8.0	7.2	24.3	27.5	22	. .	765	. .	690	. .	65.3	62 54 56.5	. .	+ 1 50.8	114 3 8.5	+ 2.3
12	36 24	4.4	6.2	22.5	25.7	28	768	745	. .	760	720	63.7	36 27 25.0	. .	+ 40.9	87 34 27.1	
13	310 14	4.7	4.5	22.0	26.6	26	530	610	590	590	585	63.7	310 17 58.6	. .	— 1 4.6	1 23 15.2	+ 0.2
14	22 24	7.0	6.5	23.0	26.3	23	. .	850	. .	722	. .	63.7	22 38 40.4	. .	+ 22.7	73 45 24.3	+ 2.5
15																	
16	47 10	11.8	13.6	0.0	1.2	25	. .	810	. .	695	. .	63.7	47 14 3.8	. .	+ 58.6	98 21 23.6	+ 0.8
17	10 20	7.2	7.7	25.7	27.6	26	. .	800	. .	715	. .	63.7	10 23 53.3	. .	+ 10.0	61 30 24.5	+ 2.0
18	31 26	11.5	12.5	28.0	0.4	24	510	500	. .	420	410	63.7	31 30 24.8	. .	+ 33.2	82 37 19.2	+ 2.0
19	55 20	10.6	11.8	27.1	29.5	22	. .	210	. .	110	. .	63.7	55 25 0.6	. .	+ 1 18.3	106 32 40.1	+ 4.0
20	307 28	16.3	14.5	29.5	3.2	27	. .	550	580	510	. .	65.4	307 31 36.3	. .	— 1 13.0	358 36 44.5	— 0.4
21	38 44	14.2	11.5	26.5	29.6	23	. .	165	. .	090	. .	65.4	38 48 46.8	. .	+ 45.2	89 55 53.2	+ 1.3
22	348 52	14.3	12.2	28.1	0.6	26	. .	332	. .	298	. .	65.4	348 55 57.6	. .	— 11.0	40 2 7.8	+ 0.6
23	19 46	16.8	16.2	2.1	2.2	24	. .	840	. .	725	. .	65.4	19 50 17.8	. .	+ 20.3	70 56 59.3	+ 1.8
24	290 40	10.3	8.5	23.0	28.3	30	. .	018	. .	990	. .	65.4	290 43 19.6	. .	— 2 27.3	341 47 13.5	+ 1.2
25	333 50	13.0	10.5	25.5	29.0	25	. .	808	. .	870	. .	65.4	333 54 5.8	. .	— 27.5	24 59 59.5	— 2.3
26	18 58	13.5	12.2	27.5	29.8	27	. .	243	. .	275	. .	65.4	19 1 43.5	. .	+ 19.4	70 8 24.1	+ 1.9
27	285 42	11.0	10.2	25.8	28.5	27	. .	570	. .	580	. .	65.4	285 45 40.4	. .	— 3 16.0	336 48 45.6	+ 0.4
28	346 22	12.2	10.7	25.8	28.5	23	. .	795	. .	770	. .	65.4	346 26 38.1	. .	— 13.5	37 32 45.8	+ 0.2
29	322 34	13.0	12.0	27.8	29.5	27	. .	075	. .	050	. .	65.4	322 37 4.66	. .	— 42.9	13 43 24.9	— 0.8
30	11 12	14.5	13.5	29.4	0.0	25	. .	975	. .	945	. .	65.4	11 16 2.3	. .	— 11.2	62 22 34.7	+ 1.0
31	54 18	12.2	10.6	25.6	27.7	24	. .	790	. .	685	. .	65.4	54 22 23.6	. .	+ 1 18.2	105 30 3.0	+ 0.4
32	324 8	16.0	14.0	29.5	2.8	22	. .	120	. .	170	. .	65.4	324 12 59.2	. .	— 40.5	15 18 39.9	— 3.1
33	357 56	13.7	13.5	29.1	29.8	28	. .	648	. .	550	. .	65.4	357 59 22.1	. .	— 2.0	49 5 41.3	— 0.3
34	296 6	14.5	13.6	28.2	1.5	23	. .	790	. .	910	. .	65.4	296 10 34.2	. .	— 1 53.7	347 15 1.7	0.0
35	47 42	16.2	14.5	0.2	2.0	22	. .	990	. .	955	. .	65.4	47 46 46.4	. .	+ 1 1.8	98 54 9.4	+ 2.8
36	1 0	13.7	12.2	26.5	28.8	28	. .	050	. .	990	. .	65.4	1 3 32.4	. .	+ 1.0	52 9 54.6	— 0.5
37	11 40	14.0	13.8	27.8	29.2	25	. .	312	. .	270	. .	65.4	11 44 13.2	. .	+ 11.7	62 50 46.1	— 0.2
38	31 58	13.0	12.2	25.8	28.8	22	. .	582	. .	. .	. .	65.4	32 2 56.6	. .	+ 35.2	83 9 53.0	+ 3.3
39																	
40	26 10	15.6	13.5	27.8	0.5	26	. .	820	. .	760	. .	65.4	26 13 49.5	. .	+ 27.7	77 20 38.4	+ 0.7
41	60 28	12.7	11.1	26.8	0.6	18	850	785	680	555	430	65.4	60 33 55.0	. .	+ 1 39.5	111 43 55.7	
42	11 2	11.3	10.0	26.0	27.0	27	. .	800	. .	750	. .	65.4	11 5 37.7	. .	+ 11.1	62 12 10.0	+ 0.4
43	60 56	10.5	9.2	25.2	27.7	26	620	. .	. .	. .	558	65.4	60 59 55.9	. .	+ 1 41.3	112 7 58.4	
44	60 56	10.5	9.2	25.2	27.7	25	. .	363	. .	272	. .	65.4	61 0 15.5	. .	+ 1 41.3	112 8 18.0	
45	36 2	8.0	7.9	24.8	27.5	25	550	570	. .	500	416	65.1	36 6 13.6	. .	+ 40.2	87 13 15.0	+ 4.3
46	310 14	5.7	5.8	22.4	25.7	26	558	502	504	484	510	65.1	310 18 0.5	. .	— 1 5.0	1 23 16.7	+ 1.5
47	19 42	10 16.0	17.2	4.9	4.0	27	354	316	. .	. .	. .	65.1	19 45 38.2	. .	+ 19.7	70 52 19.1	
48	19 10	10 14.5	16.6	2.2	3.0	25	. .	. .	. .	980	980	65.1	19 13 58.7	. .	+ 19.1	70 20 39.0	
49																	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	30.052	69.4	56.2
2	30.020	72.0	65.8
3	. .	. .	63.1
6	30.000	70.5	61.0
7	. .	. .	60.5
11	29.994	70.5	60.1
12	. .	. .	76.0
13	29.976	71.0	80.5
20	. .	. .	65.8
45	29.930	72.0	76.5
46	. .	. .	76.4
47	29.984	75.0	80.6

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
6	—51 14.3	+ 16 33.0	. .	— 34 41.3
12	— 6.8	+ 10.8	. .	+ 4.0
41	—52 1.5	+ 16 21.2	. .	— 35 40.3
43	— 0.8	+ 9.8	. .	+ 9.0
44	— 0.8	— 9.8	. .	— 10.6
45	— 6.5	+ 10.8	. .	+ 4.3
47	— 2.9	— 15 50.0	. .	— 15 52.9
48	— 2.8	+ 15 50.0	. .	+ 15 47.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
May 17	1	β Orionis	F.	21.7	24.2	25.8	32.0	34.0	36.0	42.0	43.8	46.5	8 34.00	+ 0.08	−17.82	−17.69	5 8 16.39	+ 0.12
	2	β Tauri	F.	7.2	10.0	11.8	18.9	21.0	23.3	30.2	32.0	35.0	18 21.04	− 0.11	−17.70	+17.69	5 18 3.24	− 0.01
	3	ε Orionis	F.	41.5	44.0	45.7	. .	. .	. .	. .	. .	. .	29 53.42	+ 0.05	−17.55	−17.70	5 29 35.77	− 0.16
	4	α Orionis	F.	. .	. .	20.5	22.7	24.8	26.8	29.0	. .	. .	48 24.77	0.00	−17.80	−17.76	5 48 7.01	+ 0.01
19	5	Sun I, S.	E.	50.0	52.9	54.5	1.0	3.0	5.4	11.9	13.6	16.3	44 3.18	− 0.23	. .	−18.64	3 43 44.31	. .
	6	Sun II, N.	E.	5.1	7.9	9.5	15.9	18.1	20.4	26.8	28.6	31.4	46 18.19	− 0.23	. .	−18.64	3 45 59.32	. .
	7	α Orionis	E.	13.6	16.2	21.8	23.9	26.0	28.0	30.1	35.9	38.2	48 25.97	− 0.25	−18.78	−18.69	5 48 7.03	+ 0.04
	8	α Canis Majoris	E.	30.3	33.0	34.6	40.9	43.0	45.1	51.5	53.0	55.6	39 43.00	− 0.25	−18.78	−18.74	6 39 24.01	− 0.06
	9	β Corvi	E.	40.6	43.5	45.0	51.6	53.9	56.0	2.8	4.4	7.1	27 53.88	− 0.26	−18.84	−18.86	12 27 34.76	− 0.06
	10	21 Cassiopeæ, S. P.	E.	. .	. .	39.2	32.0	24.4	16.5	9.0	. .	. .	37 24.26	− 0.46	. .	−18.86	0 37 4.98	+ 0.66
	11	32^1 Camelopardalis	E.	. .	. .	50.0	9.2	29.2	48.6	8.5	. .	. .	48 29.17	+ 0.26	. .	−18.87	12 48 10.54	− 7.73
	12	32^2 Camelopardalis	E.	. .	. .	57.4	16.6	36.6	55.9	15.5	. .	. .	48 36.47	+ 0.26	. .	−18.87	12 48 17.86	− 0.41
	13	θ Virginis	E.	21.2	23.7	25.3	31.5	33.4	35.5	41.6	43.2	45.8	3 33.47	− 0.25	−18.90	−18.88	13 3 14.34	− 0.02
	14	Polaris, S. P.	E.	. .	. .	55.5	32.0	10.5	43.0	22.0	. .	. .	11 8.10	− 2.58	. .	−18.88	1 10 46.64	− 1.46
	15	α Virginis	E.	28.7	31.4	32.8	39.0	41.1	43.1	49.5	51.0	53.6	18 41.13	− 0.26	−18.86	−18.88	13 18 21.99	− 0.03
	16	38 Cassiopeæ, S. P.	E.	. .	. .	4.7	58.8	53.1	47.1	41.0	. .	. .	21 52.97	− 0.42	. .	−18.88	1 21 33.67	+ 0.14
	17	ζ Virginis	E.	12.3	14.8	16.4	22.4	24.5	26.5	32.6	34.0	36.8	28 24.48	− 0.25	−18.85	−18.88	13 28 5.35	− 0.03
	18	η Ursæ Majoris	E.	26.6	32.9	39.1	42.3	45.4	48.7	51.9	58.3	4.8	42 45.56	− 0.20	. .	−18.89	13 42 26.47	− 0.03
	19	η Bootis	E.	37.0	41.4	45.8	47.9	50.0	52.1	54.4	58.4	2.9	48 49.99	− 0.24	−18.86	−18.89	13 48 30.86	− 0.08
	20	α Aquilæ	E.	. .	. .	. .	. .	. .	. .	54.9	56.5	59.0	44 46.65	− 0.25	−19.05	−19.05	19 44 27.35	+ 0.04
	21	β Aquilæ	E.	3.6	6.0	7.6	13.7	15.8	17.9	24.0	25.6	28.2	49 15.82	− 0.25	−19.04	−19.05	19 48 56.52	+ 0.02
	22	λ Ursæ Minoris	E.	. .	. .	. .	23.0	15.5	58.0	48.5	. .	. .	55 13.17	+ 2.68	. .	−19.05	19 54 56.80	+ 2.02
	23	α^2 Capricorni	E.	57.9	2.1	6.2	8.5	10.5	12.5	14.7	18.9	23.0	11 10.48	− 0.26	−19.05	−19.05	20 11 51.17	+ 0.04
	24	π Capricorni	E.	2.5	4.2	8.4	10.6	12.7	14.9	17.0	21.3	23.0	20 12.73	− 0.26	−19.06	−19.06	20 19 53.41	+ 0.03
	25	α Cygni	E.	3.1	6.7	8.9	17.5	20.3	23.1	31.9	34.0	37.7	37 20.36	− 0.21	. .	−19.07	20 37 1.08	+ 0.13
	26	Polaris	F.	. .	. .	. .	49.0	. .	35.0	. .	. .	. .	11 12.65	− 3.38	. .	−19.27	1 10 50.00	+ 1.61
20	27	Sun I, S.	F.	50.1	52.9	54.7	1.1	3.3	5.6	12.1	13.7	16.5	48 3.33	− 0.12	. .	−19.34	3 47 43.87	
	28	Sun II, N.	F.	5.6	8.1	9.8	16.4	18.6	20.7	27.2	29.0	31.5	50 18.54	− 0.12	. .	−19.34	3 49 59.08	
	29	α Canis Majoris	F.	30.7	33.4	35.0	41.5	43.5	45.8	52.0	53.5	56.3	39 43.52	− 0.02	−19.52	−19.43	6 39 24.07	+ 0.01
	30	ε Canis Majoris	F.	. .	. .	44.9	47.2	49.4	52.0	54.2	. .	. .	53 49.55	+ 0.02	−19.54	−19.43	6 53 30.14	+ 0.06
	31	Polaris, S. P.	F.	30.0	. .	. .	. .	. .	. .	. .	. .	. .	11 4.80	+ 5.01	. .	−19.61	1 10 50.23	+ 1.56
	32	η Ursæ Majoris	F.	27.5	31.5	33.8	43.3	46.4	49.6	59.1	1.5	5.5	42 46.47	− 0.27	. .	−19.63	13 42 26.57	+ 0.08
	33	50 Cassiopeæ, S. P.	F.	18.0	10.1	5.0	46.0	39.5	32.7	13.0	8.4	0.8	51 39.29	+ 0.26	. .	−19.63	1 52 19.92	− 0.36
	34	α Draconis	F.	45.8	51.8	55.5	9.9	14.5	19.7	34.1	37.6	43.8	1 14.74	− 0.40	. .	−19.63	14 0 54.71	+ 0.14
	35	α Bootis	F.	52.0	54.6	56.4	2.8	5.0	7.1	13.6	15.2	18.0	10 4.97	− 0.16	−19.62	−19.64	14 9 45.17	− 0.02
	36	ι Cassiopeæ, S. P.	F.	. .	. .	50.2	45.0	39.7	34.8	29.5	. .	. .	18 39.81	+ 0.17	. .	−19.64	2 18 20.34	− 0.48
	37	θ Bootis	F.	52.4	54.7	1.4	4.7	8.1	11.5	14.8	21.5	23.9	21 8.11	− 0.28	. .	−19.64	14 20 48.19	+ 0.18
	38	5 Ursæ Minoris	F.	23.5	34.2	40.8	6.6	15.6	24.0	49.2	56.0	6.3	28 15.13	− 0.64	. .	−19.65	14 27 54.84	+ 0.71
	39	ε Bootis	F.	26.0	28.8	30.6	37.5	39.8	42.2	49.0	50.8	53.6	39 39.81	− 0.18	−19.64	−19.65	14 39 19.98	− 0.03
	40	α^2 Libræ	F.	49.9	52.6	54.0	58.4	2.5	6.8	10.9	12.5	15.3	44 2.54	− 0.07	−19.60	−19.65	14 43 42.82	− 0.06
	41	β Ursæ Minoris	F.	45.5	54.7	16.0	24.0	31.0	39.0	47.2	7.8	18.3	52 31.50	− 0.58	. .	−19.65	14 51 11.27	+ 0.52
	42	β Bootis	F.	8.4	11.7	13.7	21.6	24.5	27.0	35.3	37.3	41.0	57 24.50	− 0.23	. .	−19.66	14 57 4.61	+ 0.04
	43	48 Cephei, S. P.	F.	4.0	52.5	46.1	27.6	8.9	50.8	31.7	24.5	13.5	4 8.84	− 0.44	. .	−19.66	3 3 49.62	− 0.86
	44	β Libræ	F.	9.5	12.1	13.7	19.8	21.8	23.9	30.1	31.6	34.2	10 21.86	− 0.09	−19.46	−19.66	15 10 2.11	− 0.20
	45	μ^1 Bootis	F.	41.0	44.1	46.0	53.8	56.2	58.9	6.8	8.7	11.9	19 56.38	− 0.21	−19.73	−19.67	15 19 36.50	+ 0.05
21	46	Sun I, N.	Ha.	50.5	53.3	54.9	1.4	3.6	5.8	12.4	14.2	16.8	52 3.66	. .	. .	. .	. . . .	. .
	47	Sun II, S.	Ha.	5.8	8.5	10.2	16.6	18.8	21.1	27.5	29.3	31.9	54 18.86	. .	. .	. .	. . . .	. .
	48	υ Leonis	Ha.	25.9	28.4	30.0	36.0	38.0	40.0	46.2	47.6	50.2	30 38.03	+ 0.33	−20.20	−20.11	11 30 18.25	+ 0.05
	49	γ Cephei, S. P.	Ha.	. .	. .	36.5	27.5	18.2	9.3	. .	. .	. .	34 18.44	+ 2.13	. .	−20.11	23 34 0.47	− 0.38

31. Transit and bisection at B_1.
36, 41, 43. Bisections at sets B and D.
49. Bisections at D_3 and C_1.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	47 10	10 10.6	12.2	29.4	1.8	25	. .	984	. .	894	. .	65.1	47 14 3.0	. .	+ 59.3	98 21 23.5	+ 0.9
2	10 20	10 10.0	11.0	27.7	29.8	26	. .	734	. .	698	. .	65.1	10 23 52.7	. .	+ 10.1	61 30 24.0	+ 1.4
3	40 6	9.7	10.3	28.0	0.0	25	. .	260	. .	. .	. .	65.1	40 10 18.3	. .	+ 46.3	91 17 25.8	+ 3.9
4	31 26	11.5	12.3	29.0	0.9	24	. .	608	. .	. .	. .	65.1	31 30 24.4	. .	+ 33.5	82 37 19.1	+ 2.0
5	19 16	7.5	8.5	24.4	27.8	28	775	770	. .	. .	. .	64.2	19 19 23.8	. .	+ 19.6	70 26 4.6	
6	18 44	3.0	4.5	20.4	23.6	27	. .	. .	. .	645	610	64.2	18 47 43.8	. .	+ 19.0	69 54 24.0	
7	31 26	5.5	5.6	21.0	26.0	25	. .	142	. .	058	. .	64.2	31 30 21.5	. .	+ 34.2	82 37 16.9	− 1.1
8	55 20	5.3	6.1	23.4	25.8	22	. .	940	. .	912	. .	64.2	55 24 53.9	. .	+ 1 20.6	106 32 35.7	0.0
9	61 28	9.8	10.8	28.0	29.8	23	. .	332	. .	258	. .	66.3	61 32 46.2	. .	+ 1 44.0	112 40 51.4	+ 3.5
10	293 8	10.2	9.8	26.5	29.5	25	. .	575	535	475	. .	66.3	293 12 12.5	. .	− 2 11.1	344 16 22.6	+ 3.5
11	314 42	11.0	10.2	27.2	29.5	22	. .	860	. .	845	. .	66.3	314 46 56.2	. .	− 56.9	5 52 20.5	−15.8
12	314 42	11.0	10.2	27.2	29.5	21	. .	620	. .	615	. .	66.3	314 47 15.0	. .	− 56.9	5 52 39.3	+ 3.0
13	43 40	8.5	8.1	25.3	29.1	28	. .	365	. .	415	. .	66.3	43 43 30.0	. .	+ 54.0	94 50 45.2	+ 1.4
14	307 28	9.0	8.9	24.9	29.1	27	938	945	918	900	890	66.3	307 31 35.8	. .	− 1 13.4	358 36 43.6	− 0.8
15	49 18	10.6	10.0	26.4	28.3	28	. .	065	. .	940	. .	66.3	49 21 34.8	. .	+ 1 5.7	100 29 1.7	+ 1.6
16	288 28	9.8	10.0	26.8	0.0	26	. .	845	. .	830	. .	66.3	288 31 52.4	. .	− 2 46.8	339 35 26.8	+ 1.7
17	38 44	10.2	8.9	24.8	27.5	23	. .	360	. .	295	. .	66.3	38 48 47.3	. .	+ 45.4	89 55 53.9	+ 2.2
18	348 52	12.7	11.5	28.5	0.1	26	. .	530	. .	455	. .	66.3	348 55 56.5	. .	− 11.0	40 2 6.7	+ 0.2
19	19 46	12.1	11.9	27.7	29.1	25	. .	130	. .	125	. .	66.3	19 50 17.6	. .	+ 20.4	70 56 59.2	+ 2.2
20	30 18	9.0	8.5	24.5	27.4	28	. .	. .	. .	300	310	65.8	30 21 30.5	. .	+ 33.4	81 28 25.1	− 0.3
21	32 44	9.5	9.5	24.0	28.3	26	. .	210	. .	190	. .	65.8	32 48 3.0	. .	+ 36.7	83 55 0.9	+ 1.3
22	309 56	8.3	7.3	24.5	28.0	26	. .	745	800	760	815	65.8	309 59 55.0	. .	− 1 7.8	1 5 8.4	− 0.9
23	51 44	11.3	10.0	26.5	29.5	21	. .	910	. .	795	. .	65.8	51 49 7.6	. .	+ 1 12.3	102 56 41.1	+ 0.7
24	57 26	8.8	8.2	24.8	28.4	25	. .	595	. .	525	. .	65.8	57 30 12.9	. .	+ 1 29.2	108 38 3.3	+ 0.8
25	354 0	9.6	8.1	25.3	27.5	22	. .	805	. .	745	. .	65.8	354 4 55.8	. .	− 5.9	45 11 11.1	− 0.8
26	310 14	7.3	7.6	23.1	27.5	26	. .	366	. .	410	. .	65.9	310 18 1.7	. .	− 1 5.4	1 23 17.5	+ 1.8
27	19 2	11.1	11.2	26.4	29.2	23	050	052	. .	. .	. .	65.9	19 6 50.6	. .	+ 18.9	70 13 30.7	
28	18 30	8.4	9.0	24.3	27.6	21	. .	. .	. .	836	776	65.9	18 35 10.1	. .	+ 18.2	69 41 49.5	
29	55 20	10 14.5	13.8	29.0	1.7	22	418	395	. .	336	326	65.9	55 24 57.0	. .	− 1 8.5	106 32 36.7	+ 1.2
30																	
31	307 28	10 12.8	13.0	22.0	29.6	27	608	. .	. .	. .	. .	67.4	307 31 38.6	. .	− 1 13.3	358 36 46.5	+ 2.3
32	348 52	10 18.4	17.3	3.0	3.5	26	. .	308	. .	222	. .	67.4	348 55 56.3	. .	− 11.0	40 2 6.5	+ 0.2
33	290 40	10 14.9	13.4	27.4	0.9	28	. .	795	. .	690	. .	67.4	290 43 20.9	. .	− 2 28.1	341 47 14.0	+ 2.5
34	333 50	16.4	17.5	2.2	2.1	25	. .	632	. .	596	. .	67.4	333 54 7.5	. .	− 27.6	25 0 1.1	+ 0.4
35	18 58	10 17.5	16.4	1.0	2.3	27	. .	250	. .	156	. .	67.4	19 1 42.9	. .	+ 19.5	70 8 23.6	+ 2.1
36	285 42	11.1	10.9	25.2	28.1	27	. .	562	. .	644	. .	67.4	285 45 42.0	. .	− 3 17.1	336 48 46.1	+ 1.7
37	346 22	13.1	13.0	26.9	28.2	23	. .	. .	. .	800	796	67.4	346 26 38.4	. .	− 13.6	37 32 46.0	+ 1.4
38	322 34	13.1	11.4	26.0	28.9	27	. .	330	. .	160	. .	67.4	322 37 47.9	. .	− 43.1	13 43 26.0	− 0.6
39	11 12	9.5	9.6	24.0	25.5	26	518	420	. .	396	380	67.4	11 16 2.0	. .	+ 11.3	62 22 34.5	+ 1.6
40	54 18	17.2	16.4	1.7	2.3	24	468	480	. .	440	410	67.4	54 22 24.6	. .	+ 1 18.6	105 30 4.4	+ 1.8
41	324 8	12.7	11.7	26.3	28.5	22	. .	396	. .	364	. .	67.4	324 13 1.3	. .	− 40.7	15 18 41.8	0.0
42	357 56	10 11.2	10.0	25.0	26.0	28	. .	944	. .	898	. .	67.4	357 59 23.0	. .	− 2.0	49 5 42.2	+ 1.6
43	296 6	10.5	9.3	24.5	27.5	24	. .	092	. .	188	. .	67.4	296 10 35.6	. .	− 1 54.4	347 15 2.4	+ 1.7
44	47 42	12.1	13.0	28.4	29.7	23	360	360	. .	284	270	67.4	47 46 45.6	. .	+ 1 2.4	98 54 9.2	+ 2.7
45	1 0	8.3	8.4	22.6	25.1	28	480	376	. .	306	292	67.4	1 3 33.6	. .	+ 1.0	52 9 55.8	+ 1.7
46																	
47																	
48	38 56	10 19.8	18.7	3.4	4.0	28	480	475	. .	. .	. .	70.2	38 59 25.0	. .	+ 44.6	90 6 30.8	+ 3.7
49	295 46	18.6	18.0	1.2	4.0	27	. .	390	. .	330	. .	70.2	295 49 41.7	. .	− 1 53.3	346 54 9.6	+ 2.6

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	. .	. .	80.5
2	. .	. .	80.6
4	29.996	75.0	83.0
6	. . .	. .	76.5
10	. .	. .	68.0
16	. .	. .	68.5
22	. .	. .	64.0
26	30.170	70.5	77.2
27	30.150	73.1	86.2
29	30.108	75.0	89.0
31	30.114	67.0	68.2
34	. .	. .	68.0
38	. .	. .	67.8
46	30.112	74.5	86.1
49	. .	. .	77.9

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 2.8	− 15 50.3	. .	− 15 53.1
6	− 2.8	+ 15 50.3	. .	+ 15 47.5
27	− 2.8	− 15 50.6	. .	− 15 53.4
28	− 2.8	+ 15 50.6	. .	+ 15 47.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
May 21	1	γ Ursæ Majoris	Ha.	59.2	3.5	6.0	16.8	20.1	23.8	34.2	36.8	41.0	47 20.16	− 0.32	. .	−20.12	11 46 59.72	+ 0.07
	2	ο Virginis	Ha.	43.3	45.9	47.5	53.7	55.7	57.8	4.0	5.6	8.1	58 58.73	+ 0.25	−20.07	−20.12	11 58 35.86	− 0.07
	3	4 Draconis	Ha.	. .	. .	8.8	18.7	29.3	38.8	49.5	. .	. .	6 29.09	− 1.84	. .	−20.12	12 6 7.13	+ 0.15
	4	η Virginis	Ha.	23.7	26.2	27.7	33.9	35.9	38.0	44.0	45.6	48.0	13 35.89	+ 0.33	−20.08	−20.12	12 13 16.10	− 0.06
25	5	Sun I, N.	E.	58.5	1.0	2.8	9.5	11.7	13.8	20.3	22.0	24.7	8 11.59	+ 0.16	. .	−22.33	4 7 49.42	. .
	6	Sun II, S.	E.	14.4	17.2	18.7	25.3	27.5	29.7	36.4	37.9	40.7	10 27.53	+ 0.16	. .	−22.33	4 10 5.36	. .
	7	β Orionis.	E.	25.9	28.4	30.0	36.3	38.3	40.3	46.5	48.0	50.6	8 38.26	+ 0.31	−22.30	−22.34	5 8 16.23	− 0.05
	8	β Tauri	E.	. .	. .	. .	. .	. .	. .	34.9	36.6	39.5	18 25.59	+ 0.12	−22.46	−22.35	5 18 3.36	+ 0.09
	9	δ Orionis.	E.	30.5	33.1	34.6	40.9	42.9	44.9	51.0	52.5	54.9	25 42.81	+ 0.27	−22.25	−22.35	5 25 20.73	− 0.13
	10	ε Orionis.	E.	45.7	48.3	49.8	55.9	57.9	0.0	6.1	7.7	10.2	30 59.96	+ 0.27	−22.31	−22.35	5 29 35.88	− 0.07
	11	α Orionis.	E.	16.6	19.2	20.8	27.0	29.0	31.0	37.4	38.9	41.5	48 29.04	+ 0.23	−22.31	−22.35	5 48 6.92	− 0.07
	12	γ Geminorum	E.	20.6	23.1	24.7	31.2	33.2	35.4	41.6	43.3	46.0	30 33.23	+ 0.18	−22.32	−22.36	6 30 11.05	− 0.07
	13	α Canis Majoris.	E.	33.3	35.9	37.5	43.8	45.9	48.0	54.4	56.0	58.7	35 45.94	+ 0.35	−22.34	−22.36	6 39 23.93	− 0.10
	14	α^2 Geminorum	E.	25.2	28.0	29.9	37.1	39.5	42.0	49.1	51.0	54.1	26 39.54	+ 0.09	−22.49	−22.37	7 26 17.26	+ 0.36
	15	α Canis Minoris.	E.	38.7	41.3	42.9	49.0	51.0	53.0	59.2	0.7	3.2	32 51.00	+ 0.23	−22.31	−22.38	7 32 28.85	− 0.21
	16	β Geminorum	E.	29.1	32.0	33.6	40.7	42.9	45.3	52.2	54.1	56.8	37 42.97	+ 0.12	−22.49	−22.38	7 37 20.71	+ 0.08
June 6	17	δ Leonis	F.	22.8	25.6	27.2	33.7	35.9	38.2	44.6	46.3	49.0	7 35.92	+ 0.28	−24.49	−24.58	11 7 11.62	− 0.15
	18	η Virginis	F.	27.8	30.4	31.9	38.0	40.0	42.1	48.2	49.7	52.2	13 40.03	+ 0.51	−24.54	−24.59	12 13 15.95	− 0.07
	19	12 Canum Venat.	F.	9.6	11.6	16.7	19.5	22.0	24.7	27.3	32.7	34.6	50 22.08	0.00	−24.67	−24.59	12 49 57.49	+ 0.08
	20	Polaris, S. P.	F.	. .	48.0	23.0	59.0	34.0	11.0	23.0	19.0	38.0	10 58.69	+26.64	. .	−21.60	1 11 0.64	. .
	21	α Virginis	F.	33.4	36.0	37.5	43.8	45.8	47.8	54.1	55.6	58.3	18 45.81	+ 0.63	−24.53	−24.60	13 18 21.84	− 0.08
	22	α Bootis	F.	56.5	59.1	0.8	7.3	9.5	11.7	18.1	19.7	22.5	10 9.47	+ 0.29	−24.63	−24.60	14 9 45.16	+ 0.03
	23	ε Bootis	F.	30.7	33.5	35.2	42.0	44.4	46.7	53.6	55.3	58.3	39 44.41	+ 0.19	−24.64	−24.60	14 39 20.00	+ 0.02
	24	α^2 Libræ	F.	54.2	56.8	58.4	4.6	6.8	8.9	15.4	17.0	19.5	44 6.84	+ 0.69	−24.64	−24.60	14 43 42.93	+ 0.03
	25	β Bootis	F.	13.0	16.5	18.5	26.5	29.3	31.9	40.0	42.0	45.4	57 29.23	− 0.02	. .	−24.61	14 57 4.61	+ 0.09
	26	α Coronæ Borealis	F.	23.2	26.1	28.0	34.8	37.0	39.3	46.3	48.0	50.9	29 37.07	+ 0.20	−24.60	−24.61	15 29 12.66	+ 0.05
	27	α Serpentis	F.	5.3	8.0	9.5	15.6	17.6	19.8	25.8	27.3	29.9	38 17.64	+ 0.44	−24.60	−24.61	15 37 53.47	+ 0.01
	28	ε Serpentis	F.	33.6	36.1	37.7	44.0	46.0	48.0	54.1	55.6	58.2	44 45.92	+ 0.46	−24.59	−24.61	15 44 21.77	− 0.02
	29	Polaris	E.	. .	. .	59.5	25.0	51.5	13.0	39.0	. .	. .	11 50.12	−24.43	. .	−24.58	1 11 1.11	+ 0.05
	30	β Arietis	E.	. .	. .	47.3	49.4	51.6	53.8	56.0	. .	. .	47 51.63	+ 0.33	−24.72	−24.59	1 47 27.37	+ 0.14
	31	Venus II, N.	E.	21.3	23.9	25.5	31.8	33.8	36.0	42.0	43.8	46.1	8 33.80	+ 0.45	. .	−24.59	2 8 9.66	− 0.60
7	32	Sun I, N.	E.	9.8	12.5	14.2	20.8	23.3	25.3	31.7	33.7	36.4	1 23.08	+ 0.30	. .	−24.63	5 0 58.75	. .
	33	Sun II, S.	E.	27.0	29.9	31.7	38.1	40.4	42.6	49.2	51.0	53.7	3 40.40	+ 0.30	. .	−24.63	5 3 16.07	. .
	34	ο Virginis	E.	47.7	50.2	51.9	58.0	0.0	2.0	8.3	9.9	12.5	59 0.06	+ 0.44	−24.76	−24.71	11 58 35.79	+ 0.03
	35 36	Moon I, N.	E.	0.6	3.4	5.0	11.2	13.2	15.3	21.5	23.2	25.9	9 13.26	+ 0.50	. .	−24.71	12 8 49.5	+67.37
	37	β Corvi	E.	45.3	48.1	49.8	56.4	58.6	0.8	7.4	9.0	11.9	27 58.59	+ 0.80	−24.80	−24.71	12 27 34.68	+ 0.05
	38	21 Cassiopeæ, S. P.	E.	. .	. .	43.5	35.6	28.2	20.5	13.2	. .	. .	37 28.16	+ 2.78	. .	−24.72	0 37 6.22	+ 0.41
	39	α Canum Venat.	E.	6.3	9.6	11.6	19.5	22.1	24.8	32.6	34.5	37.8	50 22.09	+ 0.04	−24.73	−24.72	12 49 57.41	+ 0.01
	40	θ Virginis	E.	26.1	28.6	30.0	36.2	38.2	40.2	46.5	47.8	50.5	3 38.23	+ 0.60	−24.62	−24.72	13 3 14.11	− 0.14
	41	Polaris, S. P.	E.	. .	. .	48.0	24.0	59.0	37.0	12.0	. .	. .	10 59.40	+26.35	. .	−24.72	1 11 1.03	− 0.42
	42	α Virginis	E.	33.5	36.1	37.6	43.8	45.9	48.0	54.3	55.8	58.4	18 45.93	+ 0.67	−24.70	−24.72	13 18 21.88	− 0.03
	43	38 Cassiopeæ, S. P.	E.	. .	. .	9.4	3.6	57.6	51.5	45.8	. .	. .	21 57.55	+ 2.36	. .	−24.72	1 21 35.19	+ 0.55
	44	ζ Virginis	E.	17.1	19.9	21.3	27.3	29.4	31.4	37.5	39.2	41.5	28 29.40	+ 0.54	−24.65	−24.72	13 28 5.22	− 0.07
	45	η Ursæ Majoris	E.	32.0	36.0	38.4	48.0	51.0	54.1	3.7	6.1	10.2	42 51.06	− 0.20	. .	−24.73	13 42 26.13	− 0.10
	46	η Bootis	E.	42.3	45.0	46.6	53.0	55.1	57.3	3.8	5.4	8.0	48 55.17	+ 0.32	−24.70	−24.73	13 48 30.76	− 0.08
	47	50 Cassiopeæ, S. P.	E.	. .	. .	57.3	50.3	43.9	37.1	30.9	. .	. .	52 43.86	+ 2.48	. .	−24.73	1 52 21.63	+ 0.31
	48	α Draconis	E.	50.6	56.5	0.5	14.5	19.5	24.2	38.7	42.5	48.5	1 19.50	− 0.83	. .	−24.73	14 0 53.94	− 0.18
	49	α Bootis	E.	56.7	59.3	1.0	7.4	9.5	11.7	18.2	19.8	22.5	10 9.57	+ 0.31	−24.70	−24.73	14 9 45.15	+ 0.03

3, 35. Bisections at sets B and D.
5. Unsteady.
8. Bisections at wires D_3 and VI.
29, 41. Very unsteady.
38, 43. Bisections at wires C_1 and C_5.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	344 24	16.9	16.5	0.0	0.6	23	. .	615	. .	560	. .	70.2	344 28 8.8	. .	− 15.3	35 34 44.7	− 0.8
2	29 22	18.5	18.0	1.5	2.2	26	. .	660	. .	600	. .	70.2	29 25 53.6	. .	+ 31.2	80 32 46.0	+ 3.2
3	320 30	16.5	16.5	0.5	1.2	26	. .	975	. .	850	. .	70.2	320 33 51.0	. .	− 45.4	11 39 26.8	+ 0.3
4	38 46	20.3	20.0	5.3	5.5	27	. .	360	. .	380	. .	70.2	38 49 39.5	. .	+ 44.5	89 56 45.2	+ 2.3
5	17 32	10 15.5	16.7	1.4	2.7	20	710	665	. .	. .	. .	67.7	17 37 23.8	. .	+ 17.4	68 44 2.4	
6	18 4	10 14.7	16.0	1.6	1.6	22	. .	. .	. .	530	515	67.7	18 8 54.7	. .	+ 18.0	69 15 33.9	
7	47 10	15.8	21.0	6.0	8.0	25	. .	835	. .	722	. .	67.7	47 14 1.4	. .	+ 59.0	98 21 21.6	+ 0.3
8	10 20	16.3	20.7	6.3	5.0	26	. .	. .	. .	390	330	67.7	10 23 52.6	. .	+ 10.0	61 30 23.8	+ 0.9
9	39 12	16.3	20.1	4.5	7.3	22	. .	450	. .	410	. .	67.7	39 16 53.2	. .	+ 44.6	90 23 59.0	+ 0.3
10	40 6	12.5	18.8	3.0	3.5	25	. .	192	. .	002	. .	67.7	40 10 15.1	. .	+ 46.0	91 17 22.3	+ 1.4
11	31 26	13.3	19.3	4.8	4.2	24	. .	493	. .	440	. .	67.7	31 30 23.8	. .	+ 33.4	82 37 18.4	+ 1.9
12	22 18	16.6	20.8	5.7	6.6	22	. .	400	. .	372	. .	67.7	22 22 53.6	. .	+ 22.4	73 29 37.2	+ 1.4
13	55 20	17.4	22.2	7.8	7.5	22	. .	185	. .	090	. .	67.7	55 24 55.9	. .	+ 1 18.6	106 32 35.7	+ 1.0
14	6 40	18.6	22.7	7.7	6.3	28	. .	590	. .	580	. .	67.7	6 43 17.6	. .	+ 6.4	57 49 45.2	+ 1.2
15	33 16	15.0	21.0	6.1	5.8	26	. .	690	. .	585	. .	67.7	33 19 49.0	. .	+ 35.6	84 26 45.8	+ 1.0
16	10 30	15.2	20.3	5.0	5.2	29	120	090	. .	015	002	67.7	10 33 12.8	. .	+ 10.1	61 39 44.1	+ 0.9
17	17 34	10 16.3	19.2	2.1	2.2	21	548	558	. .	458	452	70.5	17 39 12.5	. .	+ 17.5	68 45 51.2	+ 2.6
18	38 46	18.7	19.6	3.6	2.5	27	. .	670	. .	574	. .	70.5	38 49 37.6	. .	+ 44.6	89 56 43.4	+ 1.5
19	359 48	19.1	20.7	5.1	3.7	25	. .	. .	. .	080	060	70.5	359 52 14.9	. .	− 0.1	50 58 36.0	+ 0.9
20	307 28	10 19.0	18.9	2.6	4.3	27	948	896	934	946	950	70.5	307 31 32.6	. .	− 1 12.3	358 36 41.5	− 0.2
21	49 18	17.7	18.8	3.8	2.6	27	. .	. .	. .	765	711	70.5	49 21 35.0	. .	+ 1 4.8	100 29 1.0	+ 1.3
22	18 58	19.8	20.4	6.2	4.6	27	. .	370	. .	212	. .	70.5	19 1 41.2	. .	+ 19.3	70 8 21.7	+ 2.6
23	11 12	19.5	20.0	3.7	2.5	26	. .	260	. .	162	. .	70.5	11 15 59.9	. .	+ 11.1	62 22 32.2	+ 2.6
24	54 18	16.4	18.3	3.0	1.6	24	. .	556	. .	508	. .	70.5	54 22 26.1	. .	+ 1 17.9	105 30 5.2	+ 2.6
25	357 56	21.3	23.1	7.8	6.3	28	. .	686	. .	586	. .	70.5	357 59 16.4	. .	− 2.0	49 5 35.6	− 0.9
26	11 40	17.7	18.9	3.0	1.5	25	. .	552	. .	496	. .	70.5	11 44 10.7	. .	+ 11.7	62 50 43.6	+ 1.9
27	31 58	17.3	19.3	3.0	2.3	22	720	714	. .	660	674	70.5	32 2 53.7	. .	+ 35.1	83 9 50.0	+ 3.0
28	33 56	19.7	21.0	4.8	4.5	23	. .	125	. .	062	. .	70.5	34 0 45.5	. .	+ 37.9	85 7 44.6	+ 1.1
29	310 14	13.8	17.8	2.4	2.8	26	120	080	110	105	135	68.7	310 18 0.7	. .	− 1 5.1	1 23 16.8	− 1.6
30	18 38	9.2	13.7	28.4	28.2	21	. .	990	. .	890	. .	68.7	18 43 9.0	. .	+ 18.7	69 49 48.9	− 0.2
31	28 20	12.1	17.5	2.5	0.7	24	. .	050	. .	036	. .	68.7	28 24 33.8	. .	+ 29.8	79 31 24.8	
32	15 46	14.7	19.4	4.2	4.3	24	450	400	. .	. .	. .	68.7	15 50 26.4	. .	+ 15.4	66 57 3.0	
33	16 18	16.6	16.7	0.7	1.8	26	. .	. .	. .	420	400	68.7	16 21 55.7	. .	+ 15.9	67 28 32.8	
34	29 22	22.4	20.7	4.2	3.8	26	. .	840	. .	745	. .	71.4	29 25 49.6	. .	+ 31.2	80 32 42.0	+ 0.6
35	34 49	12 20.2	22.5	4.8	5.5	24	. .	522	328	100	. .	71.4	34 53 26.8	. .	+ 38.5	86 0 26.5	
36		8 21.0	21.8	5.0	5.5												
37	61 28	20.5	22.5	6.2	5.8	22	. .	877	. .	800	. .	71.4	61 32 48.8	. .	+ 1 41.9	112 40 51.9	+ 3.9
38	293 8	20.2	20.5	4.5	5.6	25	. .	665	. .	720	. .	71.4	293 12 6.4	. .	− 2 8.6	344 16 19.0	+ 1.3
39	359 48	22.7	23.0	7.8	5.0	25	. .	080	. .	012	. .	71.4	359 52 14.6	. .	− 0.1	50 58 35.7	+ 0.8
40	43 40	22.1	23.1	7.0	9.3	27	. .	955	. .	852	. .	71.4	43 43 29.8	. .	+ 53.2	94 50 44.2	+ 1.2
41	307 28	19.5	21.3	3.0	6.2	27	890	900	850	830	900	71.4	307 31 33.0	. .	− 1 12.4	358 36 41.8	+ 0.2
42	49 18	20.5	22.2	6.5	6.8	27	. .	632	. .	585	. .	71.4	49 21 35.7	. .	+ 1 4.9	100 29 1.8	+ 2.1
43	288 28	20.3	20.0	4.2	4.9	26	. .	940	. .	975	. .	71.4	288 31 47.4	. .	− 2 44.7	339 35 23.9	+ 0.7
44	38 44	18.0	20.5	3.5	3.5	23	. .	130	. .	080	. .	71.4	38 48 47.2	. .	+ 44.6	89 55 53.0	+ 2.6
45	348 52	23.2	24.0	8.8	7.5	26	. .	432	. .	368	. .	71.4	348 55 52.8	. .	− 10.9	40 2 3.1	+ 0.6
46	19 46	20.5	22.0	5.4	4.2	25	. .	160	. .	140	. .	71.4	19 50 14.5	. .	+ 20.0	70 56 55.7	+ 1.3
47	290 40	20.5	21.8	4.5	7.0	29	. .	005	. .	005	. .	71.4	290 43 13.6	. .	− 2 25.5	341 47 9.3	+ 0.3
48	333 50	19.3	21.6	6.1	4.5	25	140	. .	. .	. .	940	71.4	333 54 1.6	. .	− 27.2	24 59 55.6	− 1.0
49	18 58	21.8	23.0	5.3	5.7	27	. .	340	. .	325	. .	71.4	19 1 40.2	. .	+ 19.2	70 8 20.6	+ 1.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	29.992	77.0	77.7
4	. .	. .	76.5
13	. .	. .	84.0
17	29.950	73.2	78.8
18	. .	. .	75.0
22	29.998	72.5	71.0
26	. .	. .	69.0
28	29.984	71.2	68.6
29	. .	. .	78.0
33	30.006	75.0	87.3
35	29.980	76.0	76.0
36			
41	. .	. .	72.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 2.6	+ 15 45.7	. .	+ 15 43.1
6	− 2.7	− 15 45.7	. .	− 15 48.4
31	− 4.4	+ 8.9	. .	+ 4.5
32	− 2.4	+ 15 44.9	. .	+ 15 42.5
33	− 2.4	− 15 44.9	. .	− 15 47.3
35	−33 48.4	+ 16 10.9	. .	− 17 37.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1870.													m. s.	s	s.	s.	h. m. s.	s.
June 7	1	ι Cassiopeæ, S. P. .	E.	. .	. .	55.4	50.4	45.0	39.8	34.6	. .	. .	18 45.01	+ 2.06	. .	−24.73	2 18 22.34	+ 0.58
	2	θ Bootis	E.	. .	. .	. .	9.4	12.8	16.1	26.2	28.6	32.8	21 12.75	− 0.28	. .	−24.73	14 20 47.74	− 0.05
	3	ε Bootis	E.	. .	. .	39.8	42.1	44.4	46.7	49.0	. .	. .	39 44.41	+ 0.21	−24.67	−24.74	14 39 19.88	− 0.09
	4	Venus II, N. . .	F.	36.9	39.4	41.2	47.3	49.4	51.1	57.9	59.3	0.9	12 49.37	+ 0.53	. .	−24.99	2 12 24.91	− 0.60
	5	β Ursæ Minoris, S.P.	F.	. .	. .	47.4	39.8	32.3	24.4	17.0	. .	. .	51 32.14	+ 3.59	. .	−25.00	14 51 10.73	+ 0.62
8	6	Sun I, S. . . .	F.	17.9	20.8	22.2	28.9	31.2	32.4	40.0	41.6	44.4	5 31.04	+ 0.35	. .	−25.03	5 5 6.36	. .
	7	Sun II, N. . . .	F.	. .	. .	44.1	46.4	48.5	50.8	53.2	. .	. .	7 48.41	+ 0.35	. .	−25.03	5 7 23.73	. .
	8	α Canis Majoris. .	F.	35.5	38.2	39.6	46.0	48.1	50.3	56.7	58.3	0.9	39 48.18	+ 0.91	−25.18	−25.06	6 39 24.03	+ 0.04
	9 10	Moon I, N. .	F.	57.3	0.0	1.5	7.7	9.8	11.9	18.2	19.8	22.4	4 9.84	+ 0.71	. .	−25.15	13 3 45.40	+67.88
	11	Polaris, S. P. . .	F.	. .	31.0	32.0	. .	. .	. .	. .	. .	. .	10 53.90	+33.33	. .	−25.16	1 11 2.07	
	12	α Virginis . . .	F.	33.8	36.3	37.9	44.0	46.2	48.1	54.6	56.0	58.6	18 46.17	+ 0.83	−25.10	−25.16	13 18 21.84	− 0.07
	13	η Ursæ Majoris . .	F.	32.7	36.6	39.0	48.5	51.8	54.8	4.4	6.7	10.7	42 51.69	− 0.27	. .	−25.17	13 42 26.25	+ 0.03
	14	η Bootis	F.	. .	. .	53.2	55.5	57.6	59.9	4.2	5.7	8.4	48 55.49	+ 0.40	−25.10	−25.17	13 48 30.72	− 0.12
10	15	Polaris, S. P. . .	E.	27.0	42.0	40.0	52.0	28.0	1.0	. .	. .	. .	11 2.73	+27.28	. .	−25.82	1 11 4.19	
	16	ζ Virginis . . .	E.	18.2	20.6	22.3	28.3	30.3	32.3	38.6	40.0	42.6	28 30.36	+ 0.66	−25.75	−25.82	13 28 5.20	− 0.07
	17	η Ursæ Majoris . .	E.	33.1	37.0	39.5	49.0	52.0	55.2	4.8	7.3	10.9	48 52.09	− 0.11	. .	−25.83	13 42 26.15	− 0.03
	18	η Bootis	E.	43.1	45.8	47.6	54.0	56.2	58.4	4.9	6.5	9.3	48 56.20	+ 0.44	−25.87	−25.83	13 48 30.81	− 0.01
	19	α Draconis . . .	E.	51.2	57.5	1.1	15.6	20.4	25.3	39.7	43.1	49.5	1 20.38	− 0.75	. .	−25.83	14 0 53.80	− 0.23
	20	α Bootis	E.	57.6	0.3	1.8	8.4	10.6	12.8	19.3	20.8	23.5	10 10.57	+ 0.42	−25.89	−25.83	14 9 45.16	+ 0.06
	21	ι Cassiopeæ, S. P. .	E.	. .	. .	56.5	51.0	46.0	40.8	35.4	. .	. .	18 45.91	+ 2.23	. .	−25.83	2 18 22.31	+ 0.54
	22	θ Bootis	E.	53.8	57.8	0.4	10.5	13.7	17.0	27.0	29.5	34.0	21 13.74	− 0.18	. .	−25.83	14 20 47.73	− 0.01
	23	5 Ursæ Minoris. .	E.	29.2	40.0	46.5	12.4	20.5	29.5	55.1	1.6	12.5	28 20.81	− 1.99	. .	−25.84	14 27 52.98	− 0.15
	24	ε Bootis	E.	. .	. .	41.0	43.1	45.4	47.7	50.1	. .	. .	39 45.47	+ 0.32	−25.86	−25.84	14 39 19.95	0.00
	25	α² Libræ	E.	55.2	57.9	59.5	5.7	8.0	10.0	16.3	17.8	20.6	44 8.00	+ 0.84	−25.95	−25.84	14 43 43.00	+ 0.10
	26	β Ursæ Minoris . .	E.	51.5	0.8	6.5	29.8	37.4	44.7	8.4	13.8	23.7	51 37.40	− 1.69	. .	−25.84	14 51 9.87	− 0.12
	27	β Bootis	E.	14.2	17.5	19.4	27.5	30.0	32.8	41.2	43.2	46.5	59 30.26	+ 0.10	. .	−25.84	14 57 4.52	+ 0.03
	28	Moon N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	29	μ¹ Bootis	E.	46.7	49.8	51.6	59.4	2.0	4.5	12.4	14.4	17.6	20 2.04	+ 0.16	−25.79	−25.84	15 19 36.36	− 0.06
	30	α Coronæ Borealis .	E.	24.4	27.4	29.0	35.9	38.2	40.4	47.3	48.9	51.9	29 38.16	+ 0.33	−25.88	−25.85	15 29 12.64	+ 0.03
	31	α Serpentis . . .	E.	6.4	9.1	10.6	16.6	18.6	20.7	26.9	28.4	31.0	38 18.70	+ 0.59	−25.80	−25.85	15 37 53.44	− 0.03
	32	ε Serpentis . . .	E.	34.7	37.3	38.8	45.0	47.0	49.1	55.0	56.8	59.2	44 46.99	+ 0.61	−25.80	−25.85	15 44 21.75	− 0.05
	33	α Ceti	F.	44.2	45.9	50.0	52.0	54.0	56.0	58.2	2.1	3.6	55 54.01	+ 0.38	−25.96	−25.91	2 55 28.48	+ 0.07
	34	α Persei	S.	. .	. .	22.1	25.2	28.3	31.5	34.7	. .	. .	15 28.37	− 0.12	. .	−25.87	3 15 2.38	+ 0.35
11	35	Sun I	S.	. .	. .	52.5	54.7	57.0	59.2	1.5	. .	. .	17 56.99	+ 0.22	. .	−25.90	5 17 31.31	. .
	36	Sun II, N. . . .	S.	. .	. .	10.1	12.2	14.7	16.9	19.1	. .	. .	20 14.61	+ 0.22	. .	−25.90	5 19 48.93	. .
	37	Moon I, N. . .	S.	29.2	31.7	33.6	40.2	42.3	44.4	51.2	52.8	55.6	59 42.33	+ 0.53	. .	−26.05	15 59 16.81	. .
	38	η Herculis . . .	S.	41.8	43.9	48.7	51.6	54.2	56.8	59.3	4.7	6.9	38 54.21	+ 0.04	−25.97	−26.06	16 38 28.19	− 0.08
	39	κ Ophiuchi . . .	S.	46.0	48.5	50.0	56.2	58.3	0.3	6.5	8.0	10.7	51 58.28	+ 0.34	−26.01	−26.07	16 51 32.55	− 0.02
	40	α¹ Herculis . . .	S.	58.2	0.7	2.3	8.6	10.6	12.9	19.2	20.5	23.5	9 10.76	+ 0.30	−26.12	−26.07	17 8 44.99	+ 0.07
	41	α Ophiuchi . . .	S.	9.1	11.4	13.2	19.4	21.5	23.6	30.0	31.5	34.2	29 21.54	+ 0.31	−26.11	−26.08	17 28 55.77	+ 0.06
	42	δ Ursæ Minoris . .	S.	. .	. .	2.0	37.3	11.7	43.9	19.6	. .	. .	15 11.10	− 7.62	. .	−26.08	18 14 37.40	. .
13	43	α Tauri	F.	41.2	43.9	45.5	52.0	54.0	56.0	2.4	4.1	6.7	28 53.98	+ 0.30	−27.52	−27.36	4 28 26.92	+ 0.06
14	44	α² Libræ	F.	57.1	59.8	1.4	7.7	9.8	11.8	18.3	19.8	22.5	44 9.80	+ 0.61	−27.53	−27.54	14 43 42.87	− 0.02
	45	β Ursæ Minoris . .	F.	52.7	2.5	8.4	31.3	39.1	47.1	9.9	16.0	25.6	51 39.18	− 1.60	. .	−27.55	14 51 10.01	+ 0.21
	46	β Libræ	F.	16.9	19.6	21.0	27.3	29.3	31.3	37.6	39.0	41.7	10 29.30	+ 0.54	−27.48	−27.55	15 10 2.29	− 0.07
	47	μ¹ Bootis	F.	48.4	51.6	53.6	1.2	4.0	6.5	14.3	16.2	19.5	20 3.93	+ 0.03	−27.57	−27.55	15 19 36.41	+ 0.01
	48	α Coronæ Borealis .	F.	26.1	29.0	30.7	37.6	40.0	42.4	49.1	51.0	53.9	29 39.98	+ 0.17	−27.55	−27.55	15 29 12.60	0.00

5, 19, 23, 45. Bisections at sets B and D.
9. Bisections at wires II–VI.
15. Transits and bisections at wires C_3–B_1.
21. Bisections at wires C_1 and C_5.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	285 42	17.0	19.7	2.0	3.2	27	. .	890	. .	840	. .	71.4	285 45 34.6	. .	− 3 14.1	336 48 41.7	− 0.1
2	346 22	20.0	21.8	4.8	4.5	23	. .	980	. .	940	. .	71.4	346 26 33.2	. .	− 13.6	37 32 40.8	+ 0.6
3	11 12	22.8	25.0	8.5	7.2	26	. .	080	. .	056	. .	71.4	11 15 57.6	. .	+ 11.1	62 21 29.9	+ 0.5
4	27 58	10 15.8	18.2	2.1	1.8	22	. .	908	. .	904	. .	69.5	28 2 50.4	. .	+ 29.3	79 9 40.9	
5	293 32	14.8	16.9	1.4	3.0	21	904	750	. .	. .	. .	69.5	293 37 7.4	. .	− 2 4.3	344 41 24.3	+ 1.1
6	16 12	17.0	18.7	2.2	1.2	24	526	508	. .	. .	. .	69.5	16 16 26.7	. .	+ 15.8	67 23 3.7	
7	15 40	18.1	20.1	3.3	3.5	22	. .	. .	. .	625	625	69.5	15 44 52.1	. .	+ 15.3	66 51 28.6	
8	55 20	21.2	24.4	7.9	8.1	22	. .	368	. .	252	. .	69.5	55 24 53.4	. .	+ 1 18.4	106 32 33.0	+ 0.9
9	40 29.2	12 13.6	15.1	28.8	27.5	27	316	170	065	890	644	69.5	40 32 50.9	. .	+ 47.4	91 39 59.5	
10	40 29.2	8 13.6	14.1	27.6	28.3												
11																	
12																	
13	348 52	10 26.7	28.1	12.0	9.4	26	. .	200	. .	140	. .	69.5	348 55 51.3	. .	− 10.9	40 2 1.6	
14																	
15																	
16	38 44	18.7	20.2	4.3	3.0	23	. .	230	. .	195	. .	70.8	38 48 44.9	. .	+ 44.8	89 55 50.9	+ 0.7
17	348 52	27.0	28.3	11.5	9.5	26	. .	530	. .	400	. .	70.8	348 55 48.0	. .	− 10.9	40 1 58.3	− 3.7
18	19 46	18.0	19.2	4.0	0.6	25	. .	345	. .	330	. .	70.8	19 50 13.6	. .	+ 20.2	70 56 55.0	+ 1.0
19	333 50	25.0	26.3	9.3	8.5	25	. .	765	. .	760	. .	70.8	333 54 0.3	. .	− 27.4	24 59 54.1	− 1.9
20	18 58	17.5	19.0	3.1	1.0	27	. .	660	. .	540	. .	70.8	19 1 39.3	. .	+ 19.3	70 8 19.8	+ 1.3
21	285 42	20.5	21.4	4.8	5.4	27	. .	520	. .	555	. .	70.8	285 45 37.2	. .	− 3 15.0	336 48 43.4	+ 1.9
22	346 22	23.8	24.9	8.0	5.8	23	. .	805	. .	775	. .	70.8	346 26 32.4	. .	− 13.5	37 32 40.1	+ 0.5
23	322 34	19.1	19.5	3.1	2.9	27	. .	400	. .	420	. .	70.8	322 37 42.2	. .	− 42.7	13 43 20.7	− 0.9
24	11 12	20.4	21.3	6.3	3.8	26	200	. .	. .	. .	. .	70.8	11 15 58.9	. .	+ 10.9	62 22 31.0	+ 2.2
25	54 18	20.2	21.6	6.5	4.0	24	. .	365	. .	350	. .	70.8	54 22 25.7	. .	+ 1 17.9	105 30 4.8	+ 2.2
26	324 8	17.9	18.9	2.0	1.3	22	. .	825	. .	780	. .	70.8	324 12 53.8	. .	− 40.3	15 18 34.7	− 1.6
27	357 56	18.5	19.5	3.5	2.0	29	. .	055	. .	978	. .	70.8	357 59 17.0	. .	− 2.0	49 5 36.2	+ 0.6
28	51 30	12.4	13.6	26.0	26.5	28	. .	850	650	510	. .	70.8	51 32 58.3	. .	+ 1 10.3	102 40 29.8	
29	1 0	26.5	27.3	11.4	11.0	27	. .	770	. .	750	. .	70.8	1 3 28.1	. .	+ 1.0	52 9 50.3	+ 1.3
30	11 40	23.8	25.7	9.0	7.0	25	. .	230	. .	190	. .	70.8	11 44 9.7	. .	+ 11.6	62 50 42.5	+ 1.6
31	31 58	17.3	18.6	1.9	1.4	22	. .	890	. .	800	. .	70.8	32 2 52.3	. .	+ 35.0	83 9 48.5	+ 2.0
32	33 56	18.5	20.0	4.0	2.6	23	. .	120	. .	080	. .	70.8	34 0 46.9	. .	+ 37.7	85 7 45.8	+ 2.8
33																	
34																	
35																	
36	15 26	17.3	20.5	3.1	1.3	24	. .	. .	. .	625	630	68.7	15 30 36.7	. .	+ 15.1	66 37 13.0	
37	56 3.5	11 9.1	10.4	24.8	25.7	34	. .	845	. .	443	. .	69.6	56 52 7.6	. .	+ 1 24.1	107 13 12.9	
38																	
39	29 14	15.6	15.6	0.1	0.6	25	146	078	. .	997	988	69.6	29 18 19.2	. .	+ 31.9	80 25 12.3	+ 0.7
40																	
41																	
42																	
43	22 34	10 6.7	9.1	22.0	23.6	24	. .	430	. .	328	. .	70.2	22 38 37.5	. .	+ 22.8	73 45 21.5	+ 1.3
44	54 18	19.6	20.4	4.4	3.5	24	. .	488	. .	432	. .	70.2	54 22 24.7	. .	+ 1 17.9	105 30 3.8	+ 1.2
45	324 8	10 12.5	12.8	26.8	27.7	23	. .	. .	. .	065	115	70.2	324 12 52.6	. .	− 40.3	15 18 13.5	− 1.9
46	47 42	18.6	19.2	3.1	3.0	23	. .	342	. .	230	. .	70.2	47 46 43.7	. .	+ 1 2.4	98 54 7.3	+ 1.8
47	1 0	10 17.4	17.4	0.0	1.0	28	. .	615	. .	473	. .	70.2	1 3 25.6	. .	+ 1.0	52 9 47.8	− 0.3
48	11 40	17.1	18.0	1.0	0.7	25	. .	840	. .	746	. .	70.2	11 44 7.4	. .	+ 11.7	62 50 40.3	+ 0.3

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
4	30.026	73.0	80.2
6	. .	. .	88.0
8	. .	. .	87.2
36	29.818	73.5	80.7
38	29.913	70.0	61.0
39	. .	. .	61.0
41	29.912	69.5	
43	30.042	74.0	83.8
44	29.966	72.5	69.9

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	− 4.3	+ 8.8	. .	+ 4.5
6	− 2.4	− 15 47.5	. .	− 15 49.9
7	− 2.3	+ 15 47.5	. .	+ 15 45.2
9	−38 42.0	+ 16 19.8	. .	− 22 22.2
28	−47 12.5	+ 16 30.9	. .	− 30 41.6
36	− 2.3	+ 15 46.1	. .	+ 15 43.8
37	−50 1.6	+ 16 30.5	. .	− 33 31.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension..	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 14	1	α Serpentis . . .	F.	7.4	9.9	11.4	18.5	20.6	22.7	29.9	31.4	34.0	38 20.64	+ 0.39	−27.53	−27.55	15 37 53.48	0.00
	2	ε Serpentis . . .	F.	36.5	39.2	44.8	46.9	48.9	51.0	53.0	58.6	1.2	44 48.90	+ 0.41	−27.50	−27.55	15 44 21.76	− 0.05
	3	ζ Ursæ Minoris . .	F.	20.3	32.8	40.1	10.2	20.1	30.6	0.0	7.5	20.5	49 20.23	− 2.27	. .	−27.56	15 48 50.40	+ 0.06
	4	ε Coronæ Borealis .	F.	27.6	30.6	32.3	39.0	41.3	43.6	50.5	52.2	55.0	52 41.34	+ 0.42	. .	−27.56	15 52 14.20	+ 0.14
	5	Saturn I, S. . .	F.	10.1	12.9	14.5	. .	. .	. .	32.3	34.0	36.4	40 23.70	+ 0.68	. .	−27.59	17 39 56.79	. .
	6	Saturn II, N. . .	F.	. .	. .	20.4	22.6	24.7	27.0	29.2	. .	. .	40 24.79	+ 0.68	. .	−27.59	17 39 57.88	. .
	7	γ^2 Sagittarii . . .	F.	42.0	45.0	46.8	54.0	56.3	58.6	5.8	7.5	10.4	57 56.27	+ 0.77	−27.52	−27.60	17 57 29.44	− 0.07
	8	22 Camelopard., S. P.	F.	28.7	21.3	17.0	59.4	53.8	48.1	30.5	26.1	18.6	4 53.72	+ 2.02	. .	−27.60	6 4 28.14	+ 0.32
	9	δ Ursæ Minoris . .	F.	. .	. .	4.0	38.0	13.5	47.5	22.0	. .	. .	15 13.20	− 9.16	. .	−27.60	18 14 36.44	. .
	10	ζ Aquilæ	F.	42.4	45.1	46.7	53.0	55.1	57.2	3.5	5.0	7.8	59 55.09	+ 0.32	−27.63	−27.62	18 59 27.79	+ 0.09
	11	Moon II, N. . .	F.	47.5	50.2	52.0	58.8	1.1	3.4	10.2	11.9	14.9	14 1.11	+ 0.67	. .	−27.62	19 13 34.16	−72.47
	12	δ Aquilæ	F.	13.3	17.4	21.4	23.5	25.6	27.5	29.6	33.6	38.0	19 25.54	+ 0.43	−27.74	−27.62	19 18 58.35	+ 0.17
	13	Polaris	S.	. .	. .	11.0	. .	0.0	21.5	48.0	. .	. .	11 59.60	−22.25	. .	−27.65	1 11 9.70	
	14	α Arietis	S.	4.8	7.7	9.1	15.9	18.0	20.1	27.0	28.6	31.4	0 18.07	+ 0.24	−27.68	−27.67	1 59 50.74	+ 0.12
	15	η Tauri	S.	59.0	3.5	7.9	10.1	12.3	14.6	16.9	21.3	25.8	40 12.37	+ 0.23	−27.78	−27.69	3 39 44.91	+ 0.10
	16	α Canis Minoris. .	S.	44.1	46.5	47.9	54.1	56.1	58.2	4.2	5.9	8.3	32 56.14	+ 0.42	−27.70	−27.76	7 32 28.80	− 0.20
15	17	β Geminorum . .	S.	34.3	37.1	38.8	45.9	48.1	50.4	57.3	58.9	1.9	37 48.08	+ 0.17	−27.70	−27.76	7 37 20.49	− 0.07
16	18	Venus II, N. . .	F.	48.3	51.0	52.6	58.9	1.0	3.1	9.4	11.0	13.5	52 0.98	+ 0.19	. .	−28.67	2 51 32.50	− 0.57
	19	α Persei	F.	12.5	16.4	18.8	28.0	31.2	34.3	43.8	46.0	50.0	15 31.22	− 0.19	. .	−28.68	3 15 2.35	+ 0.13
	20	δ Persei	F.	. .	. .	2.7	5.5	8.8	11.6	14.8	. .	. .	34 8.70	− 0.18	. .	−28.68	3.34 39.84	+ 0.23
	21	η Tauri	F.	0.1	3.0	4.6	11.1	13.4	15.6	22.3	24.0	26.8	40 13.43	+ 0.11	−28.67	−28.68	3 39 44.86	0.00
	22	α Tauri	F.	42.7	45.4	47.0	53.2	55.4	57.6	3.9	5.4	5.1	28 55.41	+ 0.17	−28.66	−28.67	4 28 26.91	− 0.03
	23	β Orionis. . . .	F.	32.1	35.1	36.6	42.6	44.7	46.7	53.0	54.5	57.7	8 44.72	− 0.36	−28.62	−28.70	5 8 16.38	− 0.11
17	24	Sun I	F.	43.5	45.4	49.7	51.9	54.2	56.2	58.6	3.2	4.7	42 54.16	+ 0.11	. .	−28.72	5 42 25.55	. .
	25	Sun II	F.	58.7	1.5	3.2	9.7	12.0	14.2	20.8	22.6	25.4	45 12.01	+ 0.11	. .	−28.72	5 44 43.40	. .
	26	α Canis Majoris. .	F.	42.0	43.8	48.0	50.1	52.2	54.4	56.4	0.9	2.3	39 52.22	+ 0.42	−28.71	−28.73	6 39 23.91	− 0.10
	27	α Canis Minoris. .	F.	45.1	47.5	49.3	55.3	57.3	59.3	5.5	6.9	9.5	32 57.30	+ 0.26	−28.70	−28.74	7 32 28.82	− 0.19
	28	β Geminorum . .	F.	35.5	38.0	39.9	46.9	49.3	51.5	58.6	0.2	3.2	37 49.23	+ 0.07	−28.77	−28.74	7 37 20.56	0.00
	29	α Ophiuchi . . .	F.	12.0	14.6	16.2	22.4	24.5	26.6	32.8	34.3	37.0	29 24.49	+ 0.20	−28.89	−28.89	17 28 55.80	+ 0.03
	30	Saturn, S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	31	Saturn, N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	32	μ^1 Sagittarii . . .	F.	16.6	19.2	20.9	27.4	29.6	31.7	38.4	40.0	42.8	6 29.62	+ 0.46	−28.79	−28.90	18 6 1.18	− 0.10
	33	δ Ursæ Minoris . .	F.	. .	. .	4.5	39.0	13.5	47.5	22.0	. .	. .	15 13.50	− 7.42	. .	−28.90	18 4 37.18	+ 0.41
	34	1 Aquilæ	F.	26.0	28.5	30.0	36.2	38.3	40.3	46.5	48.1	50.7	28 38.29	+ 0.36	−28.88	−28.90	18 28 9.75	+ 0.05
	35	α Lyræ	F.	47.6	50.8	52.8	0.6	3.2	5.9	13.6	15.6	19.0	33 3.23	− 0.05	−28.92	−28.91	18 32 34.27	+ 0.03
	36	51 Cephei, S. P. . .	F.	. .	. .	3.0	21.5	38.0	56.0	13.5	. .	. .	38 38.65	+ 9.88	. .	−28.91	6 38 19.62	+ 0.86
	37	σ Sagittarii . . .	F.	28.8	31.5	33.3	40.2	42.5	44.7	51.6	53.1	56.2	47 42.43	+ 0.50	−28.75	−28.91	18 47 14.02	− 0.15
	38	ζ Aquilæ	F.	44.0	46.5	48.2	54.4	56.5	58.6	5.0	6.5	9.2	59 56.54	+ 0.20	−28.91	−28.91	18 59 27.83	+ 0.08
	39	d Sagittarii . . .	F.	19.0	21.7	23.4	29.7	31.9	34.0	40.4	42.1	44.7	10 31.38	+ 0.44	−28.86	−28.91	19 10 3.41	− 0.03
	40	67 Piazzi, S. P. . .	F.	. .	. .	56.0	49.6	44.2	38.9	33.3	. .	. .	17 44.43	+ 1.55	. .	−28.91	7 17 17.07	+ 0.04
	41	γ Aquilæ	F.	22.6	25.3	26.8	32.9	35.0	37.1	43.4	44.9	47.5	40 35.06	+ 0.22	−28.89	−28.92	19 40 6.36	0.00
	42	α Aquilæ	F.	44.3	47.0	48.5	54.6	56.7	58.7	5.0	6.6	9.0	44 56.71	+ 0.24	−28.89	−28.92	19 44 28.03	+ 0.01
	43	β Aquilæ	F.	13.7	16.3	17.8	23.8	25.9	28.0	34.1	35.6	38.1	49 25.92	+ 0.25	−28.93	−28.93	19 48 57.24	+ 0.03
	44	λ Ursæ Minoris . .	F.	. .	. .	32.0	18.0	12.0	53.0	43.0	. .	. .	56 7.24	−23.84	. .	−28.93	19 55 14.47	− 2.17
	45	α^2 Capricorni. . .	F.	8.0	10.5	12.0	18.4	20.4	22.6	29.0	30.5	33.0	11 20.49	+ 0.38	−28.90	−28.93	20 10 51.94	+ 0.01
	46	π Capricorni. . .	F.	19.7	22.4	24.0	20.5	22.5	24.8	31.2	32.8	35.4	20 22.59	+ 0.44	−28.79	−28.93	20 19 54.10	− 0.11

11. Bisections at wires II–VI.
43. Telescope micrometer reading has been diminished by one revolution.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan's Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	31 58	10 13.7	15.1	27.9	28.2	23	. .	125	. .	075	. .	70.2	32 2 51.4	. .	+ 35.1	83 9 47.7	+ 1.7
2	33 56	10 22.4	23.0	6.0	6.0	23	. .	160	. .	058	. .	70.2	34 0 43.1	. .	+ 37.9	85 7 42.2	— 0.3
3	320 38	16.1	17.0	0.6	0.5	23	. .	828	. .	808	. .	70.2	320 42 38.3	. .	— 45.9	11 48 13.6	— 0.5
4	11 34	18.2	19.5	2.5	2.2	26	. .	110	. .	120	. .	70.2	11 38 1.0	. .	+ 11.6	62 44 33.8	+ 1.5
5	60 54	14.4	16.0	29.3	29.9	25	872	. .	. .	. .	786	70.2	60 58 8.1	. .	+ 1 40.8	112 6 10.1	
6	60 54	14.4	16.0	29.3	29.9	27	. .	240	. .	088	. .	70.2	60 57 47.9	. .	+ 1 40.8	112 5 49.9	
7	69 12	10 12.8	13.7	25.9	28.3	21	. .	575	. .	493	. .	70.2	69 16 30.3	. .	+ 2 27.2	120 25 18.7	+ 0.9
8	288 14	13.5	14.8	27.3	28.9	26	. .	252	. .	164	. .	70.2	288 18 3.1	. .	— 2 47.9	339 21 36.4	0.0
9	312 14	10 14.0	15.4	28.6	29.8	25	212	200	180	200	210	70.2	312 18 18.6	. .	— 1 1.6	3 23 38.2	+ 0.1
10	25 8	14.3	13.6	26.1	27.3	23	. .	194	. .	142	. .	70.2	25 12 51.3	. .	+ 26.4	76 19 38.9	+ 1.3
11	61 34	10.5	11.8	26.1	27.0	26	748	720	740	616	630	70.2	61 37 58.7	. .	+ 1 43.6	112 46 3.5	
12	35 58	16.5	17.0	1.1	1.5	28	. .	395	. .	285	. .	70.2	36 1 28.6	. .	+ 40.8	87 9 30.6	+ 1.3
13																	
14																	
15																	
16																	
17																	
18	24 50	10 15.2	17.0	0.9	1.2	26	. .	162	. .	170	. .	67.8	24 53 59.8	. .	+ 25.8	76 0 46.8	
19	349 26	8.2	9.7	24.9	25.4	25	858	798	. .	764	720	67.8	349 30 12.8	. .	— 10.3	40 36 23.7	— 2.1
20																	
21	15 8	9.6	11.5	26.3	26.8	28	820	810	. .	790	778	67.8	15 11 24.7	. .	+ 15.0	66 18 0.9	— 1.8
22	22 34	8.1	10.9	24.8	25.0	24	. .	. .	. .	180	140	67.8	22 38 35.8	. .	+ 23.0	73 45 20.0	0.0
23	47 10	10 6.4	5.7	28.5	27.7	26	758	728	. .	646	606	67.8	47 13 58.2	. .	+ 59.3	98 21 18.7	+ 1.8
24																	
25																	
26	55 20	10 4.0	6.3	20.2	23.0	23	. .	. .	. .	402	380	67.8	55 24 51.1	. .	+ 1 19.0	106 32 31.5	+ 1.0
27	33 16	10 10.2	13.2	27.4	27.2	27	250	386	. .	162	142	67.8	33 19 47.5	. .	+ 36.0	84 26 44.7	+ 1.7
28	10 30	13.0	15.8	0.2	29.7	29	. .	280	. .	190	. .	67.8	10 33 14.3	. .	+ 10.2	61 39 45.7	+ 1.9
29	26 10	10 15.7	15.8	29.5	0.2	27	. .	. .	. .	328	300	68.6	26 13 42.7	. .	+ 27.8	77 20 31.7	— 0.1
30	60 54	10 20.4	20.8	5.9	5.5	26	. .	. .	. .	384	. .	68.6	60 57 51.5	. .	+ 1 41.2	112 5 53.9	
31	60 54	10 20.4	20.8	5.9	5.5	27	. .	. .	. .	. .	640	68.6	60 57 31.7	. .	+ 1 41.2	112 5 34.1	
32	59 52	10 25.3	25.3	10.0	11.1	20	230	236	. .	196	190	68.6	59 57 21.9	. .	+ 1 37.2	111 5 20.3	+ 0.5
33	312 14	15.7	15.9	29.9	0.7	25	090	095	118	110	122	68.6	312 18 17.3	. .	— 1 1.9	3 23 36.6	+ 0.4
34	47 8	12.5	13.9	28.1	29.2	24	. .	454	. .	356	. .	68.6	47 12 30.0	. .	+ 1 0.9	98 19 52.1	— 0.1
35	0 10	10 5.6	6.3	20.0	21.6	27	. .	790	. .	724	. .	68.6	0 13 46.6	. .	+ 0.2	51 20 8.0	+ 0.4
36	306 6	10 13.3	14.4	27.6	29.8	29	136	182	130	134	170	68.6	306 9 17.1	. .	— 1 17.1	357 14 21.2	— 1.2
37	65 14	9.7	11.3	26.2	27.3	23	. .	302	. .	194	. .	68.6	65 18 49.9	. .	+ 2 2.3	116 27 13.4	+ 1.3
38	25 8	10 14.2	14.5	28.1	28.2	23	. .	146	. .	068	. .	68.6	25 12 49.7	. .	+ 26.6	76 19 37.5	+ 0.6
39	57 58	14.1	14.4	28.3	29.6	22	. .	642	. .	574	. .	68.6	58 2 56.8	. .	+ 1 30.3	109 10 48.3	+ 3.5
40	287 36	10 12.0	12.2	26.5	28.5	25	. .	594	602	610	. .	68.6	287 40 12.9	. .	— 2 55.4	338 43 38.7	+ 0.5
41	28 30	10 15.3	15.4	29.7	0.0	21	. .	602	. .	566	. .	68.6	28 35 11.6	. .	+ 30.8	79 42 3.6	+ 0.5
42	30 18	14.7	14.9	28.6	29.5	28	. .	704	. .	604	. .	68.6	30 21 24.2	. .	+ 33.1	81 28 18.5	— 1.3
43	33 44	10 26.0	24.5	11.9	9.9	26	. .	840	. .	790	. .	68.6	32 47 56.4	. .	+ 36.4	83 54 54.0	— 0.5
44	309 56	10 19.2	19.6	4.2	4.2	26	862	746	798	775	792	68.6	309 59 47.9	. .	— 1 7.3	1 5 1.8	— 0.4
45	51 44	16.2	17.6	1.3	2.3	21	. .	902	. .	844	. .	68.6	51 49 5.3	. .	+ 1 11.7	102 56 38.2	+ 1.0
46	57 26	9.0	10.1	24.0	25.7	25	. .	940	. .	890	. .	68.6	57 30 10.6	. .	+ 1 28.6	108 38 0.4	+ 0.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
4	. .	. .	67.4
6	29.970	71.5	67.8
9	. .	. .	67.9
12	29.976	72.0	68.0
13	. .	72.0	
14	29.970	74.0	71.7
15	. .	. .	81.3
18	30.006	70.2	74.2
21	. .	. .	77.0
22	. .	. .	79.0
23	30.018	74.2	81.0
26	. .	. .	83.2
28	30.012	76.2	81.8
29	. .	. .	67.0
30	30.040	72.0	67.0
34	. .	. .	66.2
37	. .	. .	65.9
41	30.030	71.2	65.3
46	. .	. .	65.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	— 0.8	— 10.1	. .	— 10.9
6	— 0.8	+ 10.1	. .	+ 9.3
11	—51 39.8	+ 16 4.4	. .	— 35 35.4
18	— 3.6	+ 8.3	. .	+ 4.7
30	— 0.9	— 9.9	. .	— 10.8
31	— 0.9	+ 9.9	. .	+ 9.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 17	1	α Aquarii	F.	23.9	26.4	28.0	34.0	36.0	38.0	44.2	45.8	48.2	59 36.06	+ 0.30	−28.93	−28.96	21 59 7.40	0.00
	2	Moon II, N.	F.	54.7	57.3	59.0	5.6	7.7	9.8	16.5	18.0	20.7	8 7.70	+ 0.42	. .	−28.96	22 7 39.16	−65.97
	3	π Aquarii	F.	55.6	58.1	59.7	5.8	7.8	9.9	16.0	17.5	20.0	19 7.82	+ 0.29	−28.90	−28.96	22 18 39.15	− 0.04
	4	η Aquarii	F.	57.9	0.4	1.9	8.0	10.0	12.0	18.4	19.7	22.3	29 10.07	+ 0.30	−28.94	−28.96	22 29 41.41	+ 0.01
	5	Polaris	S.	. .	. .	. .	. .	59.6	23.6	47.3	34.1	. .	11 59.30	−19.13	. .	−28.85	1 11 11.32	+ 0.93
	6	Venus, N.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
18	7	Venus, S.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	8	Sun I, S.	S.	50.5	53.1	55.1	1.7	3.9	6.2	12.9	14.6	17.3	47 3.91	+ 0.12	. .	−28.93	5 46 35.10	. .
	9	Sun II, N.	S.	. .	. .	. .	. .	23.9	26.0	30.6	32.2	35.1	49 21.69	+ 0.12	. .	−28.93	5 48 52.88	. .
	10	α Canis Minoris	S.	. .	47.9	49.3	53.7	57.9	1.7	5.9	7.2	. .	32 57.67	+ 0.32	−29.13	−29.96	7 32 29.03	+ 0.03
	11	Polaris, S. P.	S.	. .	. .	5.0	41.5	19.0	. .	. .	. .	. .	11 17.30	+19.82	. .	−29.05	1 11 8.07	− 2.69
	12	δ Ophiuchi	S.	50.4	52.9	54.2	0.3	2.4	4.5	10.6	12.2	14.9	8 2.49	+ 0.35	−29.09	−29.10	16 7 33.74	+ 0.01
	13	τ Herculis	S.	3.6	7.3	9.6	18.6	21.3	24.5	33.1	35.4	39.3	16 21.41	− 0.17	. .	−29.11	16 15 52.13	+ 0.25
	14	α Scorpii	S.	43.3	46.0	47.9	54.6	56.9	59.0	5.9	7.8	10.3	21 56.86	+ 0.55	−29.05	−29.11	16 21 28.30	− 0.07
	15	ζ Ophiuchi	S.	18.2	20.7	22.4	28.4	30.4	32.6	38.9	40.7	43.0	30 30.59	+ 0.40	−29.08	−29.11	16 30 1.88	− 0.03
	16	η Herculis	S.	41.9	45.0	47.0	54.9	57.5	0.0	8.0	10.0	13.4	38 57.30	− 0.06	−28.96	−29.11	16 38 28.13	− 0.14
	17	κ Ophiuchi	S.	49.2	51.7	53.4	59.5	1.5	3.7	9.8	11.3	14.0	52 1.57	+ 0.24	−29.16	−29.12	16 51 32.69	+ 0.08
	18	α^1 Herculis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	19	α Ophiuchi	S.	12.3	14.8	16.5	22.7	24.7	26.8	33.0	34.7	37.3	29 24.76	+ 0.22	−29.18	−29.12	17 28 55.86	+ 0.09
	20	Saturn I	S.	55.6	58.4	0.3	. .	. .	. .	18.0	19.3	22.0	39 8.92	+ 0.50	. .	−29.14	17 38 40.28	+ 0.65
	21	δ Ursæ Minoris	S.	. .	. .	4.0	38.0	12.5	. .	22.5	. .	. .	15 13.03	− 7.79	. .	−29.14	18 14 36.10	− 0.65
	22	51 Cephei, S. P.	S.	. .	. .	3.5	20.5	48.5	56.5	14.5	. .	. .	38 38.48	+10.22	. .	−29.15	6 38 29.55	+ 0.79
	23	Moon II	S.	38.2	41.0	42.5	49.0	51.0	53.0	59.5	1.2	3.8	58 51.02	+ 0.42	. .	−29.22	22 58 22.22	−63.90
19	24	Moon II, N.	E.	36.0	38.5	40.1	46.4	48.5	50.5	56.8	58.4	0.9	46 48.44	+ 0.52	. .	−29.84	23 46 19.12	−62.35
	25	ω Piscium	E.	56.0	58.4	0.0	6.1	8.2	10.2	16.4	17.9	20.4	53 8.18	+ 0.38	−29.86	−29.84	23 52 38.72	+ 0.03
	26	α Andromedæ	E.	56.5	59.5	1.5	8.2	10.6	12.8	19.8	21.5	24.5	2 10.54	+ 0.13	−29.82	−29.84	0 1 40.83	− 0.00
	27	Polaris	E.	. .	. .	15.0	39.0	5.5	30.0	52.0	. .	. .	12 4.82	−23.62	. .	. .	. . . .	. .
	28	Venus II, N.	F.	13.0	15.8	17.4	23.7	25.8	27.9	34.3	35.9	38.5	5 25.81	+ 0.29	. .	−30.00	3 4 56.10	− 0.56
	29	α Tauri	F.	. .	. .	54.5	56.7	58.8	0.8	5.0	6.7	9.5	28 56.64	+ 0.28	−27.94	−30.01	4 28 26.91	− 0.09
	30	Mercury II	F.	0.2	2.6	4.3	10.5	12.9	15.0	21.5	23.0	25.7	37 12.86	+ 0.26	. .	−30.02	4 36 43.10	− 0.15
20	31	Sun I, S.	F.	10.5	13.4	15.0	21.6	24.0	26.0	32.9	34.3	37.3	55 23.89	+ 0.19	. .	−30.03	5 54 54.05	. .
	32	Sun II, N.	F.	28.4	31.2	33.0	39.7	41.9	44.0	50.8	52.4	55.3	57 41.86	+ 0.19	. .	−30.03	5 57 12.02	. .
	33	α Canis Majoris	F.	40.6	43.3	45.0	51.1	53.3	55.5	1.9	3.5	6.1	39 53.37	+ 0.62	−30.04	−30.04	6 39 23.95	− 0.08
	34	α Canis Minoris	F.	46.2	48.9	50.4	56.5	58.6	0.5	6.8	8.3	10.8	32 58.56	+ 0.39	−30.09	−30.05	7 32 28.90	− 0.10
	35	β Geminorum	F.	36.6	39.4	41.2	48.1	50.5	52.8	59.7	1.4	4.3	37 50.44	+ 0.13	−30.04	−30.05	7 37 20.52	− 0.04
	36	τ Herculis	F.	8.3	10.6	16.3	19.5	22.5	25.4	28.3	34.3	36.5	16 22.41	− 0.18	. .	−30.15	16 15 52.08	+ 0.22
	37	α Scorpii	F.	44.0	46.9	48.6	55.2	57.6	59.8	6.7	8.5	11.4	21 57.63	+ 0.74	−30.01	−30.15	16 21 28.22	− 0.15
	38	ζ Ophiuchi	F.	19.9	21.6	23.2	29.4	31.5	33.5	40.0	41.4	43.9	30 31.60	+ 0.56	−30.25	−30.15	16 30 2.01	+ 0.10
	39	η Herculis	F.	42.5	45.9	48.0	55.8	58.4	1.3	9.1	11.0	14.3	38 58.48	− 0.03	−30.17	−30.16	16 38 28.29	+ 0.02
	40	κ Ophiuchi	F.	50.0	52.4	54.2	0.4	2.5	4.5	10.6	12.4	14.7	52 2.41	+ 0.35	−30.11	−30.16	16 51 32.60	− 0.01
	41	*d* Herculis	F.	5.6	8.8	10.8	18.0	20.5	23.0	30.3	32.2	35.1	57 20.46	+ 0.05	. .	−30.16	16 56 50.35	+ 0.22
	42	α^1 Herculis	F.	2.0	4.7	6.3	12.6	14.8	17.0	23.2	24.8	27.5	9 14.77	+ 0.30	−30.08	−30.16	17 8 44.91	− 0.06

2. Bisections at wires II–VI.
10. Very faint; cloudy.
24. Record ambiguous.
29. Transits observed over wires C_2–D_3.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	39 46	12.5	13.4	27.9	28.9	27	. .	262	. .	200	. .	68.6	39 49 47.1	. .	+ 47.2	90 56 55.5	— 0.9
2	54 28	10 13.2	12.7	27.6	28.2	21	992	210	370	490	568	68.6	54 33 2.3	. .	+ 1 19.4	105 40 42.9	
3	38 6	12.7	12.2	26.0	27.6	27	. .	634	. .	570	. .	68.6	38 9 42.5	. .	+ 44.5	89 16 48.2	— 1.0
4	39 36	12.5	12.3	26.7	27.9	26	500	470	. .	420	352	68.6	39 40 0.1	. .	+ 47.0	89 47 8.3	+ 1.3
5																	
6	24 30	16.3	17.6	1.5	1.5	26	300	287	. .	. .	. .	68.8	24 33 58.9	. .	+ 25.2	75 40 45.3	
7	24 30	16.3	17.6	1.5	1.5	25	. .	. .	. .	245	237	68.8	24 34 13.6	. .	+ 25.2	75 41 0.0	—10.6
8	15 38	10.4	9.3	24.2	24.7	20	175	867	. .	. .	. .	68.8	15 43 42.2	. .	+ 15.3	66 50 18.7	
9	15 8	15.2	14.7	28.8	28.7	25	. .	. .	. .	. .	540	68.8	15 12 11.0	. .	+ 14.8	66 18 47.0	
10	33 16	18.3	19.8	3.6	3.8	26	970	854	. .	802	696	68.8	33 19 47.8	. .	+ 35.6	84 26 44.6	+ 1.7
11	. .	. .	. .	. .	. .	.	. .	. .	942	945	970						
12																	
13																	
14	64 56	17.8	19.0	3.4	3.2	25	. .	510	. .	462	. .	68.5	65 0 8.3	. .	+ 1 59.3	116 8 28.8	+ 0.5
15																	
16	359 40	22.7	24.0	6.8	4.8	28	712	709	. .	616	612	68.5	359 43 16.6	. .	— 0.3	50 49 37.5	+ 0.2
17	. .	23.4	23.0	6.9	5.7	24	. .	596	. .	670	. .	68.5	29 18 17.7	. .	+ 31.4	80 25 10.3	— 0.2
18	. .	22.4	22.5	5.9	4.2	23	. .	040	. .	766	. .	68.5	24 20 45.2	. .	+ 25.3	75 27 31.7	+ 2.1
19																	
20																	
21																	
22																	
23																	
24	45 58	17.6	20.8	3.8	6.0	21	. .	. .	990	. .	432	70.5	46 2 59.3	. .	+ 57.9	97 10 18.4	
25	32 40	20.6	21.9	3.8	6.0	24	. .	320	. .	300	. .	70.5	32 44 26.3	. .	+ 35.9	83 51 23.4	+ 1.6
26	10 26	18.4	20.0	5.2	2.8	21	. .	290	. .	188	. .	70.5	10 31 14.8	. .	+ 10.4	61 37 46.4	+ 1.5
27	310 14	18.8	19.8	3.8	3.8	25	915	910	860	895	915	70.5	310 18 3.7	. .	— 1 5.3	1 23 19.6	+ 0.4
28	23 50	12.8	14.0	27.5	27.8	24	008	. .	930	. .	. .	69.1	23 54 37.8	. .	+ 24.3	75 1 23.3	
29	22 34	16.8	18.4	3.0	2.0	23	. .	722	. .	690	. .	69.1	22 38 37.3	. .	+ 22.6	73 45 21.1	+ 1.4
30																	
31	15 38	10 18.2	19.2	2.2	2.8	25	850	916	. .	. .	. .	69.1	15 42 4.7	. .	+ 15.2	66 48 41.1	
32	15 6	10 3.8	3.2	20.1	24.6	24	. .	. .	. .	536	560	69.1	15 10 35.6	. .	+ 14.6	66 17 11.4	
33	55 20	17.5	20.5	4.4	4.2	22	776	788	. .	672	624	69.1	55 24 50.6	. .	+ 1 18.0	106 32 29.8	+ 0.1
34	33 16	10 15.5	18.0	1.0	0.9	27	128	098	. .	040	032	69.1	33 19 46.9	. .	+ 35.4	84 26 43.5	+ 0.8
35																	
36	352 12	10 17.2	16.0	0.5	29.8	25	. .	500	. .	458	. .	70.1	352 16 13.0	. .	— 7.5	83 22 26.7	+ 2.1
37	64 56	16.7	18.0	2.0	3.0	25	. .	. .	. .	514	412	70.1	65 0 10.0	. .	+ 1 58.2	116 8 29.4	+ 1.1
38	49 6	10 19.2	19.6	3.8	3.4	23	. .	580	. .	460	. .	70.1	49 10 39.4	. .	+ 1 4.1	100 18 4.7	+ 1.7
39	359 40	10 14.9	14.6	27.7	27.4	29	. .	258	. .	166	. .	70.1	359 43 18.0	. .	— 0.3	50 49 38.9	+ 2.2
40	29 14	10 16.2	16.7	1.0	0.0	25	. .	050	. .	988	. .	70.1	29 18 19.9	. .	+ 31.1	70 25 12.2	+ 2.0
41	5 4	10 17.0	17.9	1.5	0.1	26	440	350	. .	280	264	70.1	5 7 59.2	. .	+ 5.0	56 14 25.4	+ 1.4
42	24 16	10 20.6	20.7	4.2	3.1	23	. .	. .	. .	150	138	70.1	24 20 43.6	. .	+ 25.1	75 27 29.9	+ 0.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	64.4
4	30.050	71.0	64.2
7	30.092	73.0	80.0
9	30.080	76.8	87.9
10	30.072	78.0	88.5
11	30.050	78.0	78.3
12	. .	. .	72.0
13	. .	. .	71.8
15	. .	. .	71.3
16	. .	. .	71.0
17	30.059	74.0	71.1
18	30.060	74.0	71.1
19	. .	. .	70.6
25	. .	. .	70.0
26	29.968	. .	73.5
27	. .	. .	74.5
28	29.986	75.6	81.8
29	. .	. .	86.0
32	29.966	79.0	88.0
33	. .	. .	89.5
34	. .	. .	90.0
36	29.904	76.0	73.6
42	. .	72.8	

For a summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	—45 40.3	+ 15 21.5	. .	— 30 18.8
6	— 3.5	+ 7.6	. .	+ 4.1
7	— 3.5	— 7.6	+ 0.5	— 10.6
8	— 2.4	— 15 45.8	. .	— 15 48.2
9	— 2.3	+ 15 45.8	. .	+ 15 43.5
24	—39 21.9	+ 14 59.5	. .	— 24 22.4
28	— 3.4	+ 8.1	. .	+ 4.7
31	— 2.3	— 15 44.8	. .	— 15 47.1
32	— 2.2	+ 15 44.8	. .	+ 15 42.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 20	1	b Ophiuchi . . .	F.	44.0	46.8	48.5	55.0	57.4	59.8	6.4	8.0	10.9	18 57.42	+ 0.71	−30.13	−30.16	17 18 27.97	0.00
	2	966 Groom., S. P. .	F.	. .	. .	0.6	52.6	44.4	37.0	29.0	. .	. .	23 44.77	+ 2.60	. .	−30.16	5 22 17.21	− 0.60
	3	α Ophiuchi . . .	F.	13.0	15.7	17.4	23.6	25.7	27.7	34.0	35.6	38.1	29 25.64	+ 0.32	−30.14	−30.16	17 28 55.80	+ 0.01
	4	Saturn I, S. . .	F.	17.7	20.3	22.1	. .	. .	. .	39.9	41.6	44.0	38 30.92	+ 0.69	. .	−30.17	17 38 1.44	. .
	5	Saturn II, N. . .	F.	. .	. .	29.5	31.6	33.8	35.8	38.1	. .	. .	38 33.77	+ 0.69	. .	−30.17	17 38 4.29	. .
	6	μ¹ Sagittarii . . .	F.	17.5	20.3	22.2	28.6	30.8	33.0	39.5	41.3	44.0	6 30.81	+ 0.68	−30.16	−30.17	18 6 1.32	0.00
	7	δ Ursæ Minoris . .	F.	. .	. .	7.0	41.0	17.5	51.0	23.5	. .	. .	15 16.20	− 9.47	. .	−30.17	18 14 36.56	− 0.17
	8	α Andromedæ . .	F.	57.1	0.0	2.0	9.0	11.2	13.4	20.4	22.2	25.0	2 11.19	+ 0.13	−30.43	−30.24	0 1 41.08	+ 0.21
	9	γ Pegasi	F.	50.4	53.2	54.8	1.0	3.1	5.2	11.6	13.0	15.8	7 3.12	+ 0.30	−30.33	−30.24	0 6 33.18	+ 0.10
	10	Moon II, N. . .	F.	44.0	46.5	48.2	54.3	56.4	58.5	4.8	6.3	8.9	32 56.43	+ 0.48	. .	−30.25	0 32 26.66	−61.42
	11	ε Piscium . . .	F.	29.7	32.2	33.8	40.0	42.0	44.0	50.3	51.6	54.2	56 41.99	+ 0.37	−30.32	−30.25	0 56 12.11	+ 0.09
	12	Polaris	F.	. .	. .	17.0	42.0	6.0	28.0	52.0	. .	. .	12 5.52	−23.62	. .	−30.26	1 11 11.64	− 1.07
	13	θ¹ Ceti	F.	49.0	51.7	53.1	59.2	1.2	3.3	9.5	11.2	13.7	18 1.32	+ 0.54	−30.36	−30.26	1 17 31.60	+ 0.12
	14	α Ceti	S.	48.8	50.2	54.5	56.5	58.5	0.4	2.7	6.7	8.7	55 58.50	+ 0.15	−29.97	−30.06	2 55 28.59	− 0.07
	15	Venus II, S. . .	S.	46.5	47.8	52.2	54.4	56.5	58.6	0.7	5.0	6.7	9 56.49	+ 0.06	. .	−30.07	3 9 26.48	− 0.56
	16	Venus, N. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	17	α Tauri	S.	44.2	47.0	48.5	54.9	57.0	59.0	5.5	7.3	9.6	28 57.00	+ 0.05	−30.05	−30.09	4 28 26.96	− 0.06
	18	Mercury II . .	S.	22.6	27.0	31.2	33.2	35.5	37.7	39.7	44.1	48.7	38 35.47	+ 0.04	. .	−30.09	4 38 5.42	− 0.34
21	19	Sun I, N. . . .	S.	20.6	23.1	25.0	31.8	34.0	36.9	42.9	44.6	47.4	59 34.03	− 0.01	. .	−30.11	5 59 3.91	. .
	20	Sun II, S. . . .	S.	. .	. .	47.3	49.5	51.7	53.9	56.3	. .	. .	1 51.75	− 0.01	. .	−30.11	6 1 21.63	. .
	21	α Canis Minoris .	S.	46.6	49.2	50.7	56.7	. .	0.7	7.0	8.5	11.0	32 58.80	+ 0.14	−30.08	−30.14	7 32 28.80	− 0.20
	22	β Geminorum . .	S.	39.8	41.6	. .	50.7	53.1	55.3	0.0	1.7	. .	37 50.76	− 0.06	−30.17	−30.14	7 37 20.56	0.00
	23	θ Virginis . . .	S.	31.8	34.3	36.0	42.0	44.1	46.1	52.2	53.8	56.4	3 44.08	+ 0.22	−30.22	−30.23	13 3 14.07	− 0.05
	24	Polaris, S. P. . .	S.	. .	. .	7.5	45.0	21.0	57.0	37.0	. .	. .	11 20.98	+20.03	. .	−30.23	1 11 10.78	− 2.36
	25	κ Ophiuchi . . .	S.	50.5	53.0	54.9	1.0	2.9	4.9	11.2	12.8	15.2	52 2.93	+ 0.10	−30.37	−30.30	16 51 32.73	+ 0.11
	26	a¹ Herculis . . .	S.	2.7	5.3	7.0	13.1	15.3	17.3	23.7	25.4	28.0	9 15.31	+ 0.07	−30.38	−30.30	17 8 45.08	+ 0.10
	27	α Ophiuchi . . .	S.	13.4	16.1	17.8	24.6	26.0	28.2	34.2	36.0	38.7	29 26.04	+ 0.08	−30.30	−30.30	17 28 55.82	+ 0.03
	28	Saturn I, S. . .	S.	0.2	2.7	4.8	. .	. .	. .	22.1	23.7	26.4	38 13.31	+ 0.34	. .	−30.31	17 37 43.34	. .
	29	Saturn II, N. . .	S.	. .	. .	10.2	12.3	14.4	16.5	19.0	. .	. .	38 14.49	+ 0.34	. .	−30.31	17 37 44.52	. .
	30	δ Ursæ Minoris . .	S.	. .	. .	. .	5.0	40.0	16.0	48.5	23.0	. .	15 14.70	− 7.91	. .	−30.32	18 14 36.47	− 0.25
	31	1 Aquilæ	S.	27.4	30.1	31.6	37.9	40.0	42.1	47.9	49.8	52.3	28 39.90	+ 0.24	−30.31	−30.32	18 28 9.82	+ 0.06
	32	51 Cephei, S. P. .	S.	3.5	2.0	29.0	3.0	23.0	15.5	. .	. .	. .	38 39.88	+ 9.68	. .	−30.32	6 38 19.24	+ 0.55
	33	Venus II, S. . .	S.	16.0	18.7	20.3	26.6	28.9	30.8	37.2	39.0	41.5	14 28.78	+ 0.01	. .	−30.73	3 13 58.06	− 0.55
	34	Venus, N. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	35	η Tauri	S.	2.4	5.2	7.0	13.5	15.7	18.0	24.8	26.5	29.2	40 15.81	− 0.04	−30.75	−30.74	3 39 45.03	+ 0.05
	36	α Tauri	S.	45.1	47.7	49.3	55.5	57.7	59.7	6.4	7.9	10.6	28 57.77	+ 0.01	−30.76	−30.75	4 28 27.03	− 0.01
	37	Mercury II,(center)	S.	4.4	7.0	8.7	15.2	17.3	19.4	26.0	27.6	30.2	40 17.31	− 0.01	. .	−30.76	4 39 46.54	− 0.33
	38	β Orionis. . . .	S.	34.8	37.4	39.1	45.0	47.2	49.1	55.3	57.0	59.7	8 47.18	+ 0.16	−30.81	−30.77	5 8 16.57	+ 0.03
22	39	Sun I, S. . . .	E.	30.8	33.6	35.0	42.0	44.0	46.1	52.9	54.6	57.5	3 44.06	− 0.04	. .	−30.79	6 3 13.23	. .
	40	Sun II, N. . . .	E.	48.8	51.5	53.2	59.9	2.2	4.3	11.2	12.9	15.5	5 22.20	− 0.04	. .	−30.79	6 5 31.37	. .
	41	α Canis Minoris. .	E.	47.2	49.8	51.5	57.5	59.6	1.7	7.9	9.4	11.8	32 59.60	+ 0.08	−30.81	−30.82	7 32 28.86	− 0.15
	42	β Geminorum . .	E.	37.5	40.4	42.3	49.0	51.4	53.7	0.6	2.5	5.3	37 51.41	− 0.08	−30.79	−30.82	7 37 20.51	− 0.06
	43	θ Virginis . . .	E.	32.5	35.1	36.6	42.7	44.8	46.9	53.0	54.5	57.0	3 44.79	+ 0.13	−30.85	−30.94	13 3 13.98	− 0.13
	44	Polaris, S. P. . .	E.	. .	. .	17.5	53.5	29.5	6.0	41.0	. .	. .	11 28.98	+14.11	. .	−30.94	1 11 12.15	− 1.89
	45	α Virginis . . .	E.	40.0	42.5	44.2	50.3	52.4	54.5	0.7	2.3	4.8	18 52.41	+ 0.17	−30.80	−30.95	13 18 21.63	− 0.14
	46	ζ Virginis . . .	E.	26.2	27.7	31.8	33.8	35.9	38.0	40.0	4.0	5.6	28 35.89	+ 0.10	−30.82	−30.95	13 28 5.04	− 0.13
	47	η Ursæ Majoris . .	E.	38.0	42.0	44.4	53.9	57.0	0.2	9.6	12.0	16.0	42 57.01	− 0.31	. .	−30.95	13 42 25.75	− 0.21
	48	η Bootis	E.	48.5	53.0	57.2	59.4	1.5	3.7	5.8	10.1	14.4	49 1.51	− 0.02	−30.83	−30.96	13 48 30.53	− 0.18
	49	50 Cassiopeæ, S. P. .	E.	. .	. .	5.5	58.7	52.3	46.0	39.3	. .	. .	52 52.30	+ 1.13	. .	−30.96	1 52 22.47	+ 0.07

2. Bisections at sets B and D.
4, 5. Wire B used.
10. Bisections at wires C_1–C_5.
19, 20. Revolutions uncertain.
39. Telescope micrometer changed one revolution.
49. Bisections at C_1 and C_5.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	62 50	10 17.6	17.8	2.6	2.3	22	. .	190	. .	110	. .	70.1	62 55 1.7	. .	+ 1 48.0	114 3 10.9	+ 4.1
2	293 48	10 14.2	14.6	22.9	28.9	23	. .	562	. .	608	. .	70.1	293 52 44.6	. .	− 2 4.6	344 57 1.2	+ 4.4
3	26 10	12.0	12.4	25.8	25.8	27	. .	728	. .	632	. .	70.1	26 13 43.5	. .	+ 27.3	77 20 32.0	+ 0.8
4	60 56	12.3	13.3	27.7	28.1	25	. .	922	. .	. .	. .	70.1	61 2 43.5	. .	+ 1 39.8	112 10 44.5	
5	60 56	12.3	13.3	27.7	28.1	27	. .	. .	. .	150	. .	70.1	61 2 23.7	. .	+ 1 39.8	112 10 24.7	
6	59 52	10 20.5	21.2	6.2	5.0	20	. .	575	. .	462	. .	70.1	59 57 23.5	. .	+ 1 35.5	111 5 20.2	− 0.4
7	312 14	10 20.5	20.2	4.9	3.7	25	070	925	065	950	035	70.1	312 18 15.9	. .	− 1 0.8	3 23 36.3	0.0
8	10 26	4.1	7.8	21.9	21.5	22	. .	090	. .	032	. .	70.1	10 31 14.6	. .	+ 10.3	61 37 46.1	+ 1.4
9	24 20	10 3.8	6.0	19.5	20.2	20	782	752	. .	708	672	70.1	24 25 36.4	. .	+ 25.3	75 32 22.9	− 0.1
10	41 20	7.8	11.1	25.9	25.3	25	. .	230	282	390	. .	70.1	41 24 21.3	. .	+ 49.0	92 31 31.5	
11	31 38	10 9.5	12.7	26.3	26.9	27	795	771	. .	710	680	70.1	31 41 42.7	. .	+ 34.2	82 48 38.1	+ 0.7
12	310 14	10 10.0	12.1	26.0	27.2	.	412	310	378	356	394	70.1	310 18 3.8	. .	− 1 5.4	1 23 19.6	+ 0.3
13	47 40	10 3.2	6.9	19.7	19.0	27	. .	668	. .	624	. .	70.1	47 43 50.7	. .	+ 1 1.0	98 51 12.9	+ 0.7
14	35 14	12.5	15.4	28.7	29.2	25	162	165	. .	100	080	69.9	35 18 19.8	. .	+ 39.4	86 25 20.4	+ 0.1
15	23 32	15.6	18.2	2.1	1.0	27	756	. .	. .	640	. .	69.9	23 35 37.9	. .	+ 24.3	74 42 23.4	
16	23 32	15.6	18.2	2.1	1.0	28	. .	788	. .	762	. .	69.9	23 35 19.3	. .	+ 24.3	74 42 4.8	
17																	
18																	
19	15 6	17.2	20.5	2.8	1.5	.	. .	660	. .	. .	. .	69.9	15 10 24.0	. .	+ 14.9	66 17 0.1	
20	15 38	18.2	21.0	5.8	4.2	.	. .	. .	. .	260	320	69.9	15 41 55.3	. .	+ 15.5	66 48 32.0	
21																	
22																	
23	43 40	20.6	21.9	5.8	6.4	28	. .	053	. .	014	. .	68.2	43 43 26.4	. .	+ 53.3	94 50 40.9	− 1.3
24	307 28	16.1	18.0	1.7	2.1	28	037	021	. .	980	043	68.2	307 31 30.6	. .	− 1 12.6	358 36 39.2	− 0.5
25	29 14	16.9	16.8	1.3	1.3	25	. .	082	. .	935	955	68.2	29 18 17.6	. .	+ 31.9	80 25 10.7	+ 0.7
26																	
27																	
28	60 54	12.1	13.6	28.2	29.0	28	250	. .	. .	. .	030	68.2	60 57 32.4	. .	+ 1 42.3	112 5 35.9	
29	60 54	12.1	13.6	28.2	29.0	29	. .	610	. .	500	. .	68.2	60 57 11.0	. .	+ 1 42.3	112 5 14.5	
30																	
31	47 8	22.3	21.4	7.2	6.7	23	907	907	. .	770	740	68.2	47 12 29.9	. .	+ 1 1.8	98 19 52 9	+ 1.1
32																	
33	23 12	14.5	17.0	1.5	1.8	23	820	. .	. .	790	. .	66.9	23 16 35.0	. .	+ 24.0	74 23 20.2	
34	23 12	14.5	17.0	1.5	1.8	24	. .	800	. .	780	. .	66.9	23 16 19.9	. .	+ 24.0	74 23 5.1	
35	15 8	8.5	11.0	27.3	27.0	28	. .	768	. .	742	. .	66.9	15 11 24.5	. .	+ 15.2	66 18 0.9	− 1.5
36	22 34	14.8	18.2	3.4	2.8	23	. .	822	. .	742	. .	66.9	22 38 34.2	. .	+ 23.4	73 45 18.8	− 0.7
37	20 46	15.0	17.3	2.9	2.1	24	. .	840	. .	772	. .	66.9	20 50 19.0	. .	+ 21.4	71 57 1.6	
38	47 10	21.7	24.4	12.0	10.0	25	. .	960	. .	945	. .	66.9	47 13 53.6	. .	+ 1 1.0	98 21 15.8	− 0.1
39	15 38	10 11.2	12.4	27.3	28.1	25	886	836	. .	. .	. .	66.9	15 42 8.7	. .	+ 15.9	66 48 45.8	
40	15 6	27.6	28.4	13.3	15.4	25	. .	. .	. .	010	965	66.9	15 10 33.4	. .	+ 15.4	66 17 10.0	
41	33 16	13.8	17.0	1.6	1.2	27	. .	100	. .	960	. .	66.9	33 19 45.8	. .	+ 36.6	84 26 43.6	+ 1.0
42	10 30	20.0	22.3	8.3	7.3	28	. .	900	. .	730	. .	66.9	10 33 12.7	. .	+ 10.4	61 39 44.3	+ 0.3
43	43 40	22.0	22.5	8.0	7.5	27	. .	880	. .	830	. .	69.1	43 43 28.7	. .	+ 53.2	94 50 43.1	+ 1.0
44	307 28	17.3	17.5	2.0	4.0	27	998	980	945	915	910	69.1	307 31 31.8	. .	− 1 12.4	358 36 40.6	0.0
45	49 18	18.7	19.3	4.5	3.2	27	775	760	. .	735	685	69.1	49 21 34.0	. .	+ 1 4.8	100 29 0.0	+ 1.5
46	38 44	19.2	19.0	3.0	3.5	23	. .	140	. .	090	. .	69.1	38 48 45.0	. .	+ 44.9	89 55 51.1	+ 1.3
47	348 52	20.2	20.0	5.3	4.5	26	. .	653	. .	620	. .	69.1	348 55 50.3	. .	− 10.9	40 2 0.6	+ 0.9
48	19 46	20.7	21.5	6.5	5.1	25	. .	030	. .	000	. .	69.1	19 50 13.8	. .	+ 20.2	70 56 55.2	+ 2.6
49	290 40	23.5	22.5	7.3	9.0	28	590	. .	. .	642	. .	69.1	290 43 16.5	. .	− 2 27.9	341 47 9.8	+ 1.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
7	29.900	75.0	73.8
9	29.956	73.5	71.8
12	29.984	73.5	73.7
13	. .	. .	73.7
15	30.019	74.5	74.0
20	30.044	76.0	79.0
24	30.096	75.8	72.9
25	30.150	72.6	64.0
26	. .	. .	63.0
27	30.150	72.2	62.9
29	. .	. .	62.9
31	. .	. .	61.2
32	30.163	71.9	
35	30.300	71.5	76.5
49	. .	. .	72.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	− 0.9	− 9.9	. .	− 10.8
5	− 0.9	+ 9.9	. .	+ 9.0
10	−35 51.4	+ 14 52.5	. .	− 20 58.9
15	− 3.3	− 9.5	+ 0.4	− 12.4
16	− 3.3	+ 9.5	. .	+ 6.2
19	− 2.2	+ 15 45.9	. .	+ 15 43.7
20	− 2.3	− 15 45.9	. .	− 15 48.2
28	− 0.9	− 10.7	. .	− 11.6
29	− 0.9	+ 10.7	. .	+ 9.8
33	− 3.2	− 7.7	+ 0.3	− 10.6
34	− 3.2	+ 7.7	. .	+ 4.5
37	− 4.3	. .	+ 0.2	− 4.1
39	− 2.3	− 15 47.9	. .	− 15 50.2
40	− 2.3	+ 15 47.9	. .	+ 15 45.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 22	1	α Draconis	E.	56.0	1.8	5.5	20.1	25.2	29.7	44.1	48.0	54.0	1 24.93	− 0.63	. .	−30.96	14 0 53.34	− 0.28
	2	α Bootis	E.	2.9	5.6	7.4	13.6	15.8	18.1	24.3	26.3	29.0	9 15.94	− 0.02	−30.92	−30.96	14 9 44.96	− 0.04
	3	ι Cassiopeæ, S. P.	E.	. .	. .	. .	3.3	57.7	52.7	47.5	. .	. .	18 52.69	+ 0.92	. .	−30.97	2 18 22.64	+ 0.20
	4	θ Bootis	E.	2.8	5.5	11.9	15.2	18.6	22.2	25.5	32.2	34.8	21 18.74	− 0.35	. .	−30.97	14 20 47.42	− 0.10
	5	5 Ursæ Minoris	E.	33.2	43.8	50.8	16.0	24.4	33.1	59.1	5.2	15.8	28 24.60	− 1.36	. .	−30.97	14 27 52.25	− 0.09
	6	ε Bootis	E.	37.0	40.0	41.7	48.3	50.7	53.1	0.0	1.9	4.6	39 50.81	− 0.07	−30.90	−30.97	14 39 19.77	+ 0.11
	7	α^2 Libræ	E.	0.8	3.5	5.1	11.4	13.5	15.7	21.9	23.5	26.6	44 13.56	+ 0.20	−30.92	−30.98	14 43 42.78	− 0.07
	8	β Ursæ Minoris	E.	. .	. .	25.7	33.4	41.5	49.3	56.8	. .	. .	51 21.39	− 1.14	. .	−30.98	14 51 9.17	− 0.19
	9	β Bootis	E.	19.2	22.7	30.1	32.8	35.4	38.2	41.0	48.3	51.6	57 35.48	− 0.20	. .	−30.98	14 57 4.30	− 0.06
	10	α Serpentis	E.	12.0	14.7	16.2	22.2	24.3	26.5	32.5	34.1	36.7	38 24.36	+ 0.07	−30.93	−30.99	15 57 53.44	− 0.04
	11	ε Serpentis	E.	40.3	42.9	44.4	50.6	52.5	54.6	0.8	2.3	4.9	44 52.59	+ 0.08	−30.86	−30.99	15 44 21.68	− 0.13
	12	ζ Ursæ Minoris	E.	. .	. .	2.1	11.6	22.0	32.1	42.0	. .	. .	49 22.01	− 1.56	. .	−31.00	15 48 49.45	− 0.44
	13	ε Coronæ Borealis	E.	. .	. .	. .	. .	. .	. .	54.1	55.8	58.6	52 44.89	− 0.07	. .	−31.00	15 52 13.82	− 0.22
	14	Polaris	E.	. .	. .	8.5	33.0	58.0	22.5	46.5	. .	. .	11 58.22	−14.30	. .	−31.20	1 11 12.72	− 1.77
	15	ο Piscium	E.	50.5	53.1	54.6	0.7	3.0	5.0	11.1	12.8	15.2	39 2.89	+ 0.04	−31.07	−31.21	1 38 31.72	− 0.17
	16	β Arietis	E.	45.9	48.5	50.2	56.6	58.9	1.0	7.6	9.1	11.9	47 58.86	− 0.03	−31.12	−31.21	1 47 27.62	− 0.08
	17	α Arietis	E.	8.7	11.5	13.3	19.7	22.0	24.2	30.9	32.6	35.4	0 22.03	− 0.04	−31.12	−31.23	1 59 50.76	− 0.10
	18	Moon II, N.	E.	23.6	26.0	27.9	34.0	36.0	38.1	44.5	46.0	48.5	3 36.07	+ 0.07	. .	−31.23	2 3 4.91	−61.46
	19	Venus II, N.	E.	49.2	51.8	53.6	59.8	1.9	4.0	10.4	12.0	14.8	19 1.94	+ 0.05	. .	−31.20	3 18 30.79	− 0.55
	20	α Tauri	E.	45.4	48.1	49.7	55.9	58.0	0.2	6.6	8.3	10.8	28 58.11	+ 0.05	−31.12	−31.22	4 28 26.94	− 0.12
	21	β Orionis	E.	35.4	38.0	39.4	45.5	47.7	49.4	55.9	57.3	0.1	8 47.63	+ 0.21	−31.29	−31.22	5 8 16.62	+ 0.06
	22	β Tauri	E.	21.0	24.0	25.7	32.6	34.8	37.2	44.0	46.0	48.8	18 34.90	− 0.04	−31.27	−31.22	5 18 3.66	+ 0.05
	23	δ Orionis	E.	. .	. .	48.1	50.0	52.0	54.4	56.2	. .	. .	25 52.15	+ 0.16	−31.23	−31.22	5 25 21.09	− 0.02
23	24	Sun I, S.	F.	40.8	43.6	45.8	51.9	54.2	56.6	3.0	4.9	7.7	7 54.28	0.00	. .	−31.23	6 7 23.05	. .
	25	Sun II	F.	58.7	1.4	3.2	10.0	12.0	14.4	21.0	22.5	25.4	10 12.07	0.00	. .	−31.23	6 9 40.84	. .
	26	12 Canum Venat.	F.	12.9	16.0	18.1	26.0	28.5	31.2	39.1	41.0	44.3	50 28.57	− 0.14	−31.27	−31.29	12 49 57.14	− 0.02
	27	θ Virginis	F.	32.8	35.3	37.0	43.1	45.3	47.2	53.3	54.9	57.4	3 45.14	+ 0.19	−31.27	−31.29	13 3 14.04	− 0.06
	28	Polaris, S. P.	F.	. .	. .	19.0	54.5	31.0	8.0	43.5	. .	. .	11 30.68	+14.76	. .	−31.29	1 11 14.15	− 0.82
	29	α Virginis	F.	40.3	42.9	44.5	50.6	52.7	54.8	1.0	2.5	5.2	18 52.72	+ 0.23	−31.18	−31.29	13 18 21.66	− 0.12
	30	ζ Virginis	F.	24.0	26.7	28.0	34.2	36.0	38.2	44.3	45.9	48.4	28 36.19	+ 0.16	−31.19	−31.29	13 28 5.16	0.00
	31	44 Ophiuchi	F.	45.7	48.5	50.2	56.9	59.0	1.3	8.0	9.6	12.3	18 59.06	+ 0.33	−31.37	−31.33	17 18 28.06	+ 0.07
	32	966 Groom., S. P.	F.	. .	. .	2.9	55.2	47.1	39.4	31.3	. .	. .	22 47.23	+ 1.49	. .	−31.33	5 22 17.39	− 0.64
	33	α Ophiuchi	F.	14.6	17.2	18.8	25.0	27.3	29.1	35.5	37.0	39.5	29 27.11	+ 0.07	−31.35	−31.33	17 28 55.85	+ 0.05
	34	Saturn I, S.	F.	23.2	26.0	27.8	. .	. .	. .	45.3	47.0	49.7	37 36.49	+ 0.31	. .	−31.33	17 37 5.47	. .
	35	Saturn II, N.	F.	. .	. .	33.6	35.8	37.9	40.1	42.2	. .	. .	37 37.93	+ 0.31	. .	−31.33	17 37 6.91	. .
	36	μ Herculis	F.	41.8	44.6	46.3	53.2	55.5	57.8	4.8	6.4	9.4	41 55.53	− 0.04	−31.33	−31.33	17 41 24.16	0.00
	37	γ Draconis	F.	49.8	53.7	56.1	6.0	9.3	12.5	22.4	24.8	29.0	54 9.29	− 0.30	. .	−31.33	17 53 37.66	− 0.14
	38	δ Ursæ Minoris	F.	. .	. .	5.0	38.5	12.5	48.0	22.0	. .	. .	15 13.40	− 5.88	. .	−31.34	18 14 36.18	− 0.49
	39	1 Aquilæ	F.	. .	. .	37.3	38.9	41.0	43.0	45.0	. .	. .	28 41.05	+ 0.21	−31.41	−31.34	18 28 9.92	+ 0.14
	40	α Lyræ	F.	50.1	53.2	55.3	3.1	5.7	8.3	16.1	18.2	21.4	33 5.71	− 0.14	−31.25	−31.34	18 32 34.23	− 0.07
	41	β Lyræ	F.	35.6	38.7	40.5	47.8	50.3	52.8	0.0	1.9	4.8	45 50.27	− 0.09	−31.35	−31.34	18 45 18.84	+ 0.04
	42	σ Sagittarii	F.	31.6	34.4	36.3	42.9	45.4	47.6	54.4	56.0	58.9	47 45.28	+ 0.35	−31.34	−31.34	18 47 14.29	+ 0.01
	43	ζ Aquilæ	F.	46.6	49.3	50.9	57.0	59.2	1.3	7.6	9.3	11.8	59 59.22	+ 0.07	−31.38	−31.34	18 59 27.95	+ 0.08
	44	d Sagittarii	F.	21.8	24.8	26.1	32.6	34.7	36.8	43.2	44.8	47.6	10 34.71	+ 0.29	−31.43	−31.35	19 10 3.65	+ 0.10
	45	δ Draconis	F.	34.6	41.5	45.4	1.5	6.8	12.0	27.9	32.0	38.9	13 6.73	− 0.72	. .	−31.35	19 12 34.66	− 0.05
	46	Venus II, N.	S.	23.1	25.9	27.5	33.9	36.0	38.0	44.6	46.0	48.8	23 35.98	+ 0.04	. .	−31.20	3 23 4.82	− 0.54
	47	Venus S.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . . .	. .
	48	α Tauri	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. .	. .	. .	. . . . .	. .

1, 9. Bisections at sets B and D.
3. Bisections at C_2 and C_4.
8, 12. Bisections at C_1 and C_5.
13. Bisections at wires D_3 and VI.
19. Telescope micrometer increased five revolutions.
46, 47. Telescope micrometer diminished five revolutions for both limbs.

Number.	Circle Division.	MICROSCOPE MICROMS. I.	II.	III.	IV.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	333 50	25.2	25.5	10.9	10.2	25	. .	630	. .	605	. .	69.1	333 54 0.2	. .	— 27.5	24 59 53.9	— 0.2
2	18 58	19.1	18.9	4.2	2.8	27	. .	500	. .	500	. .	69.1	19 1 38.1	. .	+ 19.4	70 8 18.7	+ 1.7
3	285 42	16.0	15.5	29.5	1.5	27	. .	685	. .	725	. .	69.1	285 45 37.9	. .	— 3 16.5	336 48 42.6	+ 2.0
4	346 22	16.4	17.3	1.3	0.6	24	. .	180	. .	145	. .	69.1	346 26 31.8	. .	— 13.6	37 32 39.4	+ 1.9
5	322 34	18.6	19.2	3.8	4.0	27	. .	310	. .	290	. .	69.1	322 37 42.2	. .	— 43.0	13 43 20.4	+ 1.0
6	11 12	18.0	18.2	3.8	2.5	26	. .	440	. .	430	. .	69.1	11 15 55.0	. .	+ 11.2	62 22 27.4	+ 0.6
7	54 18	18.6	18.8	3.2	3.8	24	. .	485	. .	390	. .	69.1	54 22 24.8	. .	+ 1 18.6	105 30 4.6	+ 2.2
8	324 8	17.2	16.3	1.5	2.0	22	. .	720	. .	700	. .	69.1	324 12 53.2	. .	— 40.7	15 18 33.7	+ 0.1
9	357 56	17.8	17.5	1.3	1.7	29	. .	. .	108	. .	062	69.1	357 59 12.9	. .	— 2.0	49 5 32.1	— 1.0
10	31 58	17.0	17.4	1.3	2.8	22	. .	852	. .	805	. .	69.1	32 2 51.0	. .	+ 35.4	83 9 47.6	+ 2.6
11	33 56	18.3	19.0	3.5	3.6	23	. .	200	. .	175	. .	69.1	34 0 44.0	. .	+ 38.1	85 7 43.3	+ 1.6
12	320 38	17.8	17.7	3.2	2.8	23	. .	623	. .	575	. .	69.1	320 42 38.5	. .	— 46.2	11 48 13.5	+ 1.4
13	11 34	20.0	20.3	4.2	5.0	26	. .	. .	. .	020	980	69.1	11 37 59.2	. .	+ 11.6	62 44 32.0	+ 1.3
14	310 14	10.0	12.5	27.4	29.0	26	020	973	960	980	020	67.2	310 18 5.8	. .	— 1 6.7	1 23 20.3	+ 0.9
15	30 18	15.0	18.0	4.2	3.0	22	. .	240	. .	200	. .	67.2	30 22 57.7	. .	+ 33.1	81 29 52.0	— 0.2
16	18 38	11.0	15.2	0.2	0.2	21	855	830	. .	815	763	67.2	18 43 7.6	. .	+ 19.1	69 49 47.9	+ 0.9
17	15 58	11.5	14.5	29.6	0.2	23	. .	550	. .	540	. .	67.2	16 2 41.4	. .	+ 16.2	67 9 18.8	+ 0.6
18	32 6	5.5	11.3	25.7	27.3	25	. .	580	. .	490	420	67.2	32 10 15.4	. .	+ 35.5	83 17 12.1	
19	22 54	12.8	14.3	0.5	1.0	27	. .	650	. .	530	. .	66.0	22 57 37.6	. .	+ 23.6	74 4 22.4	
20	22 34	10 10.6	12.4	27.2	28.6	24	060	994	. .	958	930	66.0	22 38 35.3	. .	+ 22.9	73 45 19.4	— 0.1
21	47 10	7.6	9.6	25.2	26.0	26	. .	770	. .	710	. .	66.0	47 13 55.6	. .	+ 59.2	98 21 16.0	+ 0.3
22	10 20	10 3.2	4.0	22.7	22.8	27	. .	240	. .	172	. .	66.0	10 23 52.6	. .	+ 10.1	61 30 23.9	+ 0.4
23	39 12	9.0	8.4	29.0	28.3	23	. .	190	. .	040	. .	66.0	39 16 49.5	. .	+ 44.8	90 23 55.5	+ 1.0
24	15 38	9 24.1	24.2	9.6	11.4	24	. .	356	. .	384	. .	66.0	15 42 46.6	. .	+ 15.4	66 49 23.2	
25																	
26	359 48	6.5	11.0	23.5	24.2	25	. .	814	. .	718	. .	68.3	359 52 13.9	. .	— 0.1	50 58 35.0	+ 1.6
27	43 40	10 7.3	11.7	25.9	26.9	28	520	500	. .	410	490	68.3	43 43 30.4	. .	+ 52.5	94 50 44.1	+ 2.0
28	307 28	10 10.5	13.5	26.3	29.6	28	226	265	260	228	210	68.3	307 31 31.9	. .	— 1 11.6	358 36 41.5	+ 0.9
29	49 18	7.7	11.5	25.6	26.5	28	254	211	. .	095	072	68.3	49 21 35.4	. .	+ 1 4.2	100 29 0.8	+ 1.8
30	38 44	10 12.6	13.8	27.4	28.1	23	398	392	. .	330	300	68.3	38 48 46.3	. .	+ 44.4	89 55 51.9	+ 2.6
31	62 50	10 13.1	12.2	27.0	29.0	22	. .	575	. .	512	. .	68.3	62 54 58.7	. .	+ 1 49.8	114 3 9.7	+ 2.8
32	293 48	10 11.6	11.4	25.1	28.2	23	. .	500	. .	528	. .	68.3	293 52 45.0	. .	— 2 6.4	344 56 58.4	+ 1.4
33	26 10	11.7	11.0	25.0	26.2	27	710	720	. .	610	604	68.3	26 13 42.5	. .	+ 27.8	77 20 31.5	+ 0.8
34	60 54	10 13.1	13.8	28.9	0.1	28	672	. .	. .	. .	590	68.3	60 57 24.2	. .	+ 1 40.2	112 5 25.6	
35	60 54	13.1	13.8	28.9	0.1	29	. .	756	. .	760	. .	68.3	60 57 7.2	. .	+ 1 40.2	112 5 8.6	
36	11 2	14.0	14.0	29.7	29.5	28	. .	. .	. .	344	314	68.3	11 5 28.0	. .	+ 11.1	62 12 0.3	+ 0.2
37	347 20	10 19.0	18.8	3.8	3.7	28	. .	. .	. .	070	075	68.3	347 23 27.8	. .	— 12.6	38 29 36.4	— 0.5
38	312 14	12.6	11.8	26.4	28.4	25	388	372	314	318	364	68.3	312 18 16.5	. .	— 1 1.9	3 23 35.8	+ 0.5
39	47 8	8.0	8.7	23.6	25.2	24	. .	. .	. .	680	612	68.3	47 12 29.5	. .	+ 1 0.9	98 19 51.6	0.0
40	0 10	12.8	12.6	27.7	29.0	27	. .	400	. .	360	. .	68.3	0 13 45.0	. .	+ 0.2	51 20 6.4	+ 0.6
41	5 36	10 12.2	11.9	26.0	26.5	23	. .	630	. .	630	. .	68.3	5 40 43.4	. .	+ 5.6	56 47 10.2	+ 1.0
42	65 14	10 9.1	10.1	24.9	27.3	23	. .	114	. .	154	. .	68.3	65 18 52.1	. .	+ 2 2.1	116 27 15.4	+ 3.3
43	25 8	10.9	11.4	25.8	26.7	23	. .	290	. .	300	. .	68.3	25 12 49.0	. .	+ 26.6	76 19 36.8	+ 1.1
44	57 58	10 16.5	16.4	1.4	2.5	22	471	415	. .	. .	. .	68.3	58 2 57.4	. .	+ 1 30.0	109 10 48.6	+ 4.0
45	331 24	10 12.7	12.5	26.7	27.8	25	. .	. .	. .	585	682	68.3	331 28 13.2	. .	— 30.5	22 34 4.9	+ 1.9
46	22 34	. .	. .	. .	. .	20	660	. .	. .	. .	663	66.2	22 39 10.7	. .	+ 23.0	73 45 54.9	
47	22 34	11.1	13.5	27.6	27.7	21	. .	624	. .	618	. .	66.2	22 39 26.5	. .	+ 23.0	73 46 10.7	
48	22 34	14.3	15.5	29.6	29.6	23	785	. .	. .	. .	698	66.2	22 38 36.7	. .	+ 22.7	73 45 20.6	+ 1.2

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	30.230	74.0	71.5
7	. .	. .	69.5
14	30.280	68.5	69.0
19	30.286	70.6	78.3
20	. .	. .	84.3
22	. .	. .	86.4
23	30.270	75.0	86.4
24	30.256	76.0	88.2
26	30.196	78.5	84.8
29	. .	. .	81.2
30	30.198	78.0	81.0
32	. .	. .	69.3
36	. .	. .	69.2
38	30.190	93.0	68.9
45	30.190	72.0	68.8
46	30.218	71.4	
47	. .	. .	83.3
48	. .	. .	88.3

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
18	—28 38.1	+ 14 47.1	. .	— 13 52.0
19	— 3.2	+ 7.9	. .	+ 4.7
24	— 2.3	— 15 45.2	. .	— 15 47.5
34	— 0.9	— 8.5	. .	— 9.4
35	— 0.9	+ 8.5	. .	+ 7.6
46	— 3.1	+ 8.1	. .	+ 5.0
47	— 3.1	— 8.1	. .	— 10.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 23	1	Mercury II	S.	24.2	26.8	28.8	34.9	37.0	39.1	45.6	47.0	49.9	11 37.03	− 0.03	. .	−31.21	4 54 5.79	− 0.32
	2	α Aurigæ	S.	18.5	21.7	30.0	32.6	35.5	38.6	41.6	49.7	53.4	7 35.73	− 0.22	. .	−31.22	5 7 4.29	+ 0.09
24	3	Sun I, S.	S.	50.4	53.2	55.1	1.6	3.7	6.0	12.6	14.4	17.2	12 3.80	− 0.01	. .	−31.23	6 11 32.56	. .
	4	Sun II, N.	S.	8.2	10.9	12.7	19.7	21.6	23.9	30.4	32.0	34.8	14 21.58	− 0.01	. .	−31.23	6 13 50.34	. .
	5	α Canis Majoris	S.	47.8	50.2	51.9	58.0	0.0	2.1	8.2	9.9	12.3	33 0.04	+ 0.12	−31.29	−31.24	7 32 28.92	− 0.09
	6	θ Virginis	S.	33.0	35.4	37.0	43.0	45.0	47.2	53.3	54.9	57.4	3 45.13	+ 0.18	−31.25	−31.30	13 3 14.01	− 0.09
	7	Polaris, S. P.	S.	3.5	8.5	6.0	17.5	53.0	31.0	. .	. .	. .	11 29.37	+14.11	. .	−31.30	1 11 12.18	− 3.76
	8	β Libræ	S.	21.2	23.4	25.5	31.3	33.4	35.6	41.6	43.2	45.7	10 33.43	+ 0.22	−31.32	−31.32	15 10 2.33	0.00
	9	μ^1 Bootis	S.	52.3	55.6	57.5	5.2	7.7	10.3	18.1	20.0	23.4	20 7.79	− 0.14	−31.34	−31.32	15 19 36.33	+ 0.01
	10	α Coronæ Borealis	S.	30.2	33.0	35.0	41.5	44.0	46.3	53.0	54.9	57.6	29 43.94	− 0.03	−31.36	−31.33	15 29 12.58	+ 0.03
	11	α Serpentis	S.	12.4	14.9	16.6	22.6	24.8	26.8	33.0	34.7	37.1	38 24.77	+ 0.11	−31.39	−31.33	15 37 53.55	+ 0.08
	12	ε Serpentis	S.	41.0	44.9	48.9	51.0	53.0	55.0	57.1	1.2	5.2	44 53.03	+ 0.12	−31.35	−31.33	15 48 21.82	+ 0.02
	13	δ Scorpii	S.	58.7	1.3	3.2	9.6	11.7	14.0	20.7	22.3	25.2	53 11.87	+ 0.31	−31.36	−31.33	15 52 40.85	+ 0.04
	14	β^1 Scorpii	S.	12.7	15.5	17.1	23.6	25.6	27.8	34.3	36.0	38.6	58 25.69	+ 0.29	−31.32	−31.33	15 57 54.65	+ 0.02
	15	ζ Ophiuchi	S.	20.6	23.1	24.8	31.0	33.0	35.1	41.3	43.0	45.4	30 33.03	+ 0.22	−31.33	−31.33	16 30 1.92	0.00
	16	κ Ophiuchi	S.	51.5	54.1	55.7	1.8	3.9	6.0	12.0	13.9	16.3	52 3.91	+ 0.09	−31.33	−31.34	16 51 32.66	+ 0.03
	17	d Herculis	S.	7.2	10.3	12.0	19.2	21.9	24.1	31.5	33.5	36.6	57 21.81	− 0.09	. .	−31.34	16 56 50.38	+ 0.25
	18	α^1 Herculis	S.	. .	. .	12.1	14.2	16.2	18.4	20.5	. .	. .	9 16.29	+ 0.06	−31.34	−31.34	17 8 45.01	+ 0.02
	19	α Ophiuchi	S.	14.7	17.2	18.8	25.0	27.1	29.2	35.7	37.0	39.7	29 27.16	+ 0.07	−31.30	−31.34	17 28 55.89	+ 0.08
	20	Saturn I, N.	S.	4.6	7.3	9.0	. .	. .	. .	. .	. .	. .	37 17.77	+ 0.31	. .	−31.35	17 36 46.73	. .
	21	Saturn II, S.	S.	. .	. .	. .	14.5	16.9	19.1	. .	. .	. .	37 19.04	+ 0.31	. .	−31.35	17 36 48.00	. .
	22	δ Ursæ Minoris	S.	. .	. .	4.0	38.5	12.0	47.5	22.0	. .	. .	15 13.18	− 5.65	. .	−31.35	18 14 36.18	− 0.43
	23	α Lyræ	S.	50.2	53.4	55.4	3.2	5.7	8.3	16.1	18.2	21.4	33 5.77	− 0.14	−31.30	−31.36	18 32 34.27	− 0.04
	24	51 Cephei, S. P.	S.	. .	. .	5.5	24.5	42.0	0.0	17.0	. .	. .	38 41.58	+ 7.20	. .	−31.36	6 38 17.42	− 1.34
	25	Polaris	S.	. .	. .	. .	. .	57.0	20.0	45.0	. .	. .	11 57.10	−15.39	. .	−31.42	1 11 10.29	− 6.13
	26	β Arietis	S.	46.1	48.8	50.6	56.9	59.2	1.3	7.9	9.6	12.2	47 59.18	− 0.02	−31.38	−31.43	1 47 27.73	− 0.03
	27	Venus II, S.	S.	58.7	1.5	3.2	9.5	11.6	13.8	20.1	21.8	24.5	28 11.63	+ 0.04	. .	−31.58	3 27 40.09	− 0.54
	28	Venus N. L.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	29	δ Persei	S.	. .	. .	5.9	9.0	12.0	15.0	18.0	. .	. .	34 12.00	− 0.26	. .	−31.58	3 33 40.16	+ 0.29
	30	η Tauri	S.	3.5	6.3	8.0	14.5	16.8	19.0	25.6	27.3	30.1	40 16.79	− 0.02	−31.70	−31.58	3 39 45.19	+ 0.13
	31	ζ Persei	S.	. .	. .	24.2	27.7	29.0	31.5	33.8	. .	. .	46 29.25	− 0.08	−31.90	−31.58	3 45 57.59	+ 0.31
	32	α Tauri	S.	46.0	48.7	50.2	56.5	58.8	0.9	7.3	8.8	11.6	28 58.76	+ 0.04	−31.72	−31.59	4 28 27.21	+ 0.11
	33	Mercury II, N.	S.	2.4	5.0	6.8	13.2	15.3	17.6	23.9	25.6	28.2	47 15.33	+ 0.03	. .	−31.60	4 46 43.76	− 0.31
	34	β Orionis	S.	35.8	38.2	40.0	46.0	48.0	50.1	56.3	58.0	0.5	8 48.12	+ 0.22	−31.79	−31.60	5 8 16.78	+ 0.19
	35	β Tauri	S.	21.5	24.5	26.1	33.0	35.5	37.7	44.6	46.4	49.4	18 35.41	− 0.05	−31.74	−31.60	5 18 3.76	+ 0.12
	36	δ Orionis	S.	40.5	43.0	44.7	. .	. .	. .	0.8	2.3	5.0	25 52.71	+ 0.16	−31.77	−31.60	5 25 21.27	+ 0.14
	37	ε Orionis	S.	55.6	58.0	59.6	5.7	7.7	9.8	15.9	17.4	20.0	30 7.74	+ 0.17	−31.71	−31.61	5 29 36.30	+ 0.09
25	38	Sun I, S.	E.	0.4	3.0	4.5	11.3	13.7	15.9	22.6	24.2	27.0	16 13.62	− 0.01	. .	−31.62	6 15 41.99	. .
	39	Sun II, N.	E.	18.0	20.8	22.4	29.2	31.4	33.6	40.2	42.0	44.9	18 31.39	− 0.01	. .	−31.62	6 17 59.76	. .
	40	α Geminorum	E.	. .	. .	44.5	46.5	48.9	51.2	53.8	. .	. .	26 48.99	− 0.08	−31.79	−31.64	7 26 17.27	+ 0.39
	41	α Canis Minoris	E.	48.1	50.6	52.1	58.3	0.6	2.5	8.6	10.2	12.6	33 0.46	+ 0.12	−31.64	−31.64	7 32 28.88	− 0.14
	42	β Geminorum	E.	38.2	41.1	42.8	49.9	52.1	54.5	1.5	3.2	6.0	37 52.14	− 0.05	−31.54	−31.64	7 37 20.45	− 0.13
	43	β^1 Scorpii	E.	13.0	15.7	17.3	23.8	25.9	28.1	34.6	36.3	38.9	58 25.96	+ 0.29	−31.59	−31.76	15 57 54.49	− 0.14
	44	δ Ophiuchi	E.	53.0	55.6	57.1	3.3	5.3	7.3	13.4	14.9	17.5	8 5.27	+ 0.18	−31.70	−31.77	16 8 33.68	− 0.05
	45	τ Herculis	E.	6.3	9.9	12.0	21.0	24.0	27.0	35.8	38.0	41.7	16 23.97	− 0.25	. .	−31.78	16 15 51.94	+ 0.12

1. Entire seconds assumed.
22, 29, 40. Bisections at sets B and D.
31. Bisections at wires D_3 and VI.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1																	
2																	
3	15 40	7.8	8.5	22.8	24.8	27	342	348	. .	. .	. .	66.2	15 43 49.1	. .	+ 15.2	66 50 25.5	
4	. .	2.5	3.8	18.0	19.8	25	. .	. .	. .	644	642	66.2	15 12 17.7	. .	+ 14.7	66 18 53.6	
5	33 16	18.8	21.5	5.5	5.2	26	857	770	. .	717	603	66.2	33 19 45.2	. .	+ 34.5	84 26 40.9	− 1.5
6	43 40	19.3	21.3	5.3	5.7	27	878	890	. .	848	831	68.5	43 43 30.0	. .	+ 52.1	94 50 43.3	+ 1.3
7																	
8	47 42	22.9	22.9	6.6	6.4	22	080	928	. .	913	857	68.4	47 46 43.2	. .	+ 1 1.2	98 54 5.6	+ 0.6
9																	
10																	
11	31 58	21.0	20.9	4.3	4.3	22	. .	710	. .	625	. .	68.3	32 2 49.7	. .	+ 34.9	83 9 45.8	+ 1.0
12	33 56	21.2	20.9	4.4	4.3	23	110	115	. .	043	018	68.3	34 0 43.4	. .	+ 37.6	85 7 42.2	+ 0.8
13																	
14	58 14	21.5	21.3	6.2	5.6	21	. .	. .	. .	858	757	68.3	58 19 0.4	. .	+ 1 30.0	109 26 51.6	− 0.1
15	49 6	21.2	20.6	5.0	4.2	23	490	450	. .	. .	412	68.2	49 10 37.6	. .	+ 1 4.6	100 18 3.4	+ 0.6
16	29 14	21.2	20.6	5.1	3.6	24	. .	726	. .	654	. .	68.2	29 18 18.7	. .	+ 31.4	80 25 11.3	+ 1.8
17	5 4	21.5	20.0	4.7	3.4	25	. .	170	. .	125	. .	68.2	5 7 56.8	. .	+ 5.0	56 14 23.0	0.0
18	24 16	25.0	24.4	7.6	6.9	22	. .	922	. .	866	. .	68.1	24 20 42.7	. .	+ 25.3	75 27 29.2	+ 0.7
19																	
20	60 52	20.7	19.5	4.3	4.8	22	958	. .	. .	. .	948	68.1	60 57 0.3	. .	+ 1 40.5	112 5 2.0	
21	60 52	20.7	19.5	4.3	4.8	. .	. .	530	. .	516	. .	68.1	60 57 22.3	. .	+ 1 40.5	112 5 24.0	
22	312 14	23.8	22.5	6.4	6.8	24	. .	890	. .	830	. .	68.0	312 18 14.2	. .	− 1 1.6	3 23 33.8	− 1.2
23																	
24																	
25																	
26																	
27	22 16	23.5	25.3	10.3	9.6	20	282	. .	. .	. .	200	66.0	22 21 20.0	. .	+ 22.6	73 28 3.8	
28	. .	23.5	25.3	10.3	9.6	21	. .	272	. .	260	. .	66.0	22 21 4.2	. .	+ 22.6	73 27 48.0	
29	351 28	16.7	19.0	1.5	1.7	26	. .	. .	870	. .	850	66.0	351 31 46.2	. .	− 8.2	42 37 59.2	− 2.6
30																	
31	7 20	24.5	26.2	10.6	8.9	25	. .	. .	. .	802	770	66.0	7 23 53.9	. .	+ 7.1	58 30 22.2	− 2.4
32	22 34	19.6	22.2	5.2	4.0	23	. .	455	. .	420	. .	66.0	22 38 35.5	. .	+ 22.8	73 45 19.5	+ 0.2
33	20 12	22.4	23.8	8.3	6.6	26	790	770	. .	690	670	66.0	20 15 42.7	. .	+ 20.1	71 22 24.0	
34	47 10	27.0	29.9	13.6	12.2	25	. .	570	. .	510	. .	66.0	47 13 55.3	. .	+ 58.6	108 21 15.1	− 0.2
35	10 20	25.3	28.8	12.6	9.4	25	. .	952	. .	872	. .	66.0	10 23 51.5	. .	+ 9.9	61 30 22.6	− 0.9
36	39 12	19.0	21.6	3.2	4.1	22	. .	672	. .	578	. .	66.0	39 16 48.6	. .	+ 44.2	90 23 54.0	− 0.1
37	40 6	17.3	20.8	5.8	4.1	25	. .	140	. .	038	. .	66.0	40 10 11.2	. .	+ 45.6	91 17 18.0	+ 1.8
38	15 42	22.2	22.5	6.0	5.9	28	578	430	. .	. .	. .	66.0	15 45 17.9	. .	+ 15.2	66 51 54.3	
39	15 10	22.6	22.7	7.5	7.0	26	. .	. .	. .	520	450	66.0	15 13 45.7	. .	+ 14.6	66 20 21.5	
40	6 40	22.0	23.8	7.9	6.8	28	. .	. .	380	. .	310	66.0	6 43 18.0	. .	+ 6.4	57 49 45.6	0.0
41	33 16	22.5	24.6	7.7	8.3	26	. .	510	. .	450	. .	66.0	33 19 45.9	. .	+ 35.4	84 26 42.5	+ 0.2
42	10 30	19.0	20.5	4.0	3.5	28	. .	888	. .	818	. .	66.0	10 33 13.8	. .	+ 10.1	61 39 45.1	+ 1.0
43	58 14	22.8	20.5	8.0	9.1	21	. .	620	. .	555	. .	69.3	58 19 3.4	. .	+ 1 29.3	109 26 53.9	+ 2.1
44	42 10	20.5	20.0	3.6	3.7	25	. .	118	. .	060	. .	69.3	42 14 14.3	. .	+ 50.2	93 21 25.7	+ 1.5
45	352 12	21.2	21.0	5.2	4.2	25	. .	360	. .	290	. .	69.3	352 16 10.1	. .	− 7.5	43 22 23.8	+ 0.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
4	30.216	79.0	92.2
5	. .	. .	94.0
6	. .	. .	86.2
7	30.144	81.0	
8	30.146	79.4	76.0
9	. .	. .	75.8
10	. .	. .	75.0
11	. .	. .	74.3
13	30.152	78.0	74.0
14	. .	. .	73.2
15	30.153	. .	77.2
16	. .	. .	73.0
17	. .	. .	72.8
18	30.160	76.3	72.3
19	. .	. .	72.0
20	. .	. .	71.9
22	30.160	76.2	71.5
39	30.160	84.2	94.5
45	30.080	82.0	

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	− 2.3	− 15 45.9	. .	− 15 48.2
4	− 2.2	+ 15 45.9	. .	+ 15 43.7
20	− 0.9	+ 11.0	. .	+ 10.1
21	− 0.9	− 11.0	. .	− 11.9
27	− 3.0	− 8.1	+ 0.4	− 10.7
28	− 3.0	+ 8.1	. .	+ 5.1
33	− 3.9	+ 4.3	. .	+ 0.4
38	− 2.3	− 15 46.4	. .	− 15 48.7
39	− 2.3	+ 15 46.4	. .	+ 15 44.1

DATE.	Number.*	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 25	1	α Scorpii	E.	46.0	48.7	50.6	57.4	59.7	1.8	8.6	10.5	13.3	21 59.62	+ 0.35	−31.59	−31.78	16 21 28.19	− 0.20
	2	ζ Ophiuchi . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	3	η Herculis . . .	E.	44.3	47.7	49.6	57.5	0.0	2.7	10.6	12.6	16.0	39 0.01	− 0.16	−31.58	−31.78	16 39 28.07	− 0.19
	4	9 Camelopard., S. P.	E.	. .	. .	47.6	43.1	37.5	32.7	27.4	. .	. .	41 37.69	+ 1.03	. .	−31.79	4 41 6.93	+ 0.42
	5	κ Ophiuchi . . .	E.	51.9	54.5	56.0	2.2	4.3	6.3	12.5	14.0	16.7	52 4.27	+ 0.09	−31.69	−31.79	16 51 32.57	− 0.06
	6	d Herculis . . .	E.	7.5	10.6	12.3	19.5	22.2	24.7	32.0	34.0	36.9	57 22.19	− 0.10	. .	−31.79	16 56 50.30	+ 0.16
	7	α Herculis . . .	E.	4.1	6.7	8.3	14.6	16.7	18.8	25.2	26.7	29.4	9 16.70	+ 0.06	−31.75	−31.79	17 8 44.97	− 0.02
	8	44 Ophiuchi . . .	E.	46.0	48.7	50.4	57.0	59.4	1.5	8.3	9.9	12.8	18 59.33	+ 0.33	−31.63	−31.80	17 18 27.86	− 0.14
	9	Groom. 966, S. P. .	E.	. .	. .	3.9	55.6	47.8	40.5	32.7	. .	. .	22 48.15	+ 1.62	. .	−31.80	5 22 17.97	− 0.05
	10	α Ophiuchi . . .	E.	15.1	17.5	19.3	25.4	27.5	29.6	35.8	37.4	40.0	29 27.51	+ 0.07	−31.73	−31.80	17 28 55.78	− 0.04
	11	Saturn I, N. . .	E.	46.0	48.9	50.6	. .	. .	. .	8.2	9.8	12.6	36 59.24	+ 0.31	. .	−31.80	17 36 27.75	. .
	12	Saturn II, S. . .	E.	. .	. .	56.2	58.3	0.5	2.8	5.1	. .	. .	37 0.59	+ 0.31	. .	−31.80	17 30 29.10	. .
	13	μ Herculis . . .	E.	42.2	45.0	46.8	53.6	56.0	58.0	5.3	7.0	9.7	41 55.96	− 0.05	−31.74	−31.80	17 41 24.11	+ 0.06
	14	μ^1 Sagittarii . . .	E.	19.8	22.3	23.9	30.6	32.8	34.9	41.6	43.0	45.9	6 32.76	+ 0.31	−31.68	−31.81	18 6 1.26	− 0.12
	15	δ Ursæ Minoris. .	E.	. .	. .	4.5	40.0	13.5	47.5	24.5	. .	. .	15 14.64	− 6.36	. .	−31.81	18 14 36.47	− 0.04
	16	1 Aquilæ. . . .	E.	29.0	31.6	33.2	39.4	41.4	43.4	49.7	51.2	53.8	28 41.41	+ 0.21	−31.74	−31.81	18 28 9.81	0.00
	17	51 Cephei, S. P. .	E.	. .	. .	6.5	24.5	42.0	1.5	18.0	. .	. .	38 42.28	+ 8.17	. .	−31.82	6 33 18.63	− 0.21
	18	β Lyræ	E.	36.0	39.1	41.0	48.2	50.8	53.2	0.4	2.3	5.3	45 50.70	− 0.10	−31.75	−31.82	18 45 18.78	− 0.04
26	19	Polaris. . . .	S.	. .	. .	15.0	42.0	2.	37.0	52.0	. .	. .	12 4.12	−14.36	. .	−31.85	1 12 17.91	. .
	20	β Arietis	S.	46.7	49.4	51.0	57.5	59.7	1.9	8.3	10.0	12.8	47 59.70	+ 0.03	−31.88	−31.86	1 47 27.87	+ 0.04
	21	α Arietis	S.	9.4	12.5	14.0	20.8	23.0	25.2	31.6	33.3	36.0	0 22.87	+ 0.01	−31.88	−31.87	1 59 51.06	+ 0.02
	22	Venus II, S. . .	S.	13.0	15.7	17.3	23.7	26.0	28.0	34.4	36.0	38.7	37 25.87	+ 0.05	. .	−31.89	3 36 54.03	− 0.54
	23	Venus, N. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	24	α Tauri	S.	49.0	50.6	54.7	57.0	59.0	1.1	3.2	7.6	9.1	28 59.03	+ 0.06	−31.97	−31.91	4 27 27.18	+ 0.04
27	25	Sun I	S.	19.0	. .	27.7	29.8	. .	34.6	36.9	. .	45.8	24 32.30	+ 0.01	. .	−31.94	6 24 0.37	. .
	26	Sun II, N. . . .	S.	36.9	39.4	41.2	47.9	50.0	52.3	59.0	0.7	3.6	26 50.11	+ 0.01	. .	−31.94	6 26 18.18	. .
	27	α Canis Minoris	S.	48.3	50.9	52.3	58.6	0.7	2.8	8.8	10.3	13.0	33 0.63	+ 0.13	−31.87	−31.96	7 32 28.80	− 0.23
	28	α Ceti.	E.	. .	. .	57.0	59.0	1.0	3.0	5.0	. .	. .	56 1.00	+ 0.36	−32.50	−32.44	2 56 28.92	+ 0.08
	29	α Persei	E.	. .	. .	. .	. .	. .	. .	47.8	50.1	54.2	15 35.31	− 0.23	. .	−32.44	3 15 2.64	+ 0.02
	30	δ Persei	E.	. .	. .	7.2	10.0	13.2	16.1	18.9	. .	. .	34 13.10	− 0.18	. .	−32.45	3 34 40.47	+ 0.49
	31	η Tauri	E.	. .	. .	13.1	15.2	17.5	19.8	22.1	. .	. .	40 17.55	+ 0.15	−32.55	−32.46	3 39 45.24	+ 0.10
	32	α Tauri	E.	46.8	49.4	51.0	57.3	59.5	1.5	8.0	9.5	12.3	28 59.48	+ 0.23	−32.56	−32.46	4 28 27.25	+ 0.08
	33	Mercury II, N. .	E.	49.7	52.2	53.9	0.4	2.5	4.6	11.3	12.8	15.4	57 2.53	+ 0.20	. .	−32.47	4 56 30.26	− 0.29
	34	α Aurigæ. . . .	E.	19.4	23.2	25.4	34.0	36.9	39.9	48.5	50.9	54.7	36.99	− 0.15	. .	−32.47	5 7 4.37	+ 0.07
	35	Sun I, S. . . .	E.	28.5	31.4	33.1	39.7	41.9	44.2	50.7	52.6	55.2	28 41.90	+ 0.15	. .	−32.60	6 28 9.45	. .
28	36	Sun II, N. . . .	E.	46.1	49.0	50.7	57.2	59.5	1.8	8.4	10.0	12.9	30 59.51	+ 0.15	. .	−32.60	6 30 27.06	. .
	37	α Geminorum . .	E.	35.2	38.1	40.0	47.1	49.6	51.8	59.2	1.1	4.0	26 49.57	+ 0.05	−32.49	−32.61	7 26 17.01	+ 0.12
	38	α Canis Minoris. .	E.	48.8	51.4	52.9	59.0	1.0	3.0	9.2	10.7	13.3	33 1.03	+ 0.34	−32.47	−32.61	7 32 28.76	− 0.28
	39	β Geminorum . .	E.	. .	. .	48.3	50.5	52.9	55.2	57.6	. .	. .	37 52.91	+ 0.10	−32.45	−32.61	7 37 20.40	− 0.19
	40	α Ursæ Majoris, (R.)	N.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	41	Polaris	E.	. .	. .	23.5	48.0	12.5	36.5	1.0	. .	. .	12 12.62	−19.94	. .	−32.78	1 12 19.90	. .
	42	β Arietis	E.	47.5	50.1	51.8	58.2	0.4	2.6	9.1	10.7	13.5	48 0.43	+ 0.21	−32.73	−32.79	1 48 27.85	− 0.04
	43	α Arietis	E.	10.3	13.2	14.9	21.4	23.7	25.9	32.5	34.1	36.8	0 23.64	+ 0.18	−32.76	−32.80	1 59 51.02	− 0.03
	44	η Tauri	F.	4.5	7.2	9.0	15.5	17.8	20.1	26.7	28.4	31.1	40 17.81	+ 0.09	−32.73	−32.75	3 39 45.15	− 0.02
	45	Venus II, N. . .	F.	32.7	35.4	37.1	43.4	45.6	47.7	54.2	55.8	58.6	46 45.61	+ 0.13	. .	−32.75	3 46 12.99	− 0.53
	46	Venus, S. C. . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	47	α Tauri, (R.) . . .	N.	. .	. .	. .	46.6	59.4	12.0	. .	. .	. .	28 59.33	+ 0.34	. .	−32.76	4 28 26.91	− 0.28
	48	Mercury II, N. .	F.	42.7	45.7	47.3	53.7	56.0	58.2	4.6	6.5	9.0	0 55.97	+ 0.12	. .	−32.76	5 0 23.33	− 0.29
	49	β Orionis . . .	F.	36.7	39.2	40.9	47.0	49.0	51.0	57.1	58.8	1.7	8 48.99	+ 0.31	−32.65	−32.76	5 8 16.54	− 0.12
	50	β Tauri	F.	22.6	25.4	27.2	34.1	36.5	38.7	45.8	47.4	50.4	18 36.46	+ 0.05	−32.81	−32.76	5 18 3.75	+ 0.03

14. Telescope micrometer reading diminished by five revolutions.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	64 56	19.0	20.5	3.0	4.0	25	. .	298	. .	250	. .	69.3	65 0 11.6	. .	+ 1 58.0	116 8 30.8	+ 2.2
2	49 6	20.0	20.6	4.0	3.8	23	. .	. .	. .	. .	310	69.3	49 10 39.9	. .	+ 1 4.0	100 18 5.1	+ 2.4
3	359 40	25.2	25.8	8.7	8.5	28	. .	560	. .	490	. .	69.3	359 43 16.9	. .	— 0.3	50 49 37.8	+ 2.4
4	285 0	22.2	22.2	4.8	6.0	25	. .	070	. .	130	. .	69.3	285 3 56.9	. .	— 3 22.4	336 6 55.7	+ 1.7
5	29 14	23.8	24.0	6.8	7.0	24	. .	595	. .	510	. .	69.3	29 18 19.1	. .	+ 31.1	80 25 11.4	+ 2.0
6	5 4	22.0	21.7	5.0	4.0	26	. .	130	. .	022	. .	69.3	5 7 58.2	. .	+ 4.9	56 14 24.3	+ 1.6
7	24 16	23.2	23.7	6.9	5.6	23	. .	130	. .	015	. .	69.3	24 20 42.3	. .	+ 25.1	75 27 28.6	+ 0.3
8	62 50	22.7	23.7	7.9	6.9	21	. .	718	. .	675	. .	69.3	62 55 2.6	. .	+ 1 48.1	114 3 11.9	+ 5.0
9	293 48	22.8	24.0	6.0	7.5	23	. .	015	. .	950	. .	69.3	293 52 43.3	. .	— 2 4.7	344 56 59.8	+ 1.9
10	26 10	26.9	28.2	10.7	9.3	26	. .	680	. .	642	. .	69.3	26 13 43.5	. .	+ 27.4	77 20 32.1	+ 1.8
11	60 52	21.7	22.7	6.3	7.3	21	060	. .	. .	. .	955	69.3	60 56 58.5	. .	+ 1 39.9	112 4 59.6	
12	60 52	21.7	22.7	6.3	7.3	20	. .	795	. .	695	. .	69.3	60 57 17.9	. .	+ 1 39.9	112 5 19.0	
13	11 2	24.5	24.3	8.5	8.3	27	. .	785	. .	769	. .	69.3	11 5 28.9	. .	+ 10.9	62 12 1.0	+ 1.3
14	59 52	23.0	24.0	8.3	7.3	20	. .	190	. .	120	. .	69.3	59 57 25.8	. .	+ 1 35.8	111 5 22.8	+ 3.1
15	312 14	23.7	23.4	6.4	6.8	24	810	815	800	820	800	69.3	312 18 15.5	. .	— 1 1.2	3 23 35.5	+ 0.9
16	47 8	19.2	20.3	4.2	4.0	24	. .	000	. .	965	. .	69.3	47 12 31.1	. .	+ 1 0.2	98 19 52.5	+ 1.1
17	306 06	21.5	21.5	5.4	5.4	28	940	910	880	888	950	69.3	306 9 14.2	. .	— 1 16.2	357 14 19.2	— 0.9
18	5 36	22.3	22.8	6.0	4.4	23	. .	180	. .	095	. .	69.3	5 40 42.4	. .	+ 5.6	56 47 9.2	+ 0.6
19																	
20	18 38	22.2	24.2	7.0	5.7	21	380	. .	. .	. .	308	68.8	18 43 8.5	. .	+ 18.7	69 49 48.4	+ 2.0
21	15 58	21.5	23.0	6.1	4.7	23	272	210	. .	148	052	68.8	16 2 41.5	. .	+ 15.8	67 9 18.5	+ 0.9
22	. .	5.4	7.0	19.3	21.4	25	. .	462	. .	. .	. .	68.8	21 46 7.3	. .	+ 21.8	72 52 50.3	
23	. .	5.4	7.0	19.3	21.4	26	. .	. .	. .	606	. .	68.8	21 45 48.6	. .	+ 21.8	72 52 31.6	
24	22 34	18.2	18.6	1.8	1.9	23	773	. .	. .	. .	675	68.8	22 38 36.8	. .	+ 22.7	73 45 20.7	+ 1.5
25																	
26	15 14	11.4	11.3	24.3	25.1	26	. .	. .	. .	620	592	68.8	15 17 58.7	. .	+ 14.7	66 24 34.6	
27	33 16	21.9	24.4	7.5	4.9	26	750	. .	. .	. .	640	68.8	33 19 46.6	. .	+ 35.3	84 26 43.1	+ 0.9
28	35 14	18.9	22.5	4.8	4.3	24	. .	640	. .	615	. .	68.4	35 18 19.8	. .	+ 38.3	86 25 19.3	+ 0.3
29	349 26	20.2	22.0	6.2	4.1	25	. .	. .	. .	005	995	68.4	349 30 13.2	. .	— 10.6	40 36 24.4	— 1.8
30																	
31	15 8	22.9	26.0	7.9	6.0	27	. .	985	. .	930	. .	68.4	15 11 25.9	. .	+ 14.7	66 18 1.8	— 0.1
32	22 34	21.7	24.9	6.2	5.4	23	. .	436	. .	375	. .	68.4	22 38 36.6	. .	+ 22.5	73 45 20.3	+ 1.2
33	19 28	21.6	24.0	6.5	5.6	27	. .	095	. .	950	. .	68.4	19 31 26.2	. .	+ 19.1	70 38 6.5	
34	352 58	20.5	22.8	6.5	4.2	25	. .	360	. .	275	. .	68.4	353 2 8.7	. .	— 6.6	44 82 3.3	+ 1.2
35	15 48	10 14.0	15.4	27.5	27.9	25	815	790	. .	. .	. .	68.4	15 52 9.7	. .	+ 15.3	66 58 46.2	
36	15 16	10 14.6	16.4	28.4	29.0	23	. .	. . .	. .	735	720	68.4	15 20 38.1	. .	+ 14.7	66 27 14.0	
37	6 40	10 27.4	29.5	11.8	11.5	28	. .	195	. .	105	. .	68.4	6 43 18.7	. .	+ 6.3	57 49 46.2	+ 0.5
38	33 16	25.8	29.7	11.5	11.1	26	. .	308	. .	265	. .	68.4	33 19 47.6	. .	+ 35.3	84 26 44.1	+ 2.0
39	10 30	24.6	27.1	9.0	8.2	28	. .	619	. .	572	. .	68.4	10 33 14.6	. .	+ 10.0	61 39 45.8	+ 1.5
40	203 30	26.1	0.4	11.9	10.5	27	161	206	178	109	988	68.4	203 33 19.1	. .	+ 23.1	27 32 39.0	— 0.8
41	310 14	10 19.6	21.0	4.3	3.9	25	895	850	880	853	910	69.7	310 18 2.6	. .	— 1 4.7	1 23 19.1	— 0.2
42	18 38	20.3	24.7	6.8	4.7	21	520	518	. .	438	432	69.7	18 43 7.9	. .	+ 18.5	69 49 47.6	+ 1.5
43	15 58	21.6	24.3	6.3	5.3	23	. .	255	. .	190	. .	69.7	16 2 41.0	. .	+ 15.7	67 9 17.9	+ 0.6
44	15 8	10 13.1	16.3	28.3	28.0	28	. .	674	. .	648	. .	67.9	15 11 23.9	. .	+ 14.7	66 17 59.8	— 2.0
45	21 8	10 10.2	13.1	24.5	24.6	26	672	. .	. .	. . .	558	67.9	21 11 58.7	. .	+ 20.9	72 18 40.8	
46	21 8	10.2	13.1	24.5	24.6	25	. .	626	. .	568	. .	67.9	21 12 14.1	. .	+ 20.9	72 18 56.2	
47	157 18	10 16.2	18.3	1.2	1.5	28	640	590	. .	495	506	67.9	157 21 22.4	. .	— 22.4	73 45 21.7	+ 2.2
48	19 10	10 13.2	16.5	28.3	28.3	22	975	975	. .	998	948	67.9	19 15 6.3	. .	+ 18.7	70 21 46.2	
49	47 10	10 12.2	16.2	27.5	28.9	26	710	680	. .	642	632	67.9	47 13 54.5	. .	+ 57.8	98 21 13.5	— 1.0
50	10 20	9.5	13.9	25.3	25.5	26	. .	932	. .	854	. .	67.9	10 23 53.9	. .	+ 9.8	61 30 24.9	+ 1.4

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
13	. .	. .	74.0
18	30.070	78.0	72.5
21	. .	. .	81.6
22	30.120	79.5	85.9
23	30.128	80.0	86.3
24	. .	. .	88.2
26	30.100	82.6	92.8
27	30.090	83.8	94.3
31	30.014	82.0	88.0
36	30.000	86.0	
40	. .	. .	96.3
42	29.904	78.5	81.0
44	29.916	81.5	88.0
47	. .	. .	89.5
49	29.918	84.0	92.1

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
11	— 0.9	+ 9.7	. .	+ 8.8
12	— 0.9	— 9.7	. .	— 10.6
22	— 3.0	— 9.5	+ 0.3	— 12.2
23	— 3.0	+ 9.5	. .	+ 6.5
26	— 2.3	+ 15 41.5	. .	+ 15 42.8
33	— 3.5	+ 2.5	. .	+ 1.0
35	— 2.3	— 15 46.1	. .	— 15 48.4
36	— 2.3	+ 15 46.1	. .	+ 15 43.8
45	— 2.8	+ 7.8	. .	+ 5.0
46	— 2.8	— 7.8	+ 0.2	— 10.4
48	— 3.4	+ 3.9	. .	+ 0.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 28	1	δ Orionis	F.	. .	. .	49.6	51.6	53.6	55.6	57.6	. .	. .	25 53.60	+ 0.26	−32.70	−32.76	5 25 21.10	− 0.09
	2	ε Orionis	F.	56.6	59.2	0.7	4.7	6.7	. .	. .	. .	. .	30 8.82	+ 0.26	−32.82	−32.76	5 29 36.2	+ 0.05
29	3	Sun I, S.	F.	37.6	40.4	42.2	49.0	51.1	53.2	0.0	1.6	4.3	51.04	+ 0.09	. .	−32.77	6 32 18.36	. .
	4	Sun II, N.	F.	55.3	58.1	59.8	6.3	8.7	10.9	17.5	19.3	22.0	35 8.66	+ 0.09	. .	−32.77	6 34 35.98	. .
	5	α Canis Minoris	F.	49.0	51.7	53.3	59.4	1.4	3.5	9.6	11.2	13.7	33 1.42	+ 0.22	−32.74	−32.78	7 32 28.86	− 0.18
	6	β Geminorum	F.	39.5	42.3	44.1	51.0	53.3	55.6	2.5	4.5	7.3	37 53.34	+ 0.06	−32.83	−32.78	7 37 20.62	+ 0.02
	7	β Ceti	F.	. .	. .	32.7	34.7	36.9	39.0	41.2	. .	. .	37 36.91	+ 0.32	−33.02	−32.95	0 37 4.28	+ 0.12
	8	Polaris	F.	. .	. .	20.5	45.5	9.5	33.0	57.5	. .	. .	12 9.72	−15.75	. .	−32.95	1 11 21.02	. .
	9	Polaris	S.	. .	. .	. .	. .	. .	. .	45.5	58.5	34.0	12 8.81	−13.11	. .	−32.73	1 11 22.97	+ 1.98
	10	α Arietis	S.	10.8	13.4	15.2	21.6	23.9	26.1	32.9	34.4	37.1	0 23.93	+ 0.07	−32.91	−32.75	1 59 51.25	+ 0.13
	11	Venus II	S.	14.3	16.9	18.6	25.0	27.0	29.4	35.7	37.3	40.0	51 27.13	+ 0.11	. .	−32.79	3 50 54.45	− 0.53
30	12	Sun I, N.	S.	46.6	49.5	51.1	57.6	0.0	2.0	8.8	10.5	13.5	36 59.96	+ 0.07	. .	−32.84	6 36 27.19	. .
	13	Sun II, S.	S.	. .	. .	. .	15.3	17.5	19.5	26.3	29.9	30.6	39 15.29	+ 0.07	. .	−32.84	6 38 42.52	. .
	14	α Canis Minoris	S.	49.3	51.9	53.6	59.6	1.7	3.7	9.8	11.4	14.0	33 1.67	+ 0.20	−32.96	−32.86	7 32 29.01	− 0.04
	15	Polaris, S. P.	S.	. .	. .	26.5	1.0	36.5	12.0	47.0	. .	. .	11 36.08	+15.49	. .	−32.98	1 11 18.59	− 2.79
	16	ζ Virginis	S.	25.6	28.2	29.7	35.9	37.9	39.8	46.0	47.6	50.0	28 37.86	+ 0.18	−32.94	−32.99	13 28 5.05	− 0.05
	17	η Bootis	S.	50.5	53.2	54.9	59.2	1.4	3.4	. .	. .	. .	49 3.58	+ 0.05	−33.05	−32.99	13 48 30.64	+ 0.01
	18	α Draconis	S.	. .	. .	17.3	22.2	. .	. .	46.3	50.0	55.7	1 26.96	− 0.64	. .	−33.00	14 0 53.32	0.00
	19	α Bootis	S.	5.0	7.7	9.4	15.7	17.9	20.0	26.6	28.3	30.8	10 17.93	+ 0.04	−33.04	−33.00	14 9 44.97	+ 0.04
	20	5 Ursæ Minoris	S.	34.6	45.3	51.7	17.8	26.2	34.7	1.0	7.0	18.0	28 26.26	− 1.37	. .	−33.01	14 27 51.88	+ 0.12
	21	ε Bootis	S.	42.0	43.7	48.2	50.5	52.8	55.0	57.3	2.0	3.6	39 52.79	− 0.02	−33.01	−33.01	14 39 19.76	− 0.02
	22	β Libræ	S.	22.7	25.1	26.7	32.8	35.0	37.1	43.3	41.9	47.3	10 34.99	+ 0.25	−32.94	−33.02	15 10 2.22	− 0.08
	23	μ Bootis	S.	53.6	57.0	59.0	6.8	9.3	11.9	19.7	21.5	24.9	20 9.30	− 0.11	−32.95	−33.03	15 19 36.16	− 0.09
	24	α Coronæ Borealis	S.	31.8	34.6	36.4	43.3	45.5	47.9	54.8	56.3	59.4	29 45.56	− 0.02	−33.04	−33.03	15 29 12.51	+ 0.01
	25	α Serpentis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. . .	. .	. .	. . . .	. .
	26	ε Coronæ Borealis	S.	33.4	36.0	37.8	44.5	47.0	49.1	56.1	57.9	0.8	52 46.96	− 0.02	. .	−33.04	15 52 13.90	− 0.09
	27	δ Ophiuchi	S.	54.4	57.0	58.5	4.6	6.6	8.5	14.6	16.3	18.7	8 6.58	+ 0.21	−33.04	−33.04	16 7 33.75	+ 0.02
	28	τ Herculis	S.	11.3	13.5	19.3	22.2	25.0	28.1	31.1	37.1	39.3	16 25.21	− 0.22	. .	−33.04	16 15 51.95	+ 0.18
	29	A Draconis	S.	. .	. .	40.1	45.8	51.6	57.6	3.0	. .	. .	28 51.65	− 0.81	. .	−33.05	16 28 17.79	− 0.14
	30	η Herculis	S.	45.4	48.9	50.9	58.9	1.4	11.8	13.9	17.0	. .	39 1.37	− 0.13	−33.00	−33.05	16 38 28.19	− 0.04
	31	d Herculis	S.	8.8	11.9	13.9	21.2	23.4	25.9	33.2	35.0	38.1	57 23.49	− 0.08	. .	−33.06	16 56 50.35	+ 0.22
	32	α^1 Herculis	S.	5.3	8.0	9.7	15.9	18.0	20.0	26.3	28.0	30.6	9 17.98	+ 0.08	−33.04	−33.06	17 8 45.00	0.00
	33	Saturn I, N.	S.	15.5	18.0	19.9	. .	. .	. .	37.5	39.1	42.0	35 28.66	+ 0.34	. .	−33.07	17 34 55.93	. .
	34	Saturn II, S.	S.	. .	. .	25.5	27.8	30.0	32.0	34.1	. .	. .	35 29.89	+ 0.34	. .	−33.07	17 34 57.16	. .
	35	δ Ursæ Minoris	S.	48.0	30.5	6.0	40.0	13.5	48.5	23.0	32.0	57.5	15 14.12	− 6.15	. .	−33.09	18 14 34.88	− 1.04
	36	I Aquilæ	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	37	51 Cephei, S. P.	S.	. .	. .	9.5	26.5	44.0	3.0	21.0	. .	. .	38 44.58	+ 7.92	. .	−33.09	6 38 19.41	− 0.09
	38	δ Persei	E.	. .	. .	7.9	11.0	13.9	17.0	20.0	. .	. .	34 13.98	− 0.12	. .	−33.51	3 33 40.35	+ 0.27
	39	η Tauri	E.	. .	. .	14.2	16.4	18.6	20.8	23.0	. .	. .	40 18.61	+ 0.10	−33.48	−33.51	3 39 45.20	− 0.02
	40	ζ Persei	E.	19.5	21.5	26.3	28.5	30.9	33.3	35.6	40.4	42.4	46 30.93	+ 0.04	−33.53	−33.52	3 45 57.46	+ 0.01

2. Transits observed over wires B_1–C_2.
13. Transits observed over wires C_3–D_3.
20. Bisections at wires B_1, C_1, C_5, and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	39 12	10 13.7	17.8	29.0	0.0	23	. .	. .	. .	985	. .	67.9	39 16 48.5	. .	+ 43.6	90 23 53.3	— 0.2
2	40 6	18.0	20.5	3.4	2.3	25	. .	380	. .	. .	. .	67.9	40 10 10.0	. .	+ 45.0	91 17 16.2	+ 0.6
3	15 50	26.1	29.5	11.2	8.5	20	552	486	. .	. .	. .	67.9	15 55 17.2	. .	+ 15.1	67 1 53.5	
4	15 20	25.5	28.5	9.4	8.3	26	. .	. .	. .	494	462	67.9	15 23 44.8	. .	+ 14.6	66 30 20.6	
5	33 16	10 18.1	20.7	1.8	1.7	26	. .	. .	. .	890	868	67.9	33 19 45.9	. .	+ 35.1	84 26 42.2	+ 0.2
6	10 30	14.9	18.5	0.5	29.5	29	. .	310	. .	150	. .	67.9	10 33 13.3	. .	+ 9.9	61 39 44.4	+ 0.1
7	57 30	10.1	13.1	25.2	26.1	26	. .	320	. .	. .	. .	68.2	57 34 3.5	. .	+ 1 26.7	108 41 51.4	+ 0.3
8	310 14	10 13.2	15.5	28.3	29.1	26	200	150	150	150	145	68.2	310 18 2.5	. .	— 1 4.9	1 23 18.8	+ 0.4
9																	
10	15 58	27.2	30.0	12.1	16.7	22	. .	. .	. .	696	. .	68.2	16 2 40.7	. .	+ 15.8	67 9 17.7	+ 0.5
11																	
12	15 22	23.0	25.0	7.3	7.8	20	840	730	. .	. .	. .	68.4	15 27 16.7	. .	+ 14.7	66 33 52.6	
13	15 54	23.5	28.0	8.5	7.3												
14																	
15	307 28	23.5	25.2	6.4	7.5	27	660	714	720	690	640	69.3	307 31 30.6	. .	— 1 9.3	358 36 42.5	+ 1.7
16	38 44	27.0	28.5	. .	9.0	22	. .	570	. .	490	. .	69.3	38 48 46.9	. .	+ 43.1	89 55 51.2	+ 2.4
17																	
18																	
19	18 58	27.9	29.0	11.1	9.8	27	. .	038	. .	928	. .	69.3	19 1 37.9	. .	+ 18.6	70 8 17.7	+ 1.6
20	322 34	25.7	25.6	7.7	8.1	27	312	382	. .	212	176	69.3	322 37 36.7	. .	— 41.3	13 43 16.6	— 1.8
21																	
22																	
23	1 0	27.8	27.5	9.2	8.2	27	. .	. .	. .	990	045	69.3	1 3 22.5	. .	+ 1.0	52 9 44.7	— 0.1
24																	
25	31 58	26.5	27.5	9.0	8.3	22	. .	285	. .	245	. .	69.3	32 2 51.6	. .	+ 34.0	83 9 46.8	+ 2.6
26	11 34	27.5	28.5	10.5	9.1	25	. .	782	. .	672	. .	69.3	11 37 57.8	. .	+ 11.2	62 44 30.2	+ 1.0
27	42 10	27.4	28.1	10.0	10.1	24	. .	. .	. .	. .	476	69.3	42 14 15.3	. .	+ 49.3	93 21 25.8	+ 2.0
28	352 12	28.3	28.7	11.2	9.4	24	. .	. .	. .	890	. .	69.3	352 16 9.3	. .	— 7.4	43 22 23.1	+ 0.9
29																	
30	359 40	28.4	29.2	11.8	9.6	28	. .	510	. .	418	. .	69.3	359 43 15.1	. .	— 0.3	50 49 36.0	+ 1.8
31	5 4	23.8	24.2	6.8	4.1	26	. .	. .	. .	000	. .	69.3	5 7 56.9	. .	+ 4.9	56 14 23.0	+ 1.5
32	24 16	25.3	26.1	8.1	7.3	22	. .	876	. .	848	. .	69.3	24 20 44.3	. .	+ 24.6	75 27 30.1	+ 2.7
33	60 52	22.3	22.6	5.6	5.2	23	500	. .	. .	. .	438	69.3	60 56 36.7	. .	+ 1 37.6	112 4 35.5	
34	60 52	22.3	22.6	5.6	5.2	22	. .	066	. .	038	. .	69.3	60 56 58.5	. .	+ 1 37.6	112 4 57.3	
35	312 14	25.3	25.4	7.8	7.2	24	020	998	960	882	948	69.3	312 18 11.8	. .	— 59.8	3 23 33.2	+ 0.1
36	47 8	27.3	28.1	10.4	10.7	23	. .	490	. .	378	. .	69.3	47 12 32.4	. .	+ 58.8	98 19 52.4	+ 1.4
37																	
38	351 28	19.3	21.2	4.7	3.8	26	. .	. .	810	. .	800	68.2	351 31 46.7	. .	— 8.0	42 37 59.9	— 2.0
39	15 8	22.8	26.5	7.7	6.8	27	. .	. .	970	. .	950	68.2	15 11 25.3	. .	+ 14.5	66 18 1.0	— 0.6
40	7 20	23.8	26.2	8.8	6.2	26	060	038	. .	940	940	68.2	7 23 55.3	. .	+ 7.0	58 30 23.5	— 0.8

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	94.2
3	29.910	85.5	97.0
6	. .	. .	94.2
7	29.870	77.2	74.5
10	29.868	78.0	79.2
11	29.862	81.0	
13	29.840	84.0	93.3
14	. .	. .	94.2
15	29.756	85.0	91.0
16	. .	. .	88.7
17	29.753	85.0	85.8
18	. .	. .	84.2
19	29.750	84.8	84.0
20	. .	. .	83.8
21	29.760	. .	84.0
25	29.760	83.7	81.5
26	. .	. .	81.3
27	. .	. .	81.0
28	. .	. .	81.0
31	. .	. .	80.9
32	29.755	82.4	80.4
33	. .	. .	80.0
34	. .	. .	80.2
35	. .	. .	79.4
36	. .	. .	79.2
37	. .	. .	79.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	— 2.4	— 15 46.4	. .	— 15 48.8
4	— 2.3	+ 15 46.4	. .	+ 15 44.1
12	— 2.3	+ 15 45.1	. .	+ 15 42.8
33	— 0.9	+ 10.9	. .	+ 10.0
34	— 0.9	— 10.9	. .	— 11.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
June 30	1	Venus II, S. C.	E.	57.4	0.0	1.6	8.0	10.2	12.3	18.9	20.4	23.0	56 10.20	+ 0.14	. .	−33.52	3 55 36.82	− 0.53
	2	Venus N.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	3	α Tauri	E.	47.8	50.5	52.1	58.4	0.5	2.7	9.0	10.7	13.4	29 0.56	+ 0.15	−33.49	−33.53	4 28 27.18	+ 0.06
	4	ι Aurigæ	E.	50.0	53.0	55.0	2.2	4.7	7.0	14.3	16.3	19.3	49 4.64	+ 0.02	−33.58	−33.53	4 48 31.13	+ 0.01
July 1	5	Sun I, S.	E.	55.7	58.4	0.0	6.8	8.9	11.2	18.0	19.5	22.4	41 8.98	+ 0.10	. .	−33.57	6 40 35.51	. .
	6	Sun II, N.	E.	13.0	15.9	17.6	24.3	26.5	28.6	35.2	36.9	39.7	43 26.41	+ 0.10	. .	−33.57	6 42 52.94	. .
5	7	Moon I, N.	F.	26.0	28.7	30.2	36.5	38.5	40.6	46.9	48.5	51.1	46 38.56	− 0.03	. .	−34.58	12 46 3.95	+66.95
	8	θ Virginis	F.	36.4	38.9	40.5	46.5	48.5	50.6	56.7	58.3	0.9	3 48.59	− 0.01	−34.64	−34.59	13 3 13.99	+ 0.01
	9	Polaris, S. P.	F.	. .	. .	46.0	21.5	57.0	33.5	9.0	. .	. .	11 56.88	+ 2.84	. .	−34.59	1 11 25.11	. .
	10	α Virginis	F.	43.7	46.4	48.4	54.2	56.4	58.3	4.5	6.1	8.8	18 56.24	0.00	−34.59	−34.59	13 18 21.65	− 0.01
	11	ζ Virginis	F.	27.3	29.9	31.5	37.6	39.6	41.7	47.8	49.3	51.9	28 39.62	− 0.02	−34.56	−34.59	13 28 5.01	− 0.03
	12	η Ursæ Majoris	F.	41.3	45.2	47.6	57.1	0.4	3.6	13.1	15.3	19.4	43 0.33	− 0.15	. .	−34.59	13 42 25.59	− 0.08
	13	η Bootis	F.	52.2	54.9	56.5	3.0	5.2	7.3	13.8	15.5	18.1	49 5.17	− 0.07	−34.57	−34.59	13 48 30.51	− 0.07
	14	α Draconis	F.	59.0	5.0	8.4	22.6	27.9	32.6	47.1	50.8	56.5	1 27.77	− 0.23	. .	−34.59	14 0 52.95	− 0.17
	15	α Bootis	F.	6.5	9.2	10.9	17.3	19.5	21.7	28.2	29.9	32.5	10 19.52	− 0.07	−34.58	−34.60	14 9 44.85	− 0.02
	16	ι Cassiopeæ, S. P.	F.	. .	. .	8.5	3.3	58.1	52.9	47.6	. .	. .	18 58.11	+ 0.07	. .	−34.60	2 18 23.58	− 0.08
	17	θ Bootis	F.	2.0	6.2	8.6	18.7	21.9	25.4	35.4	38.0	42.1	21 22.03	− 0.16	. .	−34.60	14 20 47.27	+ 0.04
	18	5 Ursæ Minoris	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
7	19	Venus II, N.	F.	29.6	32.4	34.0	40.4	42.6	44.7	51.4	53.0	55.7	29 42.64	− 0.08	. .	−35.17	4 29 73.9	− 0.52
8	20	Sun I, N.	F.	47.6	50.3	52.0	58.6	0.9	3.0	9.7	11.3	14.2	10 0.84	− 0.09	. .	−35.19	7 9 25.56	. .
	21	Sun II, S.	F.	4.2	7.1	8.8	15.5	17.7	19.8	26.5	28.1	31.0	12 17.63	− 0.09	. .	−35.19	7 11 42.35	. .
	22	α Leonis	F.	49.1	51.7	53.3	59.5	1.7	3.8	10.6	11.6	14.0	2 1.63	− 0.07	−35.14	−35.21	10 1 26.35	− 0.11
	23	γ^1 Leonis	F.	10.0	12.6	14.4	20.8	23.0	25.2	31.6	33.3	36.0	13 22.99	− 0.08	−35.17	−35.21	10 12 47.70	− 0.06
	24	Moon I, N.	F.	38.2	41.0	42.5	49.3	51.4	53.6	0.1	1.6	4.5	34 51.36	− 0.01	. .	−35.26	15 34 16.09	+70.24
	25	ε Serpentis	F.	44.8	47.3	48.9	55.0	57.0	59.0	5.1	6.8	9.3	44 57.02	− 0.05	−35.23	−35.26	15 44 21.71	− 0.03
	26	β^1 Scorpii	F.	16.8	19.4	21.2	27.5	29.7	31.8	38.5	40.1	42.7	58 29.74	0.00	−35.12	−35.26	15 57 54.48	− 0.11
	27	τ Herculis, (R.)	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	28	A Draconis	F.	18.9	26.2	30.7	47.6	53.4	58.9	16.1	20.2	27.5	28 53.28	− 0.30	. .	−35.27	16 28 17.71	+ 0.05
	29	Saturn I, N.	F.	58.4	1.0	2.7	. .	. .	. .	20.9	22.0	24.9	33 11.95	+ 0.01	. .	−35.28	17 32 36.68	. .
	30	Saturn II, S.	F.	. .	. .	8.6	10.6	12.8	15.4	17.5	. .	. .	33 12.99	+ 0.01	. .	−35.28	17 32 37.72	. .
	31	ψ^1 Draconis	F.	. .	. .	41.7	48.6	55.6	2.2	8.3	. .	. .	44 55.32	− 0.36	. .	−35.28	17 44 19.68	+ 0.48
	32	γ Draconis	F.	53.4	57.5	0.1	9.6	13.2	16.5	26.0	28.5	32.6	54 13.04	− 0.17	. .	−35.28	17 53 37.59	− 0.17
	33	γ^2 Sagittarii	F.	50.8	54.0	55.6	2.7	5.0	7.6	14.5	16.2	19.2	58 5.07	+ 0.03	−35.32	−35.28	17 57 29.82	+ 0.05
	34	δ Ursæ Minoris	F.	. .	. .	4.0	37.5	12.5	47.0	20.5	. .	. .	15 12.48	− 1.65	. .	−35.28	18 14 35.55	+ 0.50
	35	51 Cephei, S. P.	F.	. .	. .	19.0	37.0	54.5	12.0	29.5	. .	. .	38 54.38	+ 1.88	. .	−35.29	6 38 20.97	+ 0.61
	36	Euterpe	F.	19.7	22.3	24.0	30.7	32.9	35.1	41.8	43.5	46.0	32.84	+ 0.01	. .	−35.29	18 46 57.56	. .
	37	κ Aquilæ	F.	19.0	21.5	23.1	29.1	31.2	33.2	39.3	41.0	43.4	30 31.20	− 0.03	−35.35	−35.29	19 29 55.88	+ 0.10
	38	γ Aquilæ	F.	29.8	32.4	33.9	40.0	42.1	44.1	50.3	52.0	54.5	40 42.12	− 0.06	−35.33	−35.29	19 40 6.77	+ 0.07
	39	α Aquilæ	F.	51.4	54.0	55.5	1.8	3.8	5.9	12.0	13.6	16.2	45 3.80	− 0.06	−35.33	−35.29	19 44 28.45	+ 0.08
	40	β Aquilæ	F.	20.7	23.3	24.8	30.9	33.0	35.0	41.1	42.6	45.3	49 32.97	− 0.05	−35.32	−35.29	19 48 57.63	+ 0.06
	41	τ Aquilæ	F.	12.3	15.0	16.6	22.7	24.8	26.8	32.9	34.3	37.1	58 24.72	− 0.05	−35.37	−35.30	19 57 49.37	+ 0.09
	42	3 Ursæ Majoris, S.P.	F.	. .	. .	34.5	28.6	22.9	16.8	11.3	. .	. .	0 22.85	+ 0.18	. .	−35.30	7 59 47.73	− 0.23
	43	Venus II, N.	S.	21.7	24.3	26.2	32.5	34.7	36.9	43.4	45.0	47.7	34 34.71	− 0.08	. .	−35.32	4 33 59.31	− 0.51
	44	Venus S.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	45	β Orionis	S.	39.7	42.4	44.0	50.0	52.1	54.2	0.3	2.0	4.3	8 52.11	+ 0.01	−35.28	−35.32	5 8 16.80	− 0.05

29, 30, 33, 43. Very much blurred.
31, 42. Bisections at sets B and D.
36. Wire A used.
July 7.9. Found one of the declination wires bent.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° '	r. "	"	"	"							"	° ' "		' "	° ' "	"
1	20 36	21.8	24.2	6.0	5.0	26	368	. .	. .	. .	270	68.2	20 39 52.3	. .	+ 20.2	71 46 33.7	
2	20 36	21.8	24.2	6.0	5.0	27	. .	310	. .	182	. .	68.2	20 39 38.1	. .	+ 20.2	71 46 19.5	
3	22 34	25.1	27.8	10.5	8.8	23	240	212	. .	095	080	68.2	22 38 36.7	. .	+ 22.3	83 45 20.2	+ 1.4
4	5 52	22.3	23.7	6.8	5.0	24	. .	940	. .	880	. .	68.2	5 56 13.6	. .	+ 5.6	57 2 40.4	+ 1.7
5	15 58	13.3	15.0	27.9	27.2	23	662	630	. .	. .	. .	68.2	16 2 42.8	. .	+ 15.4	67 9 19.4	
6	15 26	9.6	12.0	24.1	24.1	21	. .	. .	. .	969	863	68.2	15 31 10.2	. .	+ 14.8	66 37 46.2	
7	38 32	10 19.5	20.6	5.8	5.2	20	290	050	. .	960	932	66.8	38 37 27.8	. .	+ 43.3	89 44 32.3	
8	43 40	10 2.4	4.3	17.8	20.5	28	952	898	. .	836	820	66.8	43 43 29.5	. .	+ 51.9	94 50 42.6	+ 1.3
9	307 28	10 0.1	2.0	15.6	19.6	28	. .	860	882	898	942	66.8	307 31 31.1	. .	− 1 10.6	358 36 41.7	+ 0.8
10	49 18	10 5.9	8.1	22.7	23.3	28	328	324	. .	270	234	66.8	49 21 34.7	. .	+ 1 3.2	100 28 59.1	+ 0.7
11	38 44	10 9.0	10.9	25.8	25.7	23	. .	428	. .	402	. .	66.8	38 48 46.5	. .	+ 43.7	89 55 51.4	+ 2.9
12	348 52	10 10.3	11.0	26.7	27.2	27	. .	. .	. .	150	130	66.8	348 55 48.1	. .	− 10.7	40 1 58.6	− 0.5
13	19 46	6.6	9.7	23.4	23.4	25	. .	. .	. .	742	732	66.8	19 50 12.1	. .	+ 19.7	70 56 53.0	+ 1.6
14	333 50	10 6.4	6.3	20.6	21.1	27	. .	. .	. .	000	020	66.8	333 53 55.8	. .	− 26.9	24 59 50.1	− 2.8
15	18 58	7.3	8.5	22.2	23.0	28	400	190	. .	110	110	66.8	19 1 36.1	. .	+ 18.9	70 8 16.2	+ 0.6
16	285 42	6.6	6.3	20.0	23.0	28	. .	595	. .	685	. .	66.8	285 45 30.4	. .	− 3 12.7	336 48 38.9	− 1.5
17	346 22	10 16.0	14.8	28.3	28.7	24	. .	382	. .	330	. .	66.8	346 26 28.4	. .	− 13.3	37 32 36.3	+ 0.5
18	322 34	10 12.6	12.3	26.3	27.5	.	. .	942	. .	880	. .	66.8	322 37 36.1	. .	− 42.0	13 43 15.3	− 2.7
19	18 56	15.2	14.7	29.3	26.8	29	. .	. .	. .	340	370	65.6	18 59 9.6	. .	+ 19.0	70 5 49.8	
20	16 4	15.5	15.1	29.4	28.0	19	022	060	. .	. .	. .	65.6	16 9 49.3	. .	+ 16.0	67 16 26.5	
21	16 36	14.9	15.8	29.4	28.3	21	. .	. .	. .	906	934	65.6	16 41 18.0	. .	+ 16.6	67 47 55.8	
22	26 12	15.4	16.9	29.3	29.3	21	. .	884	. .	762	. .	65.6	26 17 4.8	. .	+ 26.9	77 23 52.9	− 0.5
23	18 20	10 11.2	13.5	26.5	25.9	28	880	832	. .	628	620	65.6	18 23 22.6	. .	+ 18.1	69 30 1.9	− 1.7
24	54 16	13.6	13.8	28.0	28.2	30	092	918	806	622	554	68.0	54 18 51.6	. .	+ 1 17.3	105 26 30.1	
25	33 56	10 14.9	14.1	27.8	28.6	23	. .	. .	. .	498	506	68.0	34 0 41.8	. .	+ 37.5	85 7 40.5	+ 0.5
26	58 14	10 7.2	6.6	21.0	22.1	22	. .	780	. .	740	. .	68.0	58 19 1.2	. .	+ 1 29.8	109 26 52.2	+ 0.5
27	187 40	9.3	7.8	21.4	21.8	27	. .	062	. .	050	. .	68.0	187 43 54.4	. .	+ 7.5	43 22 19.3	− 1.1
28	329 46	7.3	6.6	20.2	21.2	22	. .	978	. .	938	. .	68.0	329 50 59.5	. .	− 32.4	20 56 48.3	+ 0.1
29	60 52	10 12.4	11.4	26.0	26.8	26	338	. .	. .	. .	154	68.0	60 56 2.9	. .	+ 1 40.3	112 4 4.4	
30	60 52	12.4	11.4	26.0	26.8	24	. .	846	. .	. .	. .	68.0	60 56 25.3	. .	+ 1 40.3	112 4 26.8	
31	326 38	10.0	9.1	23.3	24.1	29	. .	. .	. .	080	024	68.0	326 41 22.5	. .	− 36.8	17 47 6.9	0.0
32	347 20	13.0	12.4	26.4	26.6	28	. .	898	. .	822	. .	68.0	347 23 23.0	. .	− 12.5	38 29 31.7	− 0.5
33	69 12	10.3	9.0	22.7	25.4	24	. .	. .	. .	405	445	68.0	69 16 31.8	. .	+ 2 26.5	120 25 19.5	+ 0.4
34	312 14	10 3.3	2.2	16.0	17.6	26	382	380	300	300	304	68.0	312 18 11.2	. .	− 1 1.5	3 23 30.9	+ 0.2
35																	
36	62 12	10.1	9.3	24.6	25.9	31	. .	932	. .	952	. .	68.0	62 17 11.8	. .	+ 1 46.4	113 25 19.4	− 4.5
37	46 8	15.0	14.6	28.6	29.3	28	. .	630	. .	630	. .	68.0	46 11 23.8	. .	+ 58.7	97 18 43.7	+ 1.5
38	28 30	10 3.2	2.5	16.8	17.0	22	. .	708	. .	702	. .	68.0	28 35 7.5	. .	+ 30.1	79 41 58.8	− 0.1
39	30 18	8.2	8.9	22.4	22.5	29	. .	300	. .	200	. .	68.0	30 21 20.8	. .	+ 33.0	81 28 15.0	− 0.8
40	32 44	7.4	7.7	20.7	21.8	27	212	196	. .	122	100	68.0	32 47 54.4	. .	+ 36.4	83 54 52.0	+ 1.5
41	31 54	13.5	13.4	27.1	27.4	25	770	750	. .	. .	. .	68.0	31 58 10.5	. .	+ 35.3	83 5 7.0	+ 1.2
42	287 42	10 6.0	4.9	18.1	20.5	20	. .	176	. .	200	. .	68.0	287 47 42.3	. .	− 2 54.0	338 51 9.5	− 0.9
43	18 42	13.5	15.8	0.0	29.5	23	. .	. .	. .	. .	700	67.6	18 46 37.8	. .	+ 18.9	69 53 17.9	
44	18 42	13.5	15.8	0.0	29.5	22	. .	780	. .	740	. .	67.6	18 46 53.0	. .	+ 18.9	69 53 33.1	
45																	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	29.800	83.0	90.0
5	. .	. .	95.0
7	29.994	77.8	86.8
10	29.994	. .	85.6
13	. .	. .	82.5
15	30.008	77.0	80.8
19	29.982	75.0	76.8
21	29.889	77.0	83.2
23	. .	. .	83.3
24	. .	. .	72.5
25	29.958	76.0	72.5
30	. .	. .	69.4
32	. .	. .	69.5
33	29.970	74.5	69.5
37	29.990	73.0	67.1
42	30.000	73.0	65.2
43	30.142	71.5	75.8
45	30.152	73.0	

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	' "	' "	' "	' "
1	− 2.7	− 7.1	. .	− 9.8
2	− 2.7	+ 7.1	. .	+ 4.4
5	− 2.3	− 15 46.6	. .	− 15 48.9
6	− 2.3	+ 15 46.6	. .	+ 15 44.3
7	−36 42.1	+ 16 8.0	. .	− 20 34.1
19	− 2.4	+ 7.2	. .	+ 4.8
20	− 2.4	+ 15 44.6	. .	+ 15 42.2
21	− 2.5	− 15 44.6	. .	− 15 47.1
24	−48 19.6	+ 16 17.9	. .	− 32 1.7
29	− 0.8	+ 11.2	. .	+ 10.4
30	− 0.8	− 11.2	. .	− 12.0
43	− 2.3	+ 7.7	. .	+ 5.4
44	− 2.3	− 7.7	+ 0.2	− 9.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 8	1	β Tauri	S.	25.5	28.4	30.1	37.0	39.2	41.5	48.7	50.6	53.3	18 39.37	− 0.10	−35.35	−35.32	15 8 3.95	+ 0.01
	2	Mercury II, C.	S.	31.5	34.2	36.0	42.5	44.9	47.0	53.6	55.3	58.1	56 44.79	− 0.08	. .	−35.33	5 56 9.38	− 0.23
9	3	Sun I, N.	S.	53.2	55.9	57.8	4.3	6.2	8.8	15.2	17.0	20.2	14 6.51	− 0.08	. .	−35.34	7 13 31.09	. .
	4	Sun II, S.	S.	9.9	12.8	14.5	21.0	23.3	25.4	32.0	33.6	36.5	16 23.22	− 0.08	. .	−35.34	7 15 47.80	. .
	5	Moon I, N.	S.	12.5	15.1	16.8	23.5	25.7	27.8	34.6	36.3	39.0	35 25.70	+ 0.01	. .	−35.42	16 34 50.29	+71.67
	6	α^1 Herculis	S.	8.0	10.5	12.1	18.3	20.5	22.7	28.9	30.6	33.0	9 20.51	− 0.08	−35.42	−35.42	17 9 45.01	+ 0.02
	7	Saturn II, S.	S.	42.0	44.4	46.2	. .	. .	. .	3.9	5.3	8.2	32 54.99	+ 0.02	. .	−35.42	17 32 19.59	. .
	8	Saturn II, N.	S.	. .	. .	51.9	54.0	56.1	58.3	0.5	. .	. .	32 56.17	+ 0.02	. .	−35.42	17 31 20.77	. .
	9	δ Ursæ Minoris	S.	30.56	5.0	39.0	13.5	48.0	. .	. .	. .	. .	15 13.72	− 2.60	. .	−35.43	18 14 35.69	+ 0.82
	10	51 Cephei, S. P.	S.	. .	. .	18.0	. .	53.5	10.0	28.5	. .	. .	38 52.88	+ 3.04	. .	−35.43	6 38 20.49	− 0.07
	11	1 Aquilæ	S.	. .	. .	. .	. .	47.6	49.5	53.7	55.2	57.8	28 45.45	− 0.02	−35.43	−35.43	18 28 10.00	+ 0.07
	12	α Lyræ	S.	54.3	57.6	59.7	7.3	10.0	12.5	20.4	22.2	25.6	33 9.96	− 0.18	−35.38	−35.43	18 32 34.35	− 0.03
	13	β Lyræ	S.	39.9	42.9	45.0	52.1	54.5	56.8	4.2	6.2	9.2	45 54.53	− 0.16	−35.42	−35.43	18 45 18.94	+ 0.02
	14	ζ Aquilæ	S.	51.0	53.6	55.4	1.5	3.7	5.6	12.0	13.6	16.3	0 3.67	− 0.09	−35.49	−35.44	18 59 28.14	+ 0.13
10	15	Venus II, N.	F.	9.3	11.9	13.5	20.0	22.2	24.3	31.0	32.5	35.3	44 22.24	− 0.06	. .	−35.83	4 43 46.35	− 0.51
	16	Venus, S. C.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	17	α Aurigæ	F.	23.0	26.6	29.0	37.7	40.5	43.7	52.5	54.6	58.1	7 40.63	− 0.11	. .	−35.84	5 7 4.68	+ 0.01
	18	β Orionis	F.	40.4	43.0	44.7	50.7	52.7	54.8	1.0	2.6	5.1	8 52.78	− 0.03	−35.87	−35.84	5 8 16.91	+ 0.02
	19	b Ophiuchi	F.	50.5	53.3	55.1	1.7	4.0	6.3	13.0	14.6	17.4	19 3.99	− 0.06	−35.85	−35.89	17 18 28.04	− 0.01
11	20	Saturn I, S.	F.	10.0	12.8	14.4	. .	. .	. .	31.6	33.4	36.2	23.06	− 0.06	. .	−35.90	17 31 47.10	. .
	21	Saturn II, N.	F.	. .	. .	20.0	22.1	24.3	26.6	28.6	. .	. .	32 24.32	− 0.06	. .	−35.90	17 31 48.36	. .
	22	γ Draconis	F.	54.2	58.1	0.5	10.4	13.7	16.9	26.9	29.2	33.3	54 13.69	− 0.18	. .	−35.90	17 53 37.61	− 0.13
	23	γ^2 Sagittarii	F.	51.3	54.4	56.3	3.3	5.6	8.0	15.1	17.0	20.0	58 5.67	− 0.04	−35.81	−35.90	17 57 29.73	− 0.05
	24	22 Camelopard., S. P.	F.	39.5	32.0	27.6	10.7	5.0	58.6	41.2	37.0	30.0	5 4.63	− 0.02	. .	−35.90	6 4 28.71	+ 0.12
	25	δ Ursæ Minoris	F.	. .	. .	3.0	36.5	11.0	44.5	. .	. .	. .	15 10.78	− 0.89	. .	−35.90	18 14 33.99	. .
	26	1 Aquilæ	F.	33.7	36.3	37.9	44.0	46.1	48.0	54.3	55.7	58.4	28 46.04	− 0.08	−35.95	−35.90	18 28 10.06	+ 0.12
	27	α Lyræ	F.	54.8	58.0	0.0	7.8	10.4	13.0	21.0	22.8	26.2	33 10.44	− 0.15	−35.89	−35.90	18 32 34.39	+ 0.01
	28	Moon I, N.	F.	28.4	31.4	33.0	39.6	42.2	44.3	51.3	52.9	55.6	41 42.08	− 0.04	. .	−35.90	18 41 6.14	+72.58
	29	ζ Aquilæ	F.	51.7	54.1	55.7	2.0	4.1	6.2	12.4	14.0	16.7	0 4.10	− 0.12	−35.88	−35.90	18 59 27.98	− 0.04
	30	d Sagittarii	F.	26.9	29.8	31.0	37.6	39.9	42.0	48.4	50.2	52.8	10 39.84	− 0.05	−35.97	−35.90	19 10 3.89	+ 0.09
	31	δ Aquilæ	F.	22.2	25.0	26.4	32.5	34.6	36.7	42.8	44.3	46.9	19 34.60	− 0.10	−35.88	−35.91	19 18 58.69	+ 0.12
	32	κ Aquilæ	F.	19.6	21.9	23.6	29.9	31.8	34.0	40.3	41.6	44.1	30 31.87	− 0.08	−35.94	−35.91	19 29 55.88	+ 0.07
	33	γ Aquilæ	F.	30.3	33.0	34.6	40.6	42.8	44.8	51.0	52.6	55.2	40 42.77	− 0.11	−35.90	−35.91	19 40 6.75	+ 0.02
	34	α Aquilæ	F.	52.0	54.6	56.3	2.4	4.4	6.4	12.7	14.2	16.7	45 4.41	− 0.11	−35.86	−35.91	19 44 28.39	− 0.01
	35	β Aquilæ	F.	21.5	24.0	25.5	31.5	33.6	35.6	41.8	43.3	46.0	49 33.64	− 0.11	−35.90	−35.91	19 48 57.62	+ 0.02
	36	3 Ursæ Majoris, S. P.	F.	57.7	50.5	46.5	29.1	23.6	17.8	1.0	56.7	50.0	0 23.66	+ 0.08	. .	−35.91	7 59 47.81	− 0.18
	37	α^2 Capricorni	F.	. .	. .	24.3	26.3	28.4	30.4	32.5	. .	. .	11 28.39	− 0.05	−35.90	−35.91	20 10 52.43	+ 0.03
	38	κ Cephei	F.	. .	. .	37.5	46.5	55.5	4.8	14.0	. .	. .	13 55.71	− 0.33	. .	−35.91	20 13 19.47	+ 0.29
	39	ε Delphini	F.	25.6	28.2	29.9	36.0	38.0	40.0	46.4	47.9	50.5	27 38.06	− 0.09	−35.88	−35.91	20 27 2.06	+ 0.02
	40	Venus II, N.	S.	4.2	7.0	8.6	15.1	17.4	19.6	26.0	27.7	30.4	49 17.33	− 0.10	. .	−35.86	4 48 41.37	− 0.51
	41	Venus, S.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	42	β Orionis	S.	40.5	43.0	44.6	50.8	52.9	55.0	1.1	2.5	5.2	8 52.84	− 0.04	−35.89	−35.86	5 8 16.94	+ 0.02
	43	ε Orionis	S.	0.2	2.8	4.4	10.5	12.4	14.4	20.5	22.0	24.5	30 12.41	− 0.06	−35.86	−35.86	5 29 36.49	− 0.01
	44	α Orionis	S.	. .	. .	39.3	41.3	43.4	45.5	47.4	. .	. .	48 43.39	− 0.07	−35.84	−35.86	5 48 7.46	− 0.05
12	45	α Tauri	E.	51.1	53.7	55.4	1.6	3.8	5.9	12.3	13.9	16.5	29 3.80	0.00	−36.29	−36.31	4 28 27.49	− 0.04
	46	Venus II, N.	F.	0.7	3.5	5.2	11.6	13.8	16.0	22.6	24.3	27.0	54 13.86	− 0.01	. .	−36.33	4 53 37.48	− 0.51
	47	Venus, S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	48	α Aurigæ	F.	23.7	27.3	29.6	38.4	41.2	44.0	52.7	55.1	58.6	7 41.18	− 0.11	. .	−36.33	5 7 4.74	+ 0.01
	49	β Orionis	F.	40.8	43.4	44.9	51.0	53.1	55.2	1.3	2.7	5.4	8 53.09	+ 0.10	−36.27	−36.33	5 8 16.86	− 0.07

3. Micrometer revolutions assumed.
9. Transits observed over wires B_2–C_4; bisections at C_1 and C_3.
10. Transits observed over wires C_4–D_3.
28. Bisections at wires B_1, C_1, C_5, and D_3.
36, 38. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1																	
2	16 24	13.9	14.6	29.0	29.0	22	. .	075	. .	061	. .	67.6	16 29 4.2	. .	+ 16.4	67 35 41.8	− 2.2
3	16 12	11.3	13.0	26.3	26.5	22	880	940	. .	. .	. .	67.6	16 16 55.1	. .	+ 16.1	67 23 32.4	
4	16 44	3.0	5.0	18.5	19.4	25	. .	. .	. .	190	165	67.6	16 48 20.7	. .	+ 16.8	67 54 58.6	
5	58 2	9 25.4	26.5	10.5	8.8	22	522	316	092	900	707	67.6	58 7 20.1	. .	+ 1 29.6	109 15 10.9	
6	24 16	23.3	23.4	7.1	5.6	23	. .	. .	. .	102	025	67.6	24 20 39.7	. .	+ 25.5	75 27 26.4	+ 0.5
7	60 52	17.6	17.3	1.7	1.8	24	. .	. .	. .	738	. .	67.6	60 56 21.1	. .	+ 1 41.1	112 42 26.4	
8	60 52	17.6	17.3	1.7	1.8	24	. .	160	. .	. .	. .	67.6	60 55 59.4	. .	+ 1 41.0	112 4 1.6	
9	312 14	17.4	17.1	1.2	1.3	25	440	408	. .	. .	. .	67.6	312 18 10.3	. .	− 1 2.0	3 23 29.5	− 0.8
10																	
11	47 8	19.7	20.1	4.6	3.8	24	. .	054	. .	. .	. .	67.6	47 12 29.2	. .	+ 1 1.7	98 19 52.1	+ 1.7
12																	
13	5 36	18.5	18.2	2.7	0.5	23	. .	620	. .	450	540	67.6	5 40 38.0	. .	+ 5.6	56 47 4.8	+ 0.1
14																	
15	18 18	10 12.6	13.3	27.6	28.4	22	. .	260	. .	330	. .	67.1	18 23 1.1	. .	+ 18.2	69 29 40.5	
16	18 18	12.6	13.3	27.6	28.4	21	512	. .	. .	. .	424	67.1	18 23 14.2	. .	+ 18.2	69 29 53.6	
17	352 58	8.5	8.0	23.5	23.7	26	120	048	. .	. .	. .	67.1	353 2 9.6	. .	− 6.8	44 8 24.0	+ 0.9
18	47 10	7.6	8.0	22.9	24.5	27	. .	. .	. .	136	116	67.1	47 13 51.0	. .	+ 1 0.6	98 21 12.8	+ 0.7
19	62 50	8.6	8.3	23.3	24.6	22	. .	770	. .	680	. .	68.8	62 55 0.6	. .	+ 1 48.0	114 3 9.8	+ 2.5
20	60 52	11.2	10.7	26.2	27.2	25	452	. .	. .	. .	436	68.8	60 56 16.3	. .	+ 1 39.4	112 4 16.9	
21	60 52	11.2	10.7	26.2	27.2	26	. .	726	. .	708	. .	68.8	60 55 56.9	. .	+ 1 39.4	112 3 57.5	
22	347 20	3.7	4.1	18.8	19.0	29	. .	550	. .	420	. .	68.8	347 23 22.5	. .	− 12.4	38 29 31.3	0.0
23	69 12	11.7	12.0	26.3	27.7	24	. .	. .	. .	220	170	68.8	69 16 33.6	. .	+ 2 25.3	120 25 20.1	+ 0.8
24	288 14	11.0	10.7	24.6	25.7	26	. .	840	. .	746	. .	68.8	288 17 55.9	. .	− 2 45.9	339 21 31.2	+ 1.0
25	312 14	6.0	5.7	20.4	20.5	26	286	232	246	256	256	68.8	312 18 9.9	. .	− 1 0.8	3 23 30.3	+ 0.6
26	47 8	13.5	14.1	28.1	28.7	24	. .	450	. .	390	. .	68.8	47 12 29.8	. .	+ 1 0.5	98 19 51.5	+ 1.2
27	0 10	11.1	10.5	24.3	24.8	27	. .	992	. .	914	. .	68.8	0 13 39.6	. .	+ 0.2	51 20 1.0	+ 0.5
28	61 38	10 8.0	8.0	22.6	23.3	29	034	006	. .	990	980	68.8	61 41 25.4	. .	+ 1 42.3	112 49 28.9	
29	25 8	12.8	11.9	25.6	26.0	23	. .	520	. .	490	. .	68.8	25 12 46.0	. .	+ 26.1	76 19 33.3	+ 1.4
30	57 58	11.2	11.3	25.0	26.0	22	. .	748	. .	660	. .	68.8	58 2 58.7	. .	+ 1 28.7	100 10 48.6	+ 4.6
31	35 58	10.6	9.8	23.5	23.5	29	. .	058	. .	960	. .	68.8	36 1 24.0	. .	+ 40.3	87 8 25.5	+ 1.5
32	46 8	14.3	14.1	28.0	28.6	28	638	680	. .	. .	. .	68.8	46 11 26.0	. .	+ 57.8	97 18 45.0	+ 3.1
33	28 30	15.5	14.3	28.5	28.0	22	. .	930	. .	820	. .	68.8	28 35 8.4	. .	+ 30.2	79 41 59.8	+ 1.5
34	30 18	11.1	10.9	25.0	25.0	29	. .	086	. .	014	. .	68.8	30 21 22.2	. .	+ 32.5	81 28 15.9	+ 0.7
35	32 44	16.2	15.5	29.3	29.5	26	720	666	. .	592	560	68.8	32 47 54.6	. .	+ 35.8	83 54 51.6	+ 1.6
36	287 42	9.6	9.1	22.8	25.2	20	. .	124	. .	070	. .	68.8	287 47 40.1	. .	− 2 51.0	338 51 10.3	+ 0.7
37	51 44	9.5	9.1	22.3	24.0	22	. .	502	. .	444	. .	68.8	51 49 4.4	. .	+ 1 10.5	102 56 36.1	+ 1.1
38	321 32	16.2	14.1	29.2	29.3	29	. .	. .	. .	256	236	68.8	321 35 14.9	. .	− 44.1	12 40 52.0	− 1.2
39	27 58	10 16.7	15.6	25.6	29.8	29	140	126	. .	018	008	68.8	28 1 18.0	. .	+ 29.6	79 8 8.8	+ 3.2
40	18 8	15.9	16.5	25.8	0.4	26	646	. .	. .	. .	618	67.6	18 11 54.1	. .	+ 17.9	69 18 33.2	
41	18 8	15.9	16.5	25.8	0.4	25	. .	634	. .	618	. .	67.6	18 12 9.3	. .	+ 17.9	69 18 48.4	
42																	
43																	
44																	
45	22 34	16.2	19.5	2.7	1.3	23	. .	850	. .	848	. .	67.4	22 38 33.4	. .	+ 22.9	73 45 17.5	− 0.1
46	17 58	14.2	17.1	29.3	0.5	28	962	. .	. .	. .	. .	67.4	18 1 18.6	. .	+ 17.8	69 7 57.6	
47	17 58	14.2	17.1	29.3	0.5	28	. .	924	. .	. .	. .	67.4	18 1 34.0	. .	+ 17.8	69 8 13.0	
48	352 58	12.5	14.4	27.4	27.6	25	914	842	. .	. .	. .	67.4	353 2 8.4	. .	− 6.7	44 8 22.9	− 0.4
49	47 10	5.3	8.3	20.9	23.4	27	. .	464	. .	370	. .	67.4	47 13 49.2	. .	+ 59.6	98 21 10.0	− 1.7

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	77.6
5	. .	. .	71.0
6	30.182	72.0	70.0
8	. .	. .	69.1
9	30.188	72.7	68.8
13	. .	. .	67.9
15	30.132	76.2	83.6
19	30.000	76.6	74.3
27	. .	. .	74.8
36	29.980	75.3	74.0
39	29.976	75.0	73.8
40	29.989	77.5	85.0
46	30.030	76.2	81.4

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	− 2.3	. . .	+ 0.1	− 2.2
3	− 2.4	+ 15 43.1	. .	+ 15 40.7
4	− 2.4	− 15 43.1	. .	− 15 45.5
5	−50 28.7	+ 16 16.6	. .	− 34 12.1
7	− 0.8	− 12.4	. .	− 13.2
8	− 0.8	+ 12.4	. .	+ 11.6
15	− 2.3	+ 6.6	. .	+ 4.3
16	− 2.3	− 6.6	+ 0.1	− 8.8
20	− 0.8	− 9.7	. .	− 10.5
21	− 0.8	+ 9.7	. .	+ 8.9
28	−51 44.5	+ 16 5.3	. .	− 35 39.2
40	− 2.2	+ 7.6	. .	+ 5.4
41	− 2.2	− 7.6	. .	− 9.8
46	− 2.4	+ 7.7	. .	+ 5.3
47	− 2.4	− 7.7	. .	− 10.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 12	1	β Tauri	F.	26.5	29.3	31.0	38.0	40.4	42.8	49.7	51.3	54.0	18 40.33	− 0.04	−36.27	−36.33	5 18 3.96	− 0.07
	2	ε Orionis.	F.	0.5	3.0	4.6	10.7	12.7	14.7	20.8	22.5	24.9	30 12.71	+ 0.06	−36.26	−36.33	5 29 36.44	− 0.08
	3	α Orionis.	F.	31.2	34.0	35.5	41.6	43.9	46.0	52.0	53.5	56.1	48 43.76	+ 0.04	−36.31	−36.33	5 48 7.47	− 0.05
	4	γ Geminorum	F.	37.8	39.5	43.7	45.7	48.0	50.0	52.2	56.4	57.8	30 47.90	0.00	−36.44	−36.34	6 30 11.56	+ 0.07
13	5	Sun I, S.	F.	12.5	15.3	17.0	23.6	25.7	28.0	34.4	36.0	38.9	30 25.71	− 0.02	. .	−36.35	7 29 49.34	. .
	6	Sun II, N.	F.	29.2	31.5	33.2	39.8	41.9	44.1	50.7	52.3	55.1	32 41.98	− 0.02	. .	−36.35	7 32 5.61	. .
	7	α Hydræ	F.	35.4	38.0	39.6	45.7	47.7	49.8	56.0	57.5	0.1	21 47.76	+ 0.09	−36.32	−36.37	9 21 11.48	+ 0.02
	8	α Leonis	F.	50.0	52.6	54.2	0.7	2.8	5.0	11.1	12.6	15.3	2 2.70	+ 0.02	−36.31	−36.38	10 1 26.34	− 0.11
	9	ψ Draconis	F.	15.9	24.0	29.7	49.0	56.0	2.5	22.5	27.3	35.7	44 55.84	− 0.35	. .	−36.45	17 44 19.04	0.00
	10	γ Draconis	F.	. .	. .	7.7	11.0	14.2	17.5	20.8	. .	. .	54 14.26	− 0.10	. .	−36.45	17 53 37.71	− 0.01
	11	γ^2 Sagittarii	F.	. .	1.2	3.4	5.8	8.3	10.8	15.4	17.3	20.2	58 5.95	+ 0.18	−36.34	−36.45	17 57 29.68	− 0.10
	12	22 Camelopard., S. P.	F.	40.0	32.6	28.1	10.9	5.0	59.3	42.0	37.5	30.4	5 5.09	+ 0.36	. .	−36.46	6 4 28.99	+ 0.31
	13	μ^1 Sagittarii	F.	24.8	27.2	29.0	35.6	37.9	40.0	46.6	48.3	50.8	6 37.80	+ 0.15	−36.43	−36.46	18 6 1.49	− 0.02
	14	δ Ursæ Minoris	F.	. .	. .	3.0	37.0	11.5	47.0	21.5	. .	. .	15 12.20	− 1.99	. .	−36.46	18 14 33.75	− 0.31
	15	1 Aquilæ	F.	34.1	36.8	38.3	44.5	46.5	48.6	54.7	56.2	58.8	28 46.50	+ 0.10	−36.58	−36.46	18 28 10.14	+ 0.19
	16	α Lyræ	F.	55.3	58.4	0.5	8.5	11.0	13.5	21.5	23.4	26.6	33 10.97	− 0.04	−36.53	−36.46	18 32 34.47	+ 0.09
	17	51 Cephei, S. P.	F.	. .	. .	20.0	38.5	55.5	12.5	30.0	. .	. .	38 55.05	+ 2.53	. .	−36.47	6 38 21.11	− 0.41
	18	β Lyræ	F.	40.9	43.9	45.7	53.0	55.0	58.1	5.2	7.1	10.0	45 55.49	− 0.02	−36.51	−36.47	18 45 19.00	+ 0.07
	19	δ Aquilæ	F.	25.4	26.9	31.1	33.3	35.1	37.0	39.3	43.2	44.7	19 35.11	+ 0.07	−36.54	−36.47	19 18 58.71	+ 0.12
	20	κ Aquilæ	F.	20.0	22.5	24.0	30.0	32.1	34.1	40.4	42.0	44.6	30 32.19	+ 0.10	−36.42	−36.47	19 29 55.82	− 0.01
	21	γ Aquilæ	F.	30.9	33.4	35.0	41.2	43.3	45.3	51.5	53.0	55.5	40 43.23	+ 0.05	−36.50	−36.47	19 40 6.81	+ 0.06
	22	α Aquilæ	F.	52.5	55.0	56.7	2.9	4.9	7.0	13.0	14.6	17.0	45 4.84	+ 0.05	−36.43	−36.47	19 44 28.42	0.00
	23	ε Draconis	F.	. .	. .	11.0	16.8	22.7	29.0	40.7	45.2	52.7	49 16.96	− 0.29	. .	−36.47	19 48 40.20	+ 0.12
	24	τ Aquilæ	F.	13.4	16.0	17.6	23.7	25.8	27.8	34.0	35.5	38.0	58 25.76	+ 0.06	−36.46	−36.47	19 57 49.35	+ 0.01
	25	3 Ursæ Majoris, S.P.	F.	. .	. .	. .	57.9	50.9	46.4	35.4	29.7	23.7	0 23.90	+ 0.36	. .	−36.48	7 59 47.78	− 0.23
	26	α^2 Capricorni.	F.	16.4	19.0	20.6	26.8	28.9	31.0	37.2	38.7	41.5	11 28.90	+ 0.12	−36.55	−36.48	20 10 52.54	+ 0.11
	27	κ Cephei	F.	. .	. .	. .	. .	. .	. .	33.1	40.4	51.4	13 55.97	− 0.50	. .	−36.48	20 13 18.99	− 0.21
	28	π Capricorni.	F.	18.4	20.9	22.6	29.0	31.1	33.3	39.6	41.4	44.0	20 31.14	+ 0.13	−36.49	−36.48	20 19 54.79	+ 0.04
	29	Moon II, N.	F.	46.1	48.9	50.5	57.2	59.4	1.6	8.4	10.0	12.8	46 59.43	+ 0.14	. .	−36.48	20 46 23.09	−69.64
	30	ν Cygni	F.	42.4	45.8	48.0	55.6	58.4	1.0	9.3	11.3	14.5	52 58.48	− 0.05	−36.49	−36.48	20 52 21.95	+ 0.07
	31	α Tauri	E.	51.4	54.0	55.6	2.0	4.2	6.3	12.5	14.3	17.0	29 4.14	− 0.09	−36.51	−36.53	4 28 27.52	− 0.04
	32	ι Aurigæ.	E.	53.5	56.6	58.5	5.8	8.0	10.5	17.8	19.7	22.8	49 8.13	− 0.12	−36.58	−36.53	4 48 31.48	+ 0.01
	33	Venus II, N.	E.	58.3	0.9	2.6	9.2	11.2	13.6	20.1	21.8	24.5	59 11.36	− 0.10	. .	−36.53	4 58 34.73	− 0.50
	34	α Aurigæ.	E.	24.0	27.5	29.9	38.6	41.5	44.4	53.3	55.6	59.3	7 41.57	− 0.14	. .	−36.54	5 7 4.89	+ 0.13
	35	β Orionis.	E.	41.2	43.8	45.4	51.5	53.5	55.5	1.8	3.4	6.0	8 53.57	− 0.03	−36.60	−36.54	5 8 16.00	+ 0.05
	36	β Tauri	E.	26.8	29.7	31.4	36.1	40.6	45.3	50.0	51.8	54.6	18 40.70	− 0.11	−36.55	−36.54	5 18 4.05	− 0.01
	37	δ Orionis.	E.	45.7	48.4	49.9	56.0	58.0	0.0	6.1	7.6	10.1	25 57.98	− 0.05	−36.48	−36.54	5 25 21.39	− 0.09
	38	ε Orionis.	E.	0.9	3.5	5.0	11.0	13.0	15.1	21.2	22.8	25.4	30 13.10	− 0.05	−36.52	−36.54	5 29 36.51	− 0.03
	39	α Orionis.	E.	31.9	34.5	36.0	42.0	44.1	46.2	52.4	54.0	56.5	48 44.18	− 0.07	−36.60	−36.54	5 48 7.57	+ 0.03
	40	γ Geminorum	E.	. .	. .	. .	. .	50.3	52.4	56.6	58.2	0.9	30 48.14	− 0.09	−36.57	−36.55	6 30 11.50	− 0.01
	41	Mercury II, S.	E.	15.9	18.7	20.3	27.0	29.2	31.5	38.2	39.8	42.6	35 29.34	− 0.10	. .	−36.56	6 34 52.58	− 0.21
14	42	Sun I, N.	E.	16.0	18.7	20.5	27.0	29.3	31.6	38.1	39.8	42.5	35 29.28	− 0.10	. .	−36.57	7 33 52.61	. .
	43	Sun II, S.	E.	32.2	35.0	36.7	43.2	45.2	47.6	54.3	56.0	58.8	37 45.48	− 0.10	. .	−36.57	7 36 8.81	. .
	44	α Ophiuchi	E.	20.0	22.7	24.3	30.6	32.7	34.7	41.0	42.5	45.2	29 32.63	− 0.08	−36.68	−36.71	17 28 55.84	0.00
	45	Saturn, I.	E.	. .	. .	32.1	34.4	36.6	38.7	41.1	. .	. .	31 36.59	− 0.02	. .	−36.71	17 30 59.86	. .
	46	Saturn, II.	E.	. .	. .	. .	. .	. .	46.5	48.3	51.1	. .	31 37.82	− 0.02	. .	−36.71	17 31 1.09	. .
	47	μ Herculis	E.	47.0	49.9	51.8	58.5	1.0	3.1	10.2	12.0	14.8	42 0.99	− 0.11	−36.63	−36.71	17 41 24.10	− 0.08
	48	γ Draconis, (R.)	E.	54.3	58.7	0.8	10.7	13.9	17.0	27.2	29.6	33.7	54 13.99	+ 0.28	. .	−36.72	17 53 37.55	− 0.16
	49	γ^2 Sagittarii	E.	. .	4.0	6.4	8.7	11.0	15.9	17.5	20.5	. .	58 6.35	0.00	−36.56	−36.72	17 57 29.63	− 0.15

9, 10, 12, 23, 27. Bisections at sets B and D.
25. Bisections at wires III and II.
29. Bisections at wires II–VI.
40. Transits observed over wires C_4–D_3.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ′		′ ″	° ′ ″	″
1	10 20	11.4	15.0	27.5	27.9	26	995	948	. .	910	892	67.4	10 23 50.9	. .	+ 10.0	61 30 22.1	− 1.3
2	40 6	7.0	10.3	22.4	22.9	26	300	218	. .	154	146	67.4	40 10 6.6	. .	+ 46.2	91 17 14.0	+ 0.6
3	31 26	12.5	14.8	26.1	26.5	25	. .	. .	. .	278	224	67.4	31 30 15.8	. .	+ 33.5	82 37 10.5	− 1.0
4	22 18	11.0	13.6	25.5	26.1	22	. .	980	. .	930	. .	67.4	22 22 53.0	. .	+ 22.4	73 29 36.6	+ 2.7
5	17 16	14.7	17.8	29.9	1.7	23	678	678	. .	. .	. .	67.4	17 20 38.9	. .	+ 17.0	68 27 17.1	
6	16 44	15.9	18.2	1.0	1.8	21	. .	. .	. .	526	570	67.4	16 49 8.1	. .	+ 16.4	67 55 45.7	
7	46 54	10 10.7	14.6	27.4	27.6	24	222	184	. .	160	180	67.4	46 58 33.0	. .	+ 57.9	98 5 52.1	+ 1.5
8	26 12	15.1	17.8	1.4	0.1	21	. .	. .	. .	690	650	67.4	26 17 6.9	. .	+ 26.7	77 23 54.8	+ 1.5
9	326 38	11.4	10.2	23.8	25.7	29	. .	228	. .	154	. .	67.4	326 41 19.0	. .	− 36.5	17 47 3.7	− 0.8
10	347 20	8.5	8.4	22.0	22.5	29	. .	238	. .	140	. .	68.3	347 23 22.3	. .	− 12.4	38 29 31.1	+ 0.3
11	69 12	10 15.2	15.0	29.0	0.0	23	. .	. .	. .	978	942	68.3	69 16 33.8	. .	+ 2 25.3	120 25 20.3	+ 0.9
12	288 14	13.2	12.9	26.3	27.6	26	. .	894	. .	832	. .	68.3	288 17 53.0	. .	− 2 46.0	339 21 28.2	− 1.5
13	59 52	17.7	17.5	1.9	2.8	20	. .	. .	. .	620	636	68.3	59 57 22.2	. .	+ 1 35.6	111 5 19.0	− 0.7
14	312 14	10 13.6	12.7	26.5	27.2	25	928	926	922	852	906	68.3	312 18 7.9	. .	− 1 0.9	3 23 28.2	− 1.0
15	47 8	12.7	13.4	27.4	28.5	24	. .	. .	. .	. .	400	68.3	47 12 30.2	. .	+ 1 0.0	98 19 51.4	+ 1.3
16	0 10	14.0	13.7	27.9	27.7	27	. .	848	. .	800	. .	68.3	0 13 37.9	. .	+ 0.2	51 19 59.3	− 0.7
17	306 4	8.2	7.5	20.7	22.8	22	248	208	230	188	210	68.3	306 9 9.3	. .	− 1 15.8	357 14 14.7	+ 0.2
18	5 36	10 14.2	14.0	28.1	26.5	24	074	006	. .	. .	. .	68.3	5 40 37.1	. .	+ 5.5	56 47 3.8	+ 0.2
19	35 58	15.6	14.6	28.2	27.5	28	. .	. .	. .	718	708	68.3	36 1 22.3	. .	+ 40.4	87 8 23.9	+ 0.2
20	46 8	7.7	8.3	21.5	22.9	29	. .	150	. .	068	. .	68.3	46 11 23.6	. .	+ 58.0	97 18 42.8	+ 1.1
21	28 30	9.6	7.7	21.5	22.0	22	. .	. .	. .	310	298	68.3	28 35 6.6	. .	+ 30.3	79 41 58.1	+ 0.2
22	30 18	19.0	18.2	2.0	0.9	28	. .	596	. .	508	. .	68.3	30 21 22.4	. .	+ 32.6	81 28 16.2	+ 1.3
23	328 54	15.1	14.4	27.9	28.9	26	. .	. .	. .	514	554	68.3	328 57 56.5	. .	− 33.5	20 3 44.2	− 0.9
24	31 54	12.3	12.7	24.7	25.6	25	. .	870	. .	828	. .	68.3	31 58 10.0	. .	+ 34.8	83 5 6.0	+ 1.1
25	287 42	13.7	13.4	26.5	28.2	19	. .	. .	. .	860	710	68.3	287 47 41.0	. .	− 2 51.4	338 51 10.8	+ 1.6
26	51 44	10.2	11.2	24.4	25.0	22	. .	454	. .	208	. .	68.3	51 49 3.9	. .	+ 1 10.7	102 56 35.8	+ 0.9
27	321 32	12.7	12.7	26.5	26.6	29	. .	. .	. .	430	404	68.3	321 35 14.3	. .	− 44.2	12 40 51.3	− 1.2
28	57 26	13.5	14.0	27.6	27.8	25	. .	666	. .	626	. .	68.3	57 30 11.0	. .	+ 1 27.2	108 37 59.4	+ 1.4
29	59 12	17.0	17.6	1.2	0.5	21	528	520	534	618	708	68.3	59 17 9.7	. .	+ 1 33.4	110 25 4.3	
30	358 10	11.2	10.5	23.6	24.3	28	. .	. .	. .	300	282	68.3	358 13 33.2	. .	− 1.7	49 19 52.7	+ 0.5
31	22 34	13.9	16.2	29.2	28.7	24	105	072	. .	975	942	66.8	22 38 33.1	. .	+ 22.7	73 45 17.0	− 0.5
32	5 52	18.0	19.5	3.5	1.6	25	. .	310	. .	200	. .	66.8	5 56 10.7	. .	+ 5.6	57 2 37.5	− 1.1
33	17 46	16.4	19.5	1.2	0.1	21	282	240	. .	190	180	66.8	17 51 13.7	. .	+ 17.4	68 57 52.3	
34	352 58	15.1	15.8	0.0	28.7	25	760	732	. .	. .	. .	66.8	353 2 7.9	. .	− 6.6	44 8 22.5	− 0.8
35	47 10	20.5	23.0	5.3	6.1	26	. .	382	. .	265	. .	66.8	47 13 51.0	. .	+ 58.4	98 21 10.6	− 0.9
36	10 20	17.3	19.5	2.5	1.2	26	. .	530	. .	445	. .	66.8	10 23 52.4	. .	+ 9.9	61 30 23.5	+ 0.1
37	39 12	17.4	19.3	2.3	1.0	23	. .	110	. .	040	. .	66.8	39 16 44.5	. .	+ 44.1	90 23 49.8	− 1.4
38	40 6	16.0	17.5	1.4	1.4	25	. .	690	. .	605	. .	66.8	40 10 6.1	. .	+ 45.6	91 17 12.9	− 0.3
39	31 26	18.2	19.8	0.8	2.0	24	. .	880	. .	780	. .	66.8	31 30 17.5	. .	+ 33.0	82 37 11.7	+ 0.3
40	22 18	19.2	21.5	3.7	2.5	22	. .	. .	. .	425	410	66.8	22 22 51.8	. .	+ 22.1	73 29 35.1	+ 1.3
41	15 36	16.8	17.4	2.2	0.0	23	. .	362	. .	280	. .	66.8	15 40 41.8	. .	+ 15.1	66 47 18.1	
42	16 54	10 14.1	14.7	28.3	28.5	25	910	890	. .	. .	. .	66.8	16 58 6.4	. .	+ 16.3	68 4 43.9	
43	17 26	10 19.7	20.3	3.4	3.0	27	. .	. .	. .	200	160	66.8	17 29 39.0	. .	+ 16.9	68 36 17.1	
44	26 10	23.8	25.5	4.5	5.5	27	. .	140	. .	075	. .	68.2	26 13 39.5	. .	+ 27.2	77 20 27.9	+ 0.7
45																	
46																	
47	11 2	22.8	24.5	6.8	4.5	28	. .	250	. .	165	. .	68.2	11 5 22.9	. .	+ 10.8	62 11 54.9	− 0.4
48	192 34	18.8	19.5	1.8	1.5	31	. .	310	. .	300	. .	68.2	192 35 39.2	. .	+ 12.4	38 30 29.6	− 0.9
49	69 12	22.3	23.0	5.7	5.5	23	. .	. .	. .	280	270	68.2	69 16 37.3	. .	+ 2 25.1	120 25 23.6	+ 4.1

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	83.0
3	30.036	77.2	83.8
4	. .	. .	85.3
6	30.024	78.9	86.2
8	. .	. .	88.6
9	29.990	76.5	74.2
14	. .	. .	74.0
18	. .	. .	73.8
20	29.964	76.0	72.0
30	29.950	74.8	72.0
31	. .	. .	84.0
41	. .	. .	91.5
43	29.920	81.0	92.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 2.5	− 15 45.7	. .	− 15 48.2
6	− 2.5	+ 15 45.7	. .	+ 15 43.2
29	−49 24.5	+ 15 44.2	. .	− 33 40.3
33	− 2.2	+ 7.0	. .	+ 4.8
41	− 2.0	− 7.6	. .	− 9.6
42	− 2.5	+ 15 46.6	. .	+ 15 44.1
43	− 2.5	− 15 46.6	. .	− 15 49.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 14	1	μ^1 Sagittarii . . .	E.	. .	. .	33.8	36.0	38.1	40.2	42.6	. .	. .	6 38.15	− 0.02	−36.61	−36.72	18 6 1.41	− 0.10
	2	δ Ursæ Minoris . .	E.	44.0 . .	27.5 . .	54.0 3.5	. . 35.0	. . 11.5	. . 45.0	29.0 21.0	55.0 . .	39.0 . .	15 11.44	− 1.04	. .	−36.72	18 14 33.68	− 0.20
	3	1 Aquilæ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	4	51 Cephei, S. P. . .	E.	. .	. .	21.0	39.0	58.5	15.5	33.0	. .	. .	38 57.18	+ 1.05	. .	−36.73	6 38 21.50	− 0.26
	5	β Lyræ	E.	41.2	44.2	46.2	51.0	53.4	. .	0.8	. .	. .	45 55.87	− 0.12	−36.79	−36.73	18 45 19.02	+ 0.09
	6	ζ Aquilæ, (R.) . .	E.	52.3	54.9	56.5	2.7	4.6	6.8	13.1	14.6	17.3	0 4.76	+ 0.17	. .	−36.73	18 59 28.20	+ 0.16
	7	δ Draconis, (R.) . .	E.	39.5	46.3	50.2	5.6	11.0	16.0	32.4	36.4	42.8	13 11.13	+ 0.41	. .	−36.74	19 12 34.80	+ 0.01
	8	κ Aquilæ	E.	20.5	22.9	24.5	30.6	32.7	34.8	41.0	42.4	45.0	30 32.71	− 0.05	−36.78	−36.74	19 29 55.92	+ 0.08
	9	γ Aquilæ, (R.) . .	E.	. .	. .	. .	. .	. .	. .	51.7	53.1	56.0	40 43.40	+ 0.17	. .	−36.74	19 40 6.83	+ 0.07
	10	α Aquilæ	E.	53.0	55.5	57.1	3.3	5.3	7.4	13.5	15.1	17.7	45 5.32	− 0.08	−36.77	−36.74	19 44 28.50	+ 0.07
	11	β Aquilæ	E.	22.2	24.7	26.4	32.5	34.5	36.6	43.0	44.4	46.8	49 34.57	− 0.07	−36.84	−36.75	19 48 57.75	+ 0.12
	12	λ Ursæ Majoris . .	E.	. .	. .	20.5	8.5	57.5	48.0	36.0	. .	. .	55 58.74	− 3.03	. .	−36.75	19 55 18.96	− 0.99
	13	α^2 Capricorni . .	E.	16.6	19.2	21.0	27.2	29.3	31.3	37.6	39.2	41.7	11 29.23	− 0.04	−36.71	−36.75	20 10 52.44	0.00
	14	ξ Aquarii . . .	E.	16.2	18.7	20.3	26.5	28.5	30.5	36.8	38.2	40.7	31 28.49	− 0.05	−36.80	−36.76	21 30 51.68	+ 0.06
	15	ε Pegasi	E.	14.4	17.0	18.6	24.6	26.6	28.7	35.0	36.5	39.3	38 26.74	− 0.08	−36.74	−36.76	21 37 49.90	− 0.01
	16	Moon II, N. . .	E.	28.5	31.4	33.0	39.6	41.7	44.0	50.5	52.2	55.0	43 41.77	− 0.03	. .	−36.77	21 43 4.97	−67.37
	17	μ Capricorni . . .	E.	38.4	41.0	42.8	49.0	51.1	53.2	59.5	1.1	3.7	46 51.09	− 0.04	−36.82	−36.77	21 46 14.28	+ 0.08
	18	Polaris	S.	. .	. .	. .	. .	. .	. .	. .	52.0	7.0	12 11.60	− 5.66	. .	−36.85	1 11 29.09	− 4.99
	19	ι Aurigæ	S.	. .	. .	. .	. .	. .	. .	18.1	20.0	23.0	49 8.42	− 0.04	−36.92	−36.91	4 48 31.47	− 0.03
	20	β Orionis	S.	41.4	43.9	45.6	51.9	53.9	55.9	2.0	3.5	6.0	8 53.79	+ 0.13	−36.95	−36.92	5 8 17.00	+ 0.02
	21	β Tauri	S.	27.1	30.2	34.0	38.8	41.1	43.2	50.1	52.1	54.9	18 41.06	− 0.02	−36.98	−36.92	5 18 4.12	+ 0.04
	22	ε Orionis	S.	1.2	3.8	5.3	11.4	13.4	15.7	. .	23.1	25.6	30 13.46	+ 0.09	−37.00	−36.92	5 29 36.63	+ 0.07
	23	α Orionis	S.	. .	. .	. .	. .	. .	. .	52.6	54.2	56.8	48 44.41	+ 0.06	−36.93	−36.93	5 48 7.54	− 0.03
	24	Mercury II, C. .	S.	43.2	45.8	47.4	54.0	56.4	58.6	5.2	6.9	9.8	43 56.37	0.00	. .	−36.95	6 43 19.42	− 0.21
15	25	Sun I, N. . . .	S.	19.3	23.9	28.2	30.3	32.6	34.7	37.1	41.3	45.6	38 32.56	+ 0.01	. .	−36.96	7 37 55.61	. .
	26	Sun II, S. . . .	S.	35.2	38.0	39.7	46.2	48.3	50.5	57.1	58.7	1.5	40 48.36	+ 0.01	. .	−36.96	7 40 11.41	. .
	27	μ Herculis . . .	S.	47.5	50.4	52.2	59.0	1.2	3.7	10.6	12.3	15.0	42 1.32	− 0.05	−37.10	−37.14	17 41 24.13	− 0.04
	28	1 Aquilæ	S.	34.8	37.2	38.9	45.0	47.0	49.1	55.4	56.9	59.6	28 47.10	+ 0.10	−37.17	−37.15	18 28 10.05	+ 0.09
	29	51 Cephei, S. P. . .	S.	. .	. .	17.0	35.5	51.0	10.5	28.5	. .	. .	38 52.28	+ 3.48	. .	−37.15	6 38 18.61	− 3.36
	30	50 Draconis . . .	S.	28.4	38.0	44.2	8.0	16.3	24.4	48.1	54.2	4.1	51 16.19	− 0.63	. .	−37.16	18 50 38.40	+ 0.31
	31	ζ Aquilæ	S.	22.7	25.3	26.9	3.2	5.3	7.4	13.6	15.2	17.9	0 5.28	+ 0.01	−37.17	−37.16	18 59 28.13	+ 0.09
	32	δ Aquilæ	S.	23.7	26.1	27.7	33.7	35.8	37.8	44.0	45.5	48.0	19 35.81	+ 0.05	−37.21	−37.17	19 58 58.69	+ 0.09
	33	κ Aquilæ	S.	20.8	23.0	24.9	31.0	33.0	35.0	41.2	42.8	45.3	30 33.00	+ 0.09	−37.19	−37.17	19 29 55.92	+ 0.06
	34	γ Aquilæ	S.	31.4	34.0	35.6	41.8	43.8	46.0	52.1	53.6	56.2	40 43.83	+ 0.02	−37.05	−37.17	19 40 6.68	+ 0.09
	35	α Aquilæ	S.	53.2	55.8	57.4	3.5	5.5	7.5	13.6	15.4	17.8	45 5.52	+ 0.03	−37.08	−37.18	19 44 28.37	− 0.06
	36	β Aquilæ	S.	22.5	25.0	26.6	32.7	34.8	36.9	43.1	44.5	47.1	49 34.80	+ 0.04	−37.17	−37.18	19 48 57.66	+ 0.02
	37	τ Aquilæ	S.	14.3	16.9	18.3	24.6	26.5	28.7	4.8	6.4	9.0	58 26.61	+ 0.06	−37.29	−37.18	19 57 49.49	+ 0.13
	38	μ Capricorni . . .	S.	38.6	41.4	43.0	49.2	51.3	53.4	59.8	1.3	4.0	46 51.33	+ 0.12	−37.19	−37.21	21 46 14.24	+ 0.01
	39	α Aquarii	S.	33.0	35.6	37.2	43.2	45.2	47.3	53.5	55.0	57.5	59 45.29	+ 0.06	−37.19	−37.21	21 59 8.14	+ 0.01
	40	θ Aquarii	S.	24.9	27.5	28.0	35.1	37.2	39.2	45.4	47.0	49.7	10 37.11	+ 0.10	−37.12	−37.21	22 10 0.00	− 0.07
	41	π Aquarii	S.	4.8	7.4	9.0	15.1	17.1	19.1	25.2	26.8	29.3	19 17.09	+ 0.06	−37.20	−37.22	22 18 39.93	0.00
	42	η Aquarii	S.	7.2	9.7	11.3	17.4	19.4	21.5	27.5	29.2	30.8	29 19.33	+ 0.06	−37.19	−37.22	22 28 42.17	0.00
	43	Moon II . . .	S.	32.8	35.2	37.0	43.4	45.5	47.7	54.0	55.7	58.4	36 45.51	+ 0.12	. .	−37.22	22 36 8.31	−65.19
	44	λ Aquarii	S.	16.3	18.8	20.4	26.6	28.5	30.7	36.7	38.4	41.0	46 28.60	+ 0.10	−37.23	−37.22	22 45 51.48	+ 0.09
	45	α Tauri	S.	52.2	54.8	56.6	2.9	5.0	7.0	13.5	15.0	17.7	29 4.97	+ 0.18	−37.55	−37.39	4 28 27.76	+ 0.14
	46	Venus II, N. . .	E.	56.2	59.0	0.8	7.2	9.5	11.7	18.3	19.9	22.7	9 9.48	+ 0.14	. .	−37.40	5 9 32.22	− 0.50

16. Bisections at wires II–VI.
24. Sun shining on instrument.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	59 52	22.2	22.6	6.5	5.6	20	. .	355	. .	330	. .	68.2	59 57 23.3	. .	+ 1 35.4	111 5 19.9	+ 0.1
2	312 14	22.0	23.2	6.2	5.3	25	310	305	320	335	300	68.2	312 18 7.6	. .	− 1 0.8	3 23 28.0	− 0.9
3	47 8	21.9	22.5	4.5	4.7	23	. .	850	. .	830	. .	68.2	47 12 30.8	. .	+ 59.8	98 19 51.8	+ 1.8
4	306 6	21.8	21.8	4.0	4.0	29	360	350	355	335	340	68.2	306 9 7.0	. .	− 1 15.7	357 14 12.5	− 1.7
5	5 36	22.1	22.8	6.4	3.5	23	. .	475	. .	440	. .	68.2	5 40 36.6	. .	+ 5.5	56 47 3.3	− 0.1
6	154 44	21.0	18.4	2.2	1.3	28	. .	. .	. .	840	. .	68.2	154 47 16.0	. .	− 26.1	76 19 31.3	0.0
7	208 28	20.7	22.0	5.2	3.5	26	. .	090	. .	060	. .	68.2	208 31 56.4	. .	+ 30.2	22 33 54.6	− 0.9
8	46 8	20.0	21.0	4.0	3.0	28	. .	260	. .	205	. .	68.2	46 11 25.0	. .	+ 57.8	97 18 44.0	+ 2.3
9	151 22	20.8	19.0	2.5	3.2	30	. .	. .	. .	125	110	68.2	151 24 55.6	. .	− 30.3	79 41 55.9	− 1.8
10	30 18	21.8	22.0	5.7	3.0	28	. .	480	. .	395	. .	68.2	30 21 20.8	. .	+ 32.5	81 28 14.5	− 0.2
11	32 44	18.6	20.2	2.0	1.2	26	. .	518	. .	415	. .	68.2	32 47 53.6	. .	+ 35.8	83 54 50.6	+ 1.1
12	309 56	17.9	17.7	0.7	0.1	27	700	735	730	725	725	68.2	309 59 36.0	. .	− 1 6.1	1 4 51.1	− 2.5
13	51 44	19.8	20.2	3.5	2.4	21	. .	930	. .	860	. .	68.2	51 49 2.4	. .	+ 1 10.6	102 56 34.2	− 0.6
14	47 14	20.6	21.2	4.5	3.2	23	. .	520	. .	488	. .	68.2	47 18 36.9	. .	+ 1 0.3	98 25 58.4	+ 0.5
15	29 32	20.4	21.0	4.8	3.0	25	. .	280	. .	185	. .	68.2	29 36 10.7	. .	+ 31.7	80 43 3.6	− 0.1
16	56 10	17.4	18.5	1.2	2.0	21	. .	060	140	310	. .	68.2	56 15 15.2	. .	+ 1 23.2	107 22 59.6	
17	52 58	18.0	18.0	2.5	1.5	26	. .	345	. .	222	. .	68.2	53 1 56.8	. .	+ 1 13.9	104 9 31.9	+ 0.5
18																	
19																	
20	47 10	20.1	20.4	4.7	4.6	26	. .	470	. .	400	. .	66.8	47 13 50.7	. .	+ 58.7	98 21 10.6	− 0.7
21	10 20	17.2	19.7	2.3	1.5	26	. .	550	. .	420	. .	66.8	10 23 52.4	. .	+ 10.0	61 30 23.6	+ 0.2
22																	
23																	
24	15 32	17.9	18.7	0.7	0.8	22	717	666	. .	657	623	66.8	15 36 51.5	. .	+ 15.0	66 43 27.7	− 2.0
25	17 2	10.6	12.0	23.4	25.7	20	743	797	. .	. .	. .	66.8	17 7 28.3	. .	+ 16.5	68 14 6.0	
26	17 34	12.2	13.6	25.9	26.2	22	. .	. .	. .	532	400	66.8	17 38 58.2	. .	+ 17.1	68 45 36.5	
27	11 2	22.7	23.7	6.1	3.5	28	. .	262	. .	048	. .	68.9	11 5 25.2	. .	+ 10.8	62 11 57.2	+ 2.1
28	47 8	25.7	26.1	7.8	7.7	23	. .	700	. .	640	. .	68.9	47 12 30.7	. .	+ 59.4	98 19 51.3	+ 1.3
29																	
30																	
31	25 8	22.5	23.4	4.7	2.7	22	949	944	. .	848	918	68.9	25 12 45.9	. .	+ 26.0	76 19 33.1	+ 2.0
32	35 58	23.4	23.3	5.1	3.9	28	. .	. .	. .	240	272	68.9	36 1 22.4	. .	+ 40.1	87 8 23.7	+ 0.3
33	46 8	22.2	23.0	5.3	4.1	28	270	274	. .	108	086	68.9	46 11 24.8	. .	+ 57.5	97 18 43.5	+ 1.9
34																	
35	30 18	23.8	25.0	6.8	4.1	28	. .	. .	. .	250	290	68.9	30 21 21.2	. .	+ 32.3	81 28 14.7	− 0.8
36																	
37																	
38	52 58	21.6	22.4	5.0	2.9	26	010	010	. .	959	925	68.9	53 1 59.2	. .	+ 1 13.4	104 9 33.8	+ 2.4
39	39 46	23.4	24.0	5.7	4.6	26	900	920	. .	829	789	68.9	39 49 44.4	. .	+ 46.2	90 56 51.8	+ 0.3
40	47 14	23.1	23.8	5.7	4.7	24	882	829	. .	818	844	68.9	47 18 15.2	. .	+ 1 0.0	98 25 36.4	+ 1.2
41																	
42	39 36	21.5	22.3	4.6	3.0	26	272	251	. .	104	098	68.9	39 39 56.3	. .	+ 44.9	90 47 2.4	− 0.4
43																	
44																	
45	22 34	19.5	20.5	3.2	1.2	23	. .	820	. .	785	. .	66.8	22 38 32.4	. .	+ 23.1	73 45 16.7	− 0.6
46	17 28	20.4	22.2	4.2	2.0	23	385	358	. .	260	235	66.8	17 32 39.0	. .	+ 17.5	68 39 17.7	

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	29.916	78.0	74.0
19	30.038	78.0	
20	. .	. .	86.5
21	. .	. .	87.3
22	30.042	80.0	
24	30.041	81.0	91.8
26	30.048	81.0	93.8
27	30.059	81.5	80.0
28	30.055	81.0	
31	. .	. .	78.5
32	. .	. .	78.0
33	30.040	80.5	77.9
36	. .	. .	77.8
38	30.042	79.0	76.2
39	. .	. .	76.0
40	. .	. .	76.0
42	. .	. .	76.0
43	30.040	79.0	
45	30.700	80.5	88.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
16	−47 9.0	+ 15 31.9	. .	− 31 37.1
24	− 2.0	. .	0.0	− 2.0
25	− 2.5	+ 15 45.2	. .	+ 15 42.7
26	− 2.6	− 15 45.2	. .	− 15 47.8
46	− 2.1	+ 6.9	. .	+ 4.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 15	1	Sun II, S. . . .	E.	38.1	40.9	42.5	49.1	51.3	53.5	0.0	1.8	4.4	44 51.29	+ 0.15	. .	−37.43	7 44 14.01	−67.90
16	2	*μ* Capricorni. . .	E.	38.8	41.5	43.1	49.3	51.4	53.5	59.9	1.6	4.0	46 51.46	+ 0.37	−37.55	−37.62	21 46 14.21	− 0.04
	3	79 Draconis . . .	E.	15.7	24.4	30.0	50.6	57.6	4.8	25.8	31.1	39.7	51 57.74	− 0.83	. .	−37.62	21 51 19.29	− 0.23
	4	*θ* Aquarii . . .	E.	25.0	27.6	29.2	35.2	37.4	39.4	45.6	47.2	49.7	10 37.37	+ 0.33	−37.58	−37.63	22 10 0.07	− 0.03
	5	*π* Aquarii . . .	E.	5.4	7.6	9.2	15.2	17.4	19.4	25.4	27.2	29.5	19 17.37	+ 0.27	−37.66	−37.63	22 18 40.01	+ 0.05
	6	9 Draconis, S. P. .	E.	22.9	12.4	5.6	40.0	31.0	22.6	56.4	50.0	39.1	24 31.11	+ 1.60	. .	−37.63	10 23 55.08	+ 0.36
	7	*η* Aquarii . . .	E.	7.6	9.9	11.5	17.6	19.6	21.6	27.7	29.2	31.9	29 19.62	+ 0.28	−37.68	−37.63	22 18 42.27	+ 0.08
	8	*ζ* Pegasi	E.	25.5	28.0	29.7	35.9	37.9	40.0	46.2	47.5	50.3	35 37.89	+ 0.20	−37.68	−37.64	22 35 0.45	+ 0.10
	9	*λ* Aquarii . . .	E.	. .	. .	24.4	26.6	28.7	30.8	32.9	. .	. .	46 28.69	+ 0.33	−37.52	−37.64	22 45 51.38	− 0.04
	10	*α* Piscis Australis .	E.	52.2	55.5	57.3	4.2	6.6	8.9	16.0	17.8	20.8	51 6.59	+ 0.50	−37.67	−37.64	22 50 29.45	+ 0.06
	11	*α* Pegasi, (R.) . .	E.	43.8	46.3	47.9	54.0	56.1	58.3	4.5	6.2	8.9	58 56.22	+ 0.31	. .	−37.64	22 58 18.89	+ 0.10
	12	*o* Cephei	E.	27.0	33.7	37.9	53.6	58.9	4.4	20.2	24.2	30.9	13 58.98	− 0.59	. .	−37.64	23 13 20.75	− 0.17
	13	*θ* Piscium . . .	E.	49.2	51.6	53.2	59.3	1.4	3.4	9.6	11.0	13.5	22 1.36	+ 0.24	−37.68	−37.65	23 21 23.95	+ 0.09
	14	Moon II, N. . .	E.	25.4	28.0	29.5	35.8	38.0	40.0	46.4	48.0	50.7	26 37.98	+ 0.34	. .	−37.65	23 26 0.67	−63.37
	15	*ι* Piscium . . .	E.	42.4	45.0	46.5	52.6	54.7	56.7	2.8	4.3	7.0	33 54.67	+ 0.24	−37.60	−37.65	23 33 17.26	− 0.05
	16	Groombridge 4163	E.	30.3	38.2	45.0	6.7	13.5	21.2	43.0	48.0	57.7	49 13.79	− 0.93	. .	−37.65	23 48 35.31	− 0.25
	17	*ω* Piscium . . .	E.	4.4	7.0	8.7	14.8	16.9	18.9	25.0	26.5	29.2	53 16.82	+ 0.23	−37.53	−37.65	23 52 39.40	− 0.11
	18	*α* Andromedæ . .	E.	5.4	8.4	10.1	17.2	19.3	21.5	28.5	30.3	33.2	2 19.32	+ 0.07	−37.66	−37.65	0 1 41.74	+ 0.03
	19	*γ* Pegasi	E.	58.7	1.5	3.0	9.4	11.5	13.5	19.8	21.3	24.0	7 11.41	+ 0.17	−37.68	−37.65	0 6 33.93	+ 0.04
	20	*ε* Piscium . . .	E.	37.9	40.5	42.3	46.3	50.3	54.4	58.5	0.0	2.6	56 50.31	+ 0.22	−37.68	−37.66	0 56 12.87	+ 0.04
	21	Polaris	E.	. .	. .	37.5	0.5	26.0	49.0	16.5	. .	. .	12 26.42	−13.54	. .	−37.67	1 11 35.21	. .
	22	*θ*¹ Ceti	E.	57.4	0.0	1.5	7.6	9.6	11.6	18.0	19.6	22.0	18 9.70	+ 0.33	−37.72	−37.67	1 17 32.36	+ 0.07
	23	*η* Piscium . . .	E.	. .	. .	8.0	10.0	12.1	14.3	18.5	20.1	22.7	25 10.06	+ 0.17	−37.59	−37.67	1 24 32.56	− 0.01
17	24	Polaris	S.	. .	. .	55.5	19.5	. .	9.0	55.5	. .	. .	12 29.62	−14.89	. .	−37.87	1 11 36.86	+ 0.46
	25	*θ*¹ Ceti	S.	. .	. .	7.6	9.7	11.7	13.9	18.0	19.7	22.2	18 9.75	+ 0.50	−37.91	−37.87	1 17 32.38	+ 0.06
	26	*η* Piscium . . .	S.	0.2	1.9	6.0	8.1	10.2	12.3	14.5	18.7	20.3	25 10.24	+ 0.29	−37.86	−37.87	1 24 32.66	+ 0.06
	27	*o* Piscium . . .	S.	57.8	0.3	2.1	8.1	10.0	12.2	18.4	20.0	22.4	39 10.14	+ 0.35	−37.85	−37.88	1 38 32.61	− 0.06
	28	*β* Arietis	S.	53.3	55.9	57.6	4.0	6.1	8.3	14.9	16.5	19.1	48 6.19	+ 0.25	−37.92	−37.88	1 47 28.56	+ 0.05
	29	*α* Arietis	S.	16.1	18.8	20.5	27.0	29.3	31.6	38.1	39.9	42.6	0 29.32	+ 0.23	−37.87	−37.88	1 59 51.67	0.00
	30	*α* Aurigæ . . .	S.	25.3	29.0	31.3	. .	. .	. .	54.4	56.8	0.4	7 42.87	− 0.03	. .	−37.92	5 7 4.92	+ 0.03
	31	*β* Orionis. . . .	S.	42.2	44.8	46.4	52.3	54.5	56.6	2.7	4.2	6.8	8 54.50	+ 0.49	−37.95	−37.92	5 8 17.07	+ 0.02
	32	Venus II, N. . .	S.	57.8	0.5	2.1	8.6	11.0	13.2	19.7	21.4	24.2	19 10.93	+ 0.24	. .	−37.93	5 18 33.24	− 0.49
	33	Venus, S. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	34	*δ* Orionis. . . .	S.	. .	. .	55.0	57.0	59.0	1.1	3.2	. .	. .	25 59.07	+ 0.41	−37.94	−37.93	5 25 21.55	− 0.02
	35	*ε* Orionis. . . .	S.	. .	. .	. .	. .	. .	. .	22.4	24.0	26.4	30 14.24	+ 0.43	−38.05	−37.93	5 29 36.74	+ 0.11
	36	*α* Orionis. . . .	S.	35.5	37.0	41.1	43.2	45.2	47.2	49.2	53.4	55.0	48 45.20	+ 0.36	−37.96	−37.93	5 48 7.63	0.00
	37	Mercury II, C. .	S.	4.8	7.7	9.3	16.0	18.2	20.4	27.1	28.8	31.6	10 18.21	+ 0.22	. .	−37.95	7 9 30.48	− 0.19
18	38	Saturn I, S. . .	S.	. .	27.7	29.3	. .	. .	. .	47.0	48.6	51.2	30 38.11	+ 0.56	. .	−38.08	17 30 0.59	. .
	39	Saturn II . . .	S.	. .	. .	34.8	37.2	39.4	41.6	44.0	. .	. .	30 39.41	+ 0.56	. .	−38.08	17 30 1.89	. .
	40	*μ* Herculis . . .	S.	48.2	51.0	52.9	59.7	2.1	4.4	11.3	13.0	15.8	42 2.04	+ 0.12	−38.00	−38.09	17 41 24.07	− 0.09
	41	*δ* Ursæ Minoris. .	S.	51.5	34.0	1.5	. .	. .	. .	35.0	0.5	43.5	15 17.57	− 6.84	. .	−38.09	18 14 32.64	− 0.52
	42	*η* Serpentis . . .	S.	2.4	4.9	6.5	12.7	14.7	16.8	22.9	24.4	27.0	15 14.70	+ 0.39	−38.11	−38.09	18 14 37.00	+ 0.07
	43	1 Aquilæ	S.	35.3	37.9	39.5	45.5	47.7	49.8	56.0	57.5	0.0	28 47.69	+ 0.43	−38.08	−38.09	18 28 10.03	+ 0.06
	44	*α* Lyræ	S.	56.9	0.0	2.0	9.8	12.3	15.0	22.8	24.8	28.0	33 12.40	0.00	−38.01	−38.09	18 32 34.31	− 0.06
	45	*α* Aurigæ. . . .	E.	26.0	29.5	31.8	40.5	43.5	46.5	55.1	57.5	1.0	7 43.49	− 0.07	. .	−38.21	5 7 5.21	+ 0.29
	46	*β* Orionis. . . .	E.	42.8	45.4	46.9	53.1	55.0	57.1	3.3	5.0	7.6	8 55.13	+ 0.31	−38.38	−38.21	5 8 17.23	+ 0.16
	47	*β* Tauri	E.	28.4	31.5	33.4	40.1	42.6	44.8	51.8	53.5	56.7	18 42.53	+ 0.08	−38.44	−38.21	5 18 4.40	+ 0.21
	48	*ε* Orionis. . . .	E.	2.6	5.2	6.7	12.7	14.7	16.7	22.9	24.4	27.0	30 14.77	+ 0.26	−38.39	−38.22	5 29 36.81	+ 0.24

3. N. P. D. decreased by one revolution.
5, 6, 12. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	17 44	20.2	21.6	4.5	3.7	23	. .	. .	. .	065	055	66.8	17 48 41.2	. .	+ 17.5	68 55 19.9	
2	52 58	25.7	25.8	8.2	6.0	25	. .	875	. .	820	. .	70.7	53 1 59.5	. .	+ 1 13.2	104 9 33.9	+ 2.6
3	325 44	23.5	26.0	6.0	5.4	20	. .	582	. .	530	. .	70.7	325 49 6.6	. .	— 37.5	16 54 50.3	+ 0.3
4	47 14	19.0	20.7	2.0	0.8	25	. .	235	. .	172	. .	70.7	47 18 15.1	. .	+ 59.8	98 25 36.1	+ 1.0
5	38 6	25.4	26.3	8.0	6.0	27	120	. .	. .	. .	110	70.7	38 9 40.2	. .	+ 43.3	89 16 44.7	+ 1.0
6	295 14	19.2	20.5	1.5	1.9	23	840	. .	. .	. .	780	70.7	295 18 36.0	. .	— 1 56.1	346 23 1.1	+ 0.7
7	39 36	21.2	23.2	4.4	3.2	26	. .	290	. .	270	. .	70.7	39 39 56.4	. .	+ 45.7	90 47 3.3	+ 0.7
8	28 40	20.3	22.3	3.6	1.0	26	. .	715	. .	700	. .	70.7	28 43 51.1	. .	+ 30.3	79 50 42.6	+ 2.4
9	47 4	23.6	26.6	8.5	7.3	22	. .	. .	950	930	. .	70.7	47 8 42.8	. .	+ 59.4	98 16 3.4	+ 1.0
10	69 6	20.0	22.3	2.3	1.5	27	. .	615	. .	500	. .	70.7	69 9 38.1	. .	+ 2 23.8	120 18 23.1	+ 2.0
11	155 34	20.3	20.5	2.3	1.0	29	105	110	. .	120	128	70.7	155 37 14.8	. .	— 25.0	75 29 31.4	— 0.2
12	331 26	17.8	20.6	1.6	29.4	25	158	. .	. .	. .	210	70.7	331 30 16.5	. .	— 30.0	22 36 7.7	— 0.6
13	33 8	19.0	21.2	1.5	0.4	22	. .	190	. .	150	. .	70.7	33 13 1.7	. .	+ 36.2	84 19 59.1	+ 1.9
14	47 58	23.8	25.2	6.7	5.2	25	460	600	865	140	378	70.7	48 2 0.1	. .	+ 1 1.4	99 9 22.7	
15	33 54	19.2	20.0	1.5	0.0	27	. .	738	. .	642	. .	70.7	33 57 37.6	. .	+ 37.2	85 4 36.0	+ 2.1
16	325 8	14.0	14.7	24.4	25.2	21	. .	740	. .	682	. .	70.7	325 13 15.2	. .	— 38.4	16 18 58.0	— 1.5
17	32 40	18.4	21.5	1.3	29.2	24	930	910	. .	890	850	70.7	32 44 20.5	. .	+ 35.5	83 51 17.2	+ 0.9
18	10 26	20.0	23.1	5.0	1.4	21	. .	595	. .	560	. .	70.7	10 31 9.0	. .	+ 10.3	71 37 40.5	+ 1.3
19	24 20	17.1	19.0	29.2	27.5	20	328	. .	. .	. .	288	70.7	24 25 32.7	. .	+ 25.1	75 32 19.0	+ 1.5
20	31 38	10 21.3	24.8	5.8	4.0	27	. .	435	. .	390	. .	70.7	31 41 28.1	. .	+ 34.1	82 48 23.4	+ 1.1
21	310 14	10 10.6	14.0	25.5	25.8	26	440	420	500	490	500	70.7	310 18 2.7	. .	— 1 5.1	1 23 18.8	+ 0.8
22	47 40	13.7	18.2	29.7	28.2	27	. .	280	. .	260	. .	70.7	47 43 46.7	. .	+ 1 0.8	98 51 8.7	+ 1.8
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31	47 10	22.0	24.5	5.3	3.3	26	. .	. .	406	414	. .	68.5	47 13 50.2	. .	+ 58.2	98 21 9.6	— 1.2
32	17 12	23.6	25.8	6.6	4.0	24	835	800	. .	. .	. .	68.5	17 16 15.7	. .	+ 16.7	68 22 53.6	
33	17 12	23.6	25.8	6.6	4.0	23	. .	. .	. .	878	868	68.5	17 16 28.3	. .	+ 16.7	68 23 6.2	
34	39 12	21.2	24.0	4.1	3.0	23	. .	. .	. .	. .	900	68.5	39 16 44.4	. .	+ 44.0	90 23 49.6	— 1.0
35	40 6	21.0	23.0	4.2	2.2	25	. .	. .	. .	448	487	68.5	40 10 5.9	. .	+ 45.4	91 17 12.5	— 0.1
36	31 26	23.9	26.4	6.0	4.3	24	680	690	. .	552	576	68.5	31 30 17.4	. .	+ 32.9	82 37 11.5	+ 0.6
37	15 36	18.8	20.7	2.7	0.6	25	001	014	. .	910	907	68.5	15 40 16.9	. .	+ 15.0	66 46 53.1	
38	60 52	24.3	25.3	7.3	5.5	25	. .	. .	. .	618	. .	70.5	60 56 2.7	. .	+ 1 38.5	112 4 2.4	
39																	
40	11 2	27.5	28.9	10.4	6.3	28	125	077	. .	040	978	70.5	11 5 24.0	. .	+ 10.8	62 11 56.0	+ 1.5
41																	
42	41 44	24.9	26.0	7.6	4.7	23	. .	728	. .	680	. .	70.5	41 48 32.8	. .	+ 49.2	92 55 43.2	+ 1.9
43	47 8	0.7	2.1	12.8	11.3	23	. .	. .	. .	368	. .	70.5	47 12 31.0	. .	+ 59.4	98 19 51.6	+ 1.8
44	0 10	27.5	29.0	10.1	6.6	27	. .	. .	. .	186	230	70.5	0 13 35.8	. .	+ 0.2	51 19 57.2	— 1.5
45	352 58	18.7	20.3	2.3	1.3	25	612	582	. .	. .	. .	68.4	353 2 8.6	. .	— 6.6	44 8 23.2	— 0.4
46	47 10	16.1	20.7	1.6	0.7	26	. .	570	. .	456	. .	68.4	47 13 53.8	. .	+ 58.6	98 21 13.6	+ 3.0
47	10 20	15.8	19.0	0.6	29.3	26	. .	720	. .	690	. .	68.4	10 23 52.2	. .	+ 10.0	61 30 23.4	+ 0.1
48	40 6	21.6	24.4	7.2	4.4	25	525	470	. .	445	408	68.4	40 10 5.2	. .	+ 45.8	91 17 12.2	— 0.2

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	. .	. .	96.3
8	30.050	81.5	78.0
20	. .	. .	77.3
21	30.066	80.5	77.5
31	. .	. .	90.9
35	30.030	85.0	91.8
36	. .	. .	92.8
37	. .	. .	96.8
38	29.972	83.0	79.0
40	29.968	82.0	79.0
42	. .	. .	78.0
44	29.960	81.0	77.6
47	30.000	83.2	86.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	— 2.7	— 15 45.8	. .	— 15 48.5
14	—41 5.0	+ 15 8.8	. .	— 25 56.2
32	— 2.1	+ 6.3	. .	+ 4.2
33	— 2.1	— 6.3	0.0	— 8.4
37	— 1.9	. . .	0.0	— 1.9
38	— 0.8	— 8.5	. .	— 9.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 19	1	Sun I, N. . . .	E.	27.4	30.0	31.7	38.3	40.5	42.7	49.2	51.0	53.8	54 40.51	+ 0.12	. .	−38.27	7 54 2.36	. .
	2	Sun II, S. . . .	E.	42.7	45.5	47.3	53.6	55.8	58.0	4.5	6.3	9.0	56 55.86	+ 0.12	. .	−38.27	7 56 17.71	. .
	3	η Herculis . . .	E.	50.6	54.0	56.0	3.9	6.5	9.2	16.9	18.9	22.2	39 6.47	− 0.03	−38.40	−38.47	16 38 27.97	− 0.06
	4	9 Camelopard., S. P.	E.	15.7	9.6	5.8	50.7	45.5	40.8	25.5	21.8	15.4	41 45.64	+ 0.83	. .	−38.47	4 41 8.00	+ 0.31
	5	κ Ophiuchi, (R.). .	E.	58.2	0.7	2.5	8.6	10.7	12.6	19.0	20.5	23.0	52 10.64	+ 0.30	. .	−38.48	16 52 32.46	− 0.11
	6	*d* Herculis . . .	E.	13.7	16.9	18.8	26.0	28.5	31.0	38.3	40.2	43.4	57 28.53	+ 0.01	. .	−38.48	16 56 50.06	+ 0.07
	7	α^1 Herculis . . .	E.	10.5	13.1	14.7	20.9	23.1	25.3	31.5	33.2	35.7	9 23.11	+ 0.28	. .	−38.48	17 8 44.91	− 0.04
	8	44 Ophiuchi . . .	E.	52.7	55.4	57.3	3.7	6.0	8.2	15.0	16.6	19.5	19 6.04	+ 0.39	−38.36	−38.49	17 18 27.94	− 0.10
	9	Groom. 966, S. P. .	E.	43.8	34.1	27.8	4.7	57.1	48.8	25.5	19.5	9.4	22 56.74	+ 1.27	. .	−38.49	5 22 19.52	+ 0.03
	10	Saturn I, S. . .	E.	11.2	13.9	15.8	. .	. .	. .	33.2	34.9	37.4	30 24.39	+ 0.37	. .	−38.49	17 29 46.27	. .
	11	Saturn II, N. . .	E.	. .	. .	21.2	23.5	25.8	28.0	30.2	. .	. .	30 25.75	+ 0.37	. .	−38.49	17 29 47.63	. .
	12	ω Draconis . . .	E.	. .	. .	13.5	19.0	24.8	30.4	36.1	. .	. .	38 24.79	− 0.45	. .	−38.50	17 37 45.84	− 0.11
	13	ψ^1 Draconis, (R.) . .	E.	. .	. .	51.2	58.0	4.0	10.4	24.6	29.4	37.5	44 57.65	− 0.32	. .	−38.50	17 44 18.83	+ 0.01
	14	γ Draconis . . .	E.	56.6	0.7	3.4	12.8	16.1	19.5	29.3	31.7	35.6	54 16.19	− 0.17	. .	−38.50	17 53 37.52	− 0.13
	15	γ^2 Sagittarii . . .	E.	. .	. .	2.9	5.3	7.8	10.1	12.4	. .	. .	58 7.71	+ 0.44	−38.35	−38.51	17 57 29.64	− 0.15
	16	μ^1 Sagittarii . . .	E.	26.4	29.3	30.8	37.4	39.4	41.6	48.4	50.0	52.7	6 39.56	+ 0.37	−38.40	−38.55	18 6 1.42	− 0.10
	17	δ Ursæ Minoris . .	E.	. .	. .	6.5	41.0	16.0	51.0	25.5	. .	. .	15 16.18	− 4.70	. .	−38.51	18 14 32.97	− 0.02
	18	1 Aquilæ. . . .	E.	. .	. .	44.0	46.2	48.2	50.1	52.2	. .	. .	28 48.15	+ 0.28	−38.39	−38.51	18 28 9.92	− 0.05
	19	α Lyræ . . .	E.	57.2	0.5	2.5	10.1	13.0	15.7	23.5	25.4	28.5	33 12.93	− 0.02	−38.52	−38.52	18 32 34.39	+ 0.02
	20	51 Cephei, S. P. . .	E.	. .	. .	23.0	38.5	56.5	14.5	33.0	. .	. .	38 56.88	+ 6.18	. .	−38.52	6 38 24.54	+ 1.84
	21	β Lyræ	E.	. .	. .	52.5	55.0	57.2	0.0	2.4	. .	. .	45 57.43	+ 0.02	−38.49	−38.53	18 45 18.92	− 0.01
	22	Polaris	E.	. .	. .	43.0	7.0	30.5	53.5	19.2	. .	. .	12 31.45	−11.67	. .	−38.67	1 11 41.11	+ 2.99
	23	θ^1 Ceti	E.	58.4	0.9	2.6	8.7	10.8	12.9	19.0	20.5	23.2	18 10.78	+ 0.29	−38.67	−38.67	1 17 32.40	+ 0.02
	24	η Piscium . . .	E.	58.6	1.4	3.0	9.1	11.1	13.3	19.6	21.3	23.8	25 11.24	+ 0.15	−38.66	−38.67	1 24 32.72	+ 0.06
	25	ο Piscium . . .	E.	58.9	1.4	3.0	9.2	11.2	13.3	19.5	21.0	23.6	39 11.23	+ 0.18	−38.71	−38.68	1 39 32.73	0.00
	26	Moon II, N. . .	E.	. .	. .	30.7	32.8	34.8	36.9	39.0	. .	. .	45 34.85	+ 0.20	. .	−38.68	1 44 56.37	−61.42
	27	α Arietis	E.	17.2	19.9	21.6	28.1	30.3	32.5	39.2	40.9	43.6	0 30.37	+ 0.09	−38.72	−38.69	1 59 51.77	+ 0.04
	28	δ Orionis. . . .	F.	48.0	50.6	52.1	56.0	0.2	4.1	7.9	9.5	12.2	26 0.07	+ 0.32	−38.81	−38.89	2 55 21.50	− 0.11
	29	α Orionis. . . .	F.	34.0	38.1	. .	44.2	46.3	48.3	. .	54.5	59.6	48 46.29	+ 0.26	−38.81	−38.90	5 48 7.65	− 0.02
	30	γ Geminorum . .	F.	. .	. .	45.9	48.0	50.2	52.3	54.5	. .	. .	30 50.19	+ 0.19	−38.79	−38.91	6 30 11.47	+ 0.15
	31	α Canis Majoris. .	F.	50.0	52.7	54.4	0.7	2.7	5.0	11.4	13.0	15.6	40 2.83	+ 0.46	−39.03	−38.91	6 39 24.38	+ 0.04
20	32	Sun, S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	33	α Hydræ	F.	37.7	40.3	42.0	48.0	50.0	52.0	58.3	59.8	2.5	21 50.07	+ 0.39	−39.03	−38.96	9 21 11.50	+ 0.04
	34	β Tauri	S.	29.3	32.2	34.0	40.8	43.2	45.6	52.4	54.2	57.0	18 43 19	− 0.03	−38.94	−38.88	5 18 4.28	+ 0.04
	35	Venus II, N. . .	S.	6.9	9.8	11.4	18.0	20.1	22.3	29.0	30.6	33.6	34 20.19	+ 0.01	. .	−38.89	5 33 41.31	− 0.49
	36	Venus, S. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	37	α Orionis. . . .	S.	34.1	36.7	38.3	44.4	46.6	48.5	54.8	56.3	58.8	48 46.46	+ 0.10	−38.90	−38.89	5 48 7.67	− 0.02
	38	γ Geminorum . .	S.	. .	. .	. .	50.6	52.7	54.8	59.0	0.7	3.2	30 50.55	+ 0.05	−38.99	−38.90	6 30 11.70	+ 0.06
	39	α Canis Majoris. .	S.	50.4	53.0	54.7	1.0	3.1	5.3	11.5	13.4	16.0	40 3.16	+ 0.15	−39.04	−38.90	6 39 24.41	+ 0.06
21	40	Sun I, N. . . .	S.	28.0	30.9	32.8	39.1	41.5	43.6	50.1	51.9	54.4	2 41.37	+ 0.02	. .	−38.92	8 2 2.47	. .
	41	Sun II, S. . . .	S.	43.3	46.0	47.5	54.3	56.5	58.5	5.1	6.8	9.6	4 56.40	+ 0.02	. .	−38.92	8 4 17.50	. .
	42	Saturn I, S. . .	S.	44.6	47.3	49.3	. .	. .	. .	6.8	8.4	11.0	29 57.89	+ 0.26	. .	−39.05	17 29 19.10	. .
	43	Saturn II, N. . .	S.	. .	. .	54.7	57.0	59.1	1.3	3.5	. .	. .	29 59.13	+ 0.26	. .	−39.05	17 29 20.34	. .
	44	μ Herculis . . .	S.	. .	. .	58.5	0.9	3.2	5.6	8.0	. .	. .	42 3.24	− 0.05	−39.05	−39.06	17 41 24.13	− 0.01
	45	γ Draconis . . .	S.	57.4	1.4	4.0	13.6	17.0	20.2	30.0	32.5	36.8	54 16.99	− 0.26	. .	−39.06	17 53 37.67	+ 0.05
	46	δ Ursæ Minoris. .	S.	. .	. .	. .	. .	. .	. .	33.0	0.0	42.0	15 15.47	− 0.46	. .	−39.06	18 14 32.80	+ 0.22
	47	1 Aquilæ. . . .	S.	36.6	39.2	40.9	46.9	48.8	51.0	57.1	58.8	1.5	28 48.98	− 0.17	−39.11	−39.07	18 28 10.08	+ 0.11
	48	α Lyræ	S.	58.0	1.3	3.2	11.0	13.7	16.2	24.2	26.0	29.3	33 13.66	− 0.13	−39.15	−39.07	18 32 34.46	+ 0.10
	49	51 Cephei, S. P. . .	S.	20.0	38.5	56.0	14.0	31.5	5.0	36.0	. .	. .	38 55.30	+ 5.82	. .	−39.07	6 38 22.55	− 0.59
	50	β Tauri	E.	. .	39.2	41.4	43.8	46.1	48.4	. .	. .	. .	18 43.79	− 0.09	−39.45	−39.45	5 18 4.35	+ 0.08

12. Bisections at C_1 and C_5.
13, 18. Bisections at wires V–VII.
15, 21. Bisections at wires III and V.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	17 44	16.2	18.6	0.7	29.7	24	278	205	. .	. .	. .	68.4	17 48 31.0	. .	+ 17.2	68 55 9.4	
2	18 16	14.0	16.5	28.4	27.6	26	. .	. .	. .	150	135	68.4	18 20 1.5	. .	+ 17.7	69 26 40.4	
3	359 40	25.4	26.8	7.5	4.7	28	. .	930	. .	910	. .	69.4	359 43 11.9	. .	− 0.3	50 49 32.8	+ 2.6
4	285 0	26.0	26.5	7.0	7.5	26	. .	365	. .	340	. .	69.4	285 3 49.6	. .	− 3 20.1	336 6 50.7	0.0
5	150 38	25.0	25.0	6.0	5.8	26	. .	742	. .	708	. .	69.4	150 41 45.8	. .	− 30.8	80 25 6.2	0.0
6	5 4	25.8	27.6	8.8	5.7	26	. .	208	. .	172	. .	69.4	5 7 52.8	. .	+ 4.9	57 14 18.9	+ 1.4
7	155 36	20.6	19.5	2.0	1.0	28	. .	615	. .	495	. .	69.4	155 39 22.4	. .	− 24.8	75 27 23.6	− 0.8
8	62 50	20.2	23.5	4.5	2.6	21	. .	980	. .	925	. .	69.4	62 55 1.4	. .	+ 1 46.9	114 3 9.5	+ 2.0
9	293 48	22.3	23.0	5.0	3.8	23	. .	540	. .	600	. .	69.4	293 52 34.8	. .	− 2 3.3	344 56 52.7	− 0.2
10	60 52	27.7	28.7	10.6	9.5	25	520	. .	. .	. .	355	69.4	60 56 1.5	. .	+ 1 38.4	112 4 1.1	
11	60 52	27.7	28.7	10.6	9.5	26	. .	782	. .	770	. .	69.4	60 55 41.3	. .	+ 1 38.4	112 3 40.9	
12	330 2	22.5	24.6	5.3	3.7	30	. .	372	. .	315	. .	69.4	330 4 51.9	. .	− 31.6	21 10 41.5	− 2.5
13	213 16	25.3	25.9	7.9	5.2	30	. .	. .	925	880	788	69.4	213 18 39.8	. .	+ 36.1	17 47 5.3	+ 1.5
14	347 20	26.1	26.8	8.1	5.6	28	. .	362	. .	348	. .	69.4	347 23 20.1	. .	− 12.3	38 29 29.0	− 0.1
15	69 12	22.4	23.2	4.5	3.4	23	. .	680	. .	565	. .	69.4	69 16 35.3	. .	+ 2 24.1	120 25 20.6	+ 0.8
16	59 52	23.5	25.3	6.8	5.7	20	. .	062	. .	. .	. .	69.4	59 57 28.6	. .	+ 1 34.8	111 5 24.6	+ 4.8
17	312 14	21.0	21.0	3.5	2.0	25	580	565	550	575	570	69.4	312 18 7.2	. .	− 1 0.4	3 23 28.0	+ 0.4
18	47 8	25.0	27.2	8.2	6.8	23	. .	. .	. .	690	642	69.4	47 12 30.4	. .	+ 59.4	98 19 51.0	+ 1.3
19	0 10	27.0	28.5	10.4	7.8	27	. .	162	. .	050	. .	69.4	0 13 37.3	. .	+ 0.2	51 19 58.7	+ 0.3
20	306 6	28.4	29.8	9.7	10.4	29	010	970	985	008	970	69.4	306 9 7.0	. .	− 1 15.3	357 14 12.9	− 0.1
21	5 36	25.8	26.8	4.0	3.7	23	. .	435	. .	350	. .	69.4	5 40 37.2	. .	+ 5.5	56 47 3.9	+ 1.8
22	310 14	21.9	24.2	7.5	5.6	25	755	700	670	640	680	69.4	310 18 2.6	. .	− 1 5.7	1 23 18.1	+ 0.4
23	47 40	17.9	21.0	3.3	1.4	27	068	060	. .	965	940	69.4	47 43 46.0	. .	+ 1 1.4	98 51 8.6	+ 2.3
24	24 8	10 16.4	18.5	29.5	29.1	23	. .	495	. .	440	. .	69.4	24 12 42.8	. .	+ 25.1	75 19 29.1	+ 1.3
25	30 18	10 15.2	18.8	29.2	28.6	22	. .	820	. .	775	. .	69.4	30 22 53.4	. .	+ 32.7	81 29 47.3	+ 0.2
26	33 54	16.1	19.7	1.4	0.2	19	970	140	340	640	865	69.4	33 59 28.8	. .	+ 37.6	85 6 27.6	
27	15 58	18.5	21.3	2.5	0.5	23	. .	715	. .	625	. .	69.4	16 2 37.5	. .	+ 16.0	67 9 14.7	+ 0.8
28	39 12	19.2	21.8	2.5	3.3	23	. .	. .	. .	090	. .	68.2	39 16 43.1	. .	+ 44.4	90 23 48.7	− 1.5
29	31 26	12.6	15.3	25.7	25.9	25	438	390	. .	266	252	68.2	31 30 16.6	. .	+ 33.2	82 37 11.0	+ 0.3
30																	
31	55 20	17.2	20.0	1.3	0.8	23	236	204	. .	158	112	68.2	55 24 44.4	. .	+ 1 18.1	106 32 23.7	+ 0.4
32	18 26	23.6	27.0	7.7	5.2	21	110	070	. .	. .	. .	68.2	18 31 12.0	. .	+ 17.9	69 37 51.1	
33	46 54	20.6	23.2	4.9	3.8	23	850	. .	744	. .	. .	68.2	46 58 31.8	. .	+ 57.0	98 5 50.0	+ 0.3
34	10 20	20.5	23.2	4.9	3.0	26	438	409	. .	290	307	67.3	10 23 52.2	. .	+ 10.0	61 30 23.4	+ 0.1
35	16 52	22.7	25.1	5.3	3.8	.	442	401	. .	. .	. .	67.3	16 55 50.9	. .	+ 16.6	68 2 28.7	
36	16 52	22.7	25.1	5.3	3.8	25	. .	. .	. .	422	388	67.3	16 56 4.4	. .	+ 16.6	68 2 42.2	
37																	
38																	
39	55 20	19.6	22.2	3.5	2.6	23	090	993	. .	. .	881	67.3	55 24 44.2	. .	+ 1 18.2	106 32 23.6	+ 0.5
40	18 6	10 15.0	15.8	28.0	28.5	21	868	756	. .	. .	. .	67.3	18 11 9.0	. .	+ 17.7	69 17 47.9	
41	18 38	10 11.8	12.8	23.7	23.7	23	. .	. .	. .	902	880	67.3	18 42 38.5	. .	+ 18.2	69 49 17.9	
42	60 52	24.8	25.6	8.3	6.2	.	. .	. .	728	. .	. .	67.5	60 55 59.2	. .	+ 1 38.7	82 3 59.1	
43	60 52	24.8	25.6	8.3	6.2	26	. .	. .	. .	990	. .	67.5	60 55 38.1	. .	+ 1 38.7	112 3 38.0	
44																	
45	347 20	24.6	24.7	6.8	4.0	28	. .	449	. .	445	. .	67.5	347 23 18.5	. .	− 12.4	38 29 27.3	− 1.3
46																	
47	47 8	26.9	28.2	10.4	7.6	23	593	. .	. .	. .	. .	67.5	47 12 30.3	. .	+ 59.9	98 19 51.4	+ 1.8
48																	
49	306 6	22.5	22.4	3.7	3.4	29	422	386	386	438	370	67.5	306 9 5.4	. .	− 1 15.9	357 14 10.7	− 1.6
50	10 20	15.4	17.3	0.3	28.6	26	. .	705	. .	650	. .	68.0	10 23 53.0	. .	+ 10.1	61 30 24.3	+ 1.1

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
2	. .	. .	94.0
13	. .	. .	79.5
17	30.010	82.5	
22	30.042	77.0	72.5
29	30.088	82.0	88.9
31	30.096	83.0	90.9
32	30.066	84.0	94.6
33	30.050	85.0	97.5
34	. .	. .	85.0
37	. .	. .	88.6
38	30.073	81.0	
39	. .	. .	90.1
40	. .	. .	92.5
42	30.058	81.5	78.8
44	. .	. .	78.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 2.7	+ 15 45.5	. .	+ 15 42.8
2	− 2.7	− 15 45.5	. .	− 15 48.2
10	− 0.8	− 10.1	. .	− 10.9
11	− 0.8	+ 10.1	. .	+ 9.3
26	− 30 10.3	+ 14 49.4	. .	− 15 20.9
32	− 2.8	− 15 46.3	. .	− 15 49.1
35	− 1.9	+ 6.8	. .	+ 4.9
36	− 1.9	− 6.8	+ 0.1	− 8.6
40	− 2.7	+ 15 45.0	. .	+ 15 42.3
41	− 2.7	− 15 45.0	. .	− 15 47.7
42	− 0.8	− 10.6	. .	− 11.4
43	− 0.8	+ 10.5	. .	+ 9.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 21	1	Venus II, N. . .	E.	11.7	14.5	16.2	22.7	25.0	27.2	33.9	35.6	38.3	39 25.01	− 0.05	. .	−39.45	5 38 45.51	− 0.48
	2	α Orionis. . . .	E.	34.9	37.4	38.9	45.0	47.0	49.1	55.3	56.8	59.5	48 47.10	+ 0.02	−39.44	−39.45	5 48 7.67	− 0.04
22	3	Sun S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	4	Sun N.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	5	γ Geminorum . .	F.	38.8	41.5	43.0	49.4	51.5	53.5	0.0	1.5	4.1	30 51.48	− 0.03	−39.80	−39.79	6 30 11.66	− 0.02
	6	ε Canis Majoris. .	F.	56.0	58.8	0.5	7.4	9.7	12.1	19.0	20.8	23.7	54 9.78	+ 0.23	−39.84	−39.80	6 53 30.21	− 0.03
23	7	Sun I, S. . . .	F.	27.4	30.0	31.8	38.2	40.0	42.5	49.1	50.8	53.4	10 40.40	− 0.05	. .	−39.82	8 10 0.53	. .
	8	Sun II, N. . . .	F.	42.0	44.7	46.4	50.7	55.0	59.3	3.8	5.4	8.1	12 55.04	− 0.05	. .	−39.82	8 12 15.17	. .
	9	α Leonis	F.	53.7	56.3	58.0	4.1	6.3	8.3	14.6	16.1	18.7	2 6.23	− 0.02	−39.81	−39.84	10 1 26.37	− 0.07
	10	γ^1 Leonis	F.	14.7	17.3	19.1	23.4	27.6	32.0	36.3	37.9	40.6	13 27.66	− 0.05	−39.91	−39.84	10 12 47.77	+ 0.05
	11	δ Leonis	F.	37.9	42.5	47.0	49.1	51.2	53.4	55.5	0.0	4.3	7 51.21	− 0.05	−39.88	−39.85	11 7 11.31	− 0.03
	12	Polaris, S. P. . .	F.	. .	. .	0.5	36.0	12.5	48.0	24.5	. .	. .	12 11.58	+ 9.47	. .	−39.88	1 11 41.17	− 0.27
	13	Saturn I, N. . .	F.	19.3	22.0	23.5	. .	. .	. .	41.3	42.9	45.5	29 32.41	+ 0.17	. .	−39.94	17 28 52.64	. .
	14	Saturn II, S. . .	F.	. .	. .	29.4	31.6	33.7	35.8	38.1	. .	. .	29 33.73	+ 0.17	. .	−39.94	17 28 53.96	. .
	15	μ^1 Sagittarii . . .	F.	28.2	31.0	32.6	39.3	41.4	43.5	50.1	51.7	54.5	6 41.37	+ 0.16	−40.00	−39.95	18 6 1.58	+ 0.06
	16	δ Ursæ Minoris . .	F.	. .	. .	6.0	40.5	14.5	49.0	23.0	. .	. .	15 14.78	− 3.31	. .	−39.95	18 14 31.52	− 0.56
	17	1 Aquilæ. . . .	F.	37.5	40.1	41.7	47.8	50.0	52.0	58.1	59.7	2.1	28 49.89	+ 0.10	−39.95	−39.95	18 28 10.04	+ 0.07
	18	Euterpe . . .	F.	41.3	44.0	46.0	52.0	54.6	56.9	3.7	5.4	8.0	32 54.66	+ 0.18	. .	−39.95	18 32 14.89	. .
	19	51 Cephei, S. P. . .	F.	. .	. .	. .	. .	24.0	42.0	59.0	. .	. .	38 59.23	+ 4.05	. .	−39.95	6 38 23.33	− 0.39
	20	β Lyræ	F.	44.4	47.5	49.5	56.5	59.0	1.5	8.8	10.6	13.6	45 59.04	− 0.10	−39.99	−39.95	18 45 18.99	+ 0.07
	21	σ Sagittarii . . .	F.	40.5	43.5	49.8	52.0	54.2	56.6	58.8	5.1	7.9	47 54.27	+ 0.20	−39.89	−39.96	18 47 14.51	− 0.06
	22	ζ Aquilæ. . . .	F.	55.5	58.1	59.7	6.0	8.0	10.2	16.4	18.0	20.7	0 8.07	0.00	−39.92	−39.96	18 59 28.11	− 0.06
	23	Massalia . . .	F.	8.2	10.8	11.4	16.6	18.8	20.8	22.5	24.5	. .	8 20.74	+ 0.16	. .	−39.96	19 7 40.94	. .
	24	67 Piazzi, S. P. . .	F.	. .	. .	8.0	2.8	57.0	51.5	. .	. .	. .	17 57.00	+ 0.49	. .	−39.96	7 17 17.53	− 0.13
	25	κ Aquilæ. . . .	F.	23.5	26.0	27.5	33.8	35.8	37.9	44.0	45.6	49.1	30 35.91	+ 0.09	−40.05	−39.97	19 29 56.03	+ 0.12
	26	γ Aquilæ. . . .	F.	34.4	36.9	38.5	44.7	46.8	48.8	55.0	56.5	59.1	40 46.74	+ 0.02	−39.91	−39.97	19 40 6.79	− 0.03
	27	α Aquilæ. . . .	F.	56.2	58.7	0.2	6.4	8.4	10.5	16.7	18.3	20.8	45 8.47	+ 0.02	−39.95	−39.97	19 44 28.52	+ 0.02
	28	β Aquilæ. . . .	F.	28.0	29.5	33.6	35.6	37.6	39.6	41.8	45.9	47.4	49 37.70	+ 0.04	−40.00	−39.97	19 48 57.77	+ 0.06
	29	π Capricorni. . .	F.	21.9	24.6	26.1	32.5	34.7	36.8	43.3	45.0	47.6	20 34.72	+ 0.15	−39.95	−39.98	20 19 54.89	0.00
	30	Hebe	F.	20.5	23.0	24.6	30.7	32.7	34.8	41.2	42.8	45.2	41 32.83	+ 0.12	. .	−39.98	20 40 52.97	. .
	31	ν Cygni	F.	46.0	49.5	51.4	59.4	2.0	4.8	12.9	14.9	18.2	53 2.12	− 0.14	−39.91	−39.98	20 52 22.00	− 0.01
25	32	Sun I, S. . . .	E.	23.8	26.4	28.2	34.5	36.7	38.8	45.4	47.0	49.9	18 36.74	+ 0.03	. .	. .	. . . .	. .
	33	Sun II, N. . . .	E.	38.1	40.9	42.5	48.9	51.0	53.3	59.8	1.4	4.0	20 51.10	+ 0.03	. .	. .	. . . .	. .
	34	α Aurigæ. . . .	F.	. .	. .	40.2	43.0	46.0	48.9	52.0	. .	. .	7 46.04	− 0.19	. .	−40.77	5 7 5.08	− 0.09
	35	β Orionis. . . .	F.	45.4	48.1	49.6	55.8	57.9	0.0	6.0	7.6	10.2	8 57.84	+ 0.17	−40.78	−40.77	5 8 17.24	0.00
	36	β Tauri	F.	31.3	34.1	36.0	42.8	45.2	47.6	54.4	56.2	59.0	18 45.18	− 0.05	−40.77	−40.77	5 18 4.34	− 0.04
	37	α Orionis. . . .	F.	. .	44.4	46.4	48.3	50.5	52.5	56.6	58.3	0.8	48 48.45	+ 0.07	−40.84	−40.78	5 48 7.74	+ 0.03
26	38	Sun I, S. . . .	F.	21.0	23.8	25.4	31.7	34.0	36.3	42.7	44.4	47.1	22 34.04	+ 0.01	. .	−40.81	8 21 53.24	. .
	39	Sun II, N. . . .	F.	35.3	38.0	43.9	46.1	48.3	50.4	52.5	58.6	1.2	24 48.26	+ 0.01	. .	−41.81	8 24 7.46	. .
	40	β Leonis	F.	53.7	56.2	58.0	4.3	6.3	8.4	14.8	16.4	18.9	43 6.33	+ 0.03	−40.81	−40.86	11 42 25.50	− 0.07
	41	Polaris, S. P. . .	F.	. .	. .	4.0	39.5	15.5	51.0	27.0	. .	. .	12 14.88	+ 9.99	. .	−40.88	1 11 43.99	. .
	42	α Virginis . . .	F.	49.7	52.3	53.9	59.9	2.0	4.1	10.4	12.0	14.4	19 2.08	+ 0.19	−40.87	−40.88	13 19 21.39	− 0.03
27	43	α Aurigæ. . . .	E.	29.4	33.0	35.2	44.0	47.0	49.8	58.7	0.6	4.6	7 46.92	− 0.23	. .	−41.43	5 7 5.26	+ 0.02
	44	β Orionis. . . .	E.	46.4	48.9	50.5	56.6	58.6	0.7	6.9	8.4	11.0	8 58.67	+ 0.06	−41.45	−41.43	5 8 17.30	+ 0.01
	45	β Tauri	E.	32.0	35.0	36.8	43.6	46.0	48.2	55.3	57.0	59.9	18 45.98	− 0.12	−41.44	−41.43	5 18 4.43	− 0.01
	46	ε Orionis. . . .	E.	6.0	8.5	10.2	16.2	18.2	20.3	26.4	28.0	30.4	30 18.24	+ 0.02	−41.41	−41.45	5 30 36.81	+ 0.05
	47	α Orionis. . . .	E.	36.9	39.5	41.0	47.1	49.2	51.4	57.5	59.0	1.6	48 49.24	− 0.03	−41.38	−41.45	5 48 7.77	− 0.09

18, 23. Wire A used.
34. Bisection at wire B_1.
34, 35. Changed one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan's Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	16 46	17.3	18.3	1.6	29.7	25	410	370	. .	205	190	68.0	16 50 12.8	. .	+ 16.7	67 56 50.7	
2	31 26	18.2	20.7	2.5	1.6	24	. .	920	. .	885	. .	68.0	31 30 17.1	. .	+ 33.7	82 37 12.0	+ 1.5
3	18 50	20.2	22.0	5.3	3.4	23	850	815	. .	. .	. .	68.0	18 54 33.0	. .	+ 18.6	70 1 12.8	
4	18 18	22.0	23.0	6.5	3.3	21	. .	. .	. .	935	890	68.0	18 22 58.6	. .	+ 18.0	69 29 37.8	
5	22 18	17.4	19.0	1.3	0.9	22	. .	. .	. .	625	588	67.0	22 22 51.3	. .	+ 22.3	73 29 34.8	+ 1.4
6	67 34	14.9	16.0	28.5	28.6	21	. .	342	. .	280	. .	67.0	67 39 14.5	. .	+ 2 10.0	118 47 45.7	− 0.8
7	19 2	21.8	23.7	5.4	3.8	23	020	012	. .	. .	. .	67.0	19 6 41.6	. .	+ 18.7	70 13 21.5	
8	18 30	22.5	25.7	8.3	6.5	20	. .	. .	. .	786	796	67.0	18 35 12.7	. .	+ 18.1	69 41 52.0	
9	26 12	10 18.3	19.7	1.3	0.3	21	610	595	. .	560	551	67.0	26 17 7.8	. .	+ 26.6	77 23 55.6	+ 2.5
10	18 20	13.2	15.7	26.9	27.5	28	508	486	. .	400	394	67.0	18 23 27.0	. .	+ 17.9	69 30 6.1	+ 2.2
11	17 34	18.8	20.3	1.8	0.6	21	. .	390	. .	304	. .	67.0	17 39 10.9	. .	+ 17.1	68 45 49.2	+ 1.5
12	307 28	13.2	16.2	26.6	29.6	28	158	168	168	128	080	67.0	307 31 30.7	. .	− 1 9.8	358 36 42.1	− 0.7
13	60 52	22.2	22.8	5.5	4.4	27	348	. .	. .	. .	272	68.3	60 55 37.3	. .	+ 1 38.2	112 3 36.7	
14	60 52	22.2	22.8	5.5	4.4	26	. .	976	. .	940	. .	68.3	60 55 58.2	. .	+ 1 38.3	112 3 57.7	
15	59 54	15.7	16.5	28.4	27.9	20	. .	700	. .	616	. .	68.3	59 57 25.7	. .	+ 1 34.6	111 5 21.5	+ 1.7
16	312 14	21.5	22.0	3.5	2.0	25	620	552	544	575	600	68.3	312 18 5.6	. .	− 1 0.3	3 23 26.5	+ 0.1
17	47 8	19.5	20.2	2.3	0.9	24	100	. .	050	. .	. .	68.3	47 12 30.0	. .	+ 59.3	98 19 50.5	+ 1.0
18	62 32	17.7	18.7	1.3	29.8	28	. .	206	. .	176	. .	68.3	62 38 2.7	. .	+ 1 45.7	113 46 9.6	− 4.4
19																	
20	5 36	20.6	20.6	3.0	29.9	23	. .	730	. .	. .	. .	68.3	5 40 36.1	. .	+ 5.5	56 47 2.8	+ 1.7
21																	
22	25 8	17.4	17.6	28.8	27.7	23	420	390	. .	336	330	68.3	25 12 43.8	. .	+ 26.0	76 19 31.0	+ 1.3
23	60 14	19.1	20.0	2.7	1.1	28	. .	380	. .	. .	. .	68.3	60 19 59.4	. .	+ 1 36.5	111 27 57.1	− 5.5
24	287 36	19.0	18.4	29.6	0.2	26	048	068	. .	. .	. .	68.3	287 40 0.6	. .	− 2 51.0	338 43 30.8	+ 1.7
25	46 8	16.6	17.4	28.9	28.4	28	. .	644	. .	570	. .	68.3	46 11 23.6	. .	+ 57.4	97 18 42.2	+ 1.2
26	28 30	24.5	24.2	6.0	3.9	21	. .	. .	. .	434	438	68.3	28 35 5.4	. .	+ 30.1	79 41 56.7	+ 0.6
27	30 18	16.0	17.9	29.9	27.6	29	. .	. .	. .	000	820	68.3	30 21 17.9	. .	+ 32.3	81 28 11.4	− 1.7
28	32 44	14.2	15.5	26.3	25.5	26	. .	. .	. .	850	815	68.3	32 47 52.2	. .	+ 35.5	83 54 48.9	+ 0.8
29	57 26	14.5	16.1	28.1	27.0	25	. .	496	. .	450	. .	68.3	57 30 12.9	. .	+ 1 26.3	108 38 0.4	+ 2.7
30	50 30	10 16.7	18.0	0.2	28.9	24	. .	560	. .	490	. .	68.3	50 36 59.8	. .	+ 1 7.1	101 44 28.1	− 5.7
31	358 10	19.3	18.9	0.8	29.0	28	076	038	. .	964	968	68.3	358 13 31.5	. .	− 1.7	49 19 51.0	+ 2.0
32	19 28	19.8	20.8	2.3	1.8	25	590	400	. .	. .	. .	68.3	19 32 9.5	. .	+ 19.0	70 38 49.7	
33	18 56	22.0	23.6	4.1	2.5	23	. .	. .	. .	450	250	68.3	19 0 37.6	. .	+ 18.4	70 7 17.2	
34	352 58	11.7	12.1	23.8	23.3	26	. .	908	. .	. .	. .	67.3	353 2 9.6	. .	− 6.6	44 8 24.2	+ 0.3
35	47 10	19.4	21.7	2.9	2.4	27	. .	. .	. .	624	. .	67.3	47 13 48.3	. .	+ 58.8	98 21 8.3	− 0.9
36	10 20	16.6	18.1	29.9	28.6	26	. .	700	. .	600	. .	67.3	10 23 52.3	. .	+ 10.0	61 30 23.5	+ 0.4
37	31 26	11.2	13.1	22.0	23.8	25	. .	. .	. .	424	384	67.3	31 30 17.0	. .	+ 33.3	82 37 11.5	+ 1.5
38	19 42	22.6	26.3	7.3	5.6	28	644	574	. .	. .	. .	67.3	19 45 16.6	. .	+ 19.3	70 51 57.1	
39	19 10	22.8	24.5	5.7	3.5	26	. .	. .	. .	856	842	67.3	19 13 42.1	. .	+ 18.7	70 20 22.0	
40	23 32	18.0	17.1	26.5	25.5	29	. .	122	. .	048	. .	67.3	23 35 16.5	. .	+ 23.2	74 42 0.9	+ 0.3
41	307 28	16.8	18.0	28.5	0.2	27	984	994	978	955	045	67.3	307 31 31.3	. .	− 1 9.7	358 36 42.8	− 0.5
42	49 18	13.3	15.8	26.7	25.8	28	. .	046	. .	998	. .	67.3	49 21 34.0	. .	+ 1 2.4	100 28 57.6	+ 0.5
43	352 58	17.6	19.2	1.2	29.7	25	530	528	. .	. .	. .	67.2	353 2 9.7	. .	− 6.7	44 8 24.2	+ 0.2
44	47 10	13.8	18.2	29.0	29.6	26	. .	932	. .	842	. .	67.2	47 13 48.9	. .	+ 58.8	98 21 8.9	0.0
45	10 20	16.8	21.0	2.5	0.5	26	. .	600	. .	460	. .	67.2	10 23 52.1	. .	+ 10.0	61 30 23.3	+ 0.3
46	40 6	16.3	19.1	1.2	0.0	25	. .	795	. .	760	. .	67.2	40 10 4.4	. .	+ 45.9	91 17 11.5	+ 0.5
47	31 26	17.2	20.0	1.0	0.5	25	. .	032	. .	918	. .	67.2	31 30 16.2	. .	+ 33.3	82 37 10.7	+ 0.9

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
6	30.184	83.0	92.0
8	30.164	84.5	93.4
9	30.160	85.0	93.8
11	30.142	85.5	95.2
14	30.126	83.0	83.0
17	. .	. .	81.9
22	30.124	82.5	80.0
28	. .	. .	80.0
29	30.134	82.0	80.0
31	30.130	81.0	79.9
33	. .	. .	96.5
35	. .	. .	87.8
36	30.166	82.5	
37	30.170	83.0	89.6
38	30.164	86.0	95.9
40	30.106	88.0	98.8
42	29.978	87.0	91.7
45	30.016	81.0	85.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam,	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 2.0	+ 6.7	. .	+ 4.7
3	− 2.7	− 15 47.5	. .	− 15 50.2
4	− 2.7	+ 15 47.5	. .	+ 15 44.8
7	− 2.8	− 15 44.7	. .	− 15 47.5
8	− 2.7	+ 15 44.7	. .	+ 15 42.0
13	− 0.8	+ 10.5	. .	+ 9.7
14	− 0.8	− 10.5	. .	− 11.3
32	− 2.9	− 15 46.2	. .	− 15 49.1
33	− 2.8	+ 15 46.2	. .	+ 15 43.4
38	− 2.9	− 15 47.5	. .	− 15 50.4
39	− 2.8	+ 15 47.5	. .	+ 15 44.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
July 27	1	Venus II, N.	E.	52.5	53.2	57.1	3.5	5.8	8.1	14.6	16.3	19.2	10 5.81	− 0.09	. .	−41.45	6 9 24.27	− 0.47
	2	Venus, S. C.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	3	γ Geminorum	E.	40.4	43.1	44.8	51.1	53.2	55.3	1.9	3.5	6.0	30 53.26	− 0.06	−41.45	−41.45	6 30 11.75	− 0.03
	4	α Canis Majoris.	E.	53.1	55.7	57.3	3.8	5.9	8.0	14.4	16.0	18.5	40 5.86	+ 0.10	−41.57	−41.45	6 39 24.51	+ 0.04
28	5	Sun I, N.	E.	14.2	16.8	18.4	25.0	27.2	29.3	45.7	47.2	50.0	30 27.09	− 0.08	. .	−41.48	8 29 45.53	. .
	6	Sun II, S.	E.	28.0	30.7	32.4	38.7	41.0	43.0	49.6	51.1	53.9	32 40.93	− 0.08	. .	−41.48	8 31 59.37	. .
	7	α Leonis	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	8	γ^1 Leonis	E.	16.1	18.9	20.6	27.1	29.3	31.5	38.0	39.5	42.2	13 29.24	− 0.08	−41.43	−41.50	10 12 47.66	− 0.06
	9	α Orionis.	F.	37.3	39.8	41.4	47.7	49.8	51.8	58.0	59.5	2.0	48 49.70	− 0.19	−41.66	−41.77	5 48 7.74	− 0.14
	10	ε Canis Majoris.	Ha.	57.9	0.9	2.7	9.8	12.0	14.2	21.4	23.0	26.0	54 11.99	− 0.09	−41.62	−41.69	6 53 30.21	− 0.12
	11	α Geminorum	Ha.	45.1	48.1	50.0	57.1	59.6	2.0	9.2	11.0	14.0	26 59.57	− 0.23	−41.80	−41.70	7 26 17.64	+ 0.34
	12	α Canis Minoris.	Ha.	58.8	1.5	3.0	6.9	. .	. .	19.3	20.9	. .	33 11.13	− 0.14	−41.78	−41.70	7 32 29.29	− 0.06
	13	α Leonis	Ha.	55.7	58.3	0.0	6.1	8.3	10.3	16.6	18.2	20.7	2 8.24	− 0.20	−41.64	−41.73	10 1 26.31	− 0.13
	14	γ^1 Leonis	Ha.	16.5	19.2	20.9	27.3	29.7	31.8	38.3	40.0	42.6	13 29.59	− 0.21	−41.68	−41.74	10 12 47.64	− 0.08
	15	α Ursæ Majoris	Ha.	55.4	1.0	4.3	17.4	21.7	26.2	39.4	42.7	48.0	56 21.79	− 0.31	. .	−41.75	10 55 39.73	+ 0.25
	16	δ Leonis	Ha.	40.0	42.8	44.4	51.0	53.1	55.3	2.0	3.5	6.1	7 53.13	− 0.21	−41.68	−41.75	11 7 11.17	− 0.13
	17	α Orionis.	F.	40.3	41.8	46.0	48.1	50.1	52.1	54.1	58.3	59.9	48 50.08	− 0.18	−42.03	−42.18	5 48 7.72	− 0.18
	18	μ Geminorum	F.	34.6	37.3	39.0	45.5	47.7	49.9	56.6	58.3	1.1	15 47.78	− 0.24	−42.06	−42.18	6 15 5.36	− 0.16
	19	α Canis Majoris.	F.	53.9	56.6	58.3	4.5	6.9	8.7	15.2	16.8	19.6	40 6.72	− 0.09	−42.20	−42.18	6 39 24.45	− 0.06
	20	α Canis Minoris	F.	59.2	2.0	3.5	. .	. .	. .	. .	. .	. .	33 11.63	− 0.17	−42.24	−42.19	7 32 29.27	− 0.09
30	21	Sun II	F.	18.3	21.0	22.7	29.1	31.2	33.3	40.0	41.5	44.1	40 31.24	− 0.22	. .	−42.20	8 39 48.82	−66.76
	22	β Leonis	F.	57.8	59.5	3.5	5.7	7.9	10.0	12.1	16.4	18.0	43 7.90	− 0.21	−42.17	−42.22	11 42 25.47	− 0.07
	23	Saturn I, S.	F.	59.9	2.6	4.1	. .	. .	. .	21.7	23.5	26.3	28 13.01	− 0.06	. .	−42.26	17 27 30.69	. .
	24	Saturn II, N.	F.	. .	. .	10.0	12.1	14.4	16.5	18.7	. .	. .	28 14.35	− 0.06	. .	−42.26	17 27 32.03	. .
	25	μ Herculis	F.	52.7	55.5	57.4	4.2	6.5	8.8	15.7	17.5	20.4	42 6.52	− 0.22	−42.24	−42.26	17 41 24.04	− 0.02
	26	γ Draconis	F.	0.2	4.2	6.9	16.7	20.0	23.3	33.0	35.5	39.4	54 19.91	− 0.34	. .	−42.26	17 53 37.31	− 0.16
	27	γ^2 Sagittarii	F.	57.9	0.7	2.7	9.7	12.0	14.4	21.5	23.2	26.2	58 12.03	− 0.03	−42.24	−42.26	17 57 29.74	− 0.01
	28	22 Camelopard., S. P.	F.	46.1	38.9	34.8	17.0	11.3	5.5	48.1	43.8	36.8	5 11.37	+ 0.24	. .	−42.27	6 4 29.34	− 0.19
	29	δ Ursæ Minoris	F.	. .	. .	6.5	40.5	14.0	50.0	24.0	. .	. .	15 15.18	− 2.78	. .	−42.27	18 14 30.13	− 0.07
	30	1 Aquilæ	F.	40.0	42.7	44.3	50.4	52.4	54.5	0.7	2.2	4.8	28 52.44	− 0.11	−42.29	−42.27	18 28 10.06	+ 0.09
	31	α Lyræ	F.	1.1	4.3	6.3	14.1	16.8	19.4	27.3	29.3	32.5	33 16.79	− 0.27	−42.20	−42.27	18 32 34.25	− 0.05
	32	51 Cephei, S. P.	F.	. .	. .	. .	. .	. .	30.5	47.0	. .	. .	39 5.15	+ 3.06	. .	−42.27	6 38 25.94	− 0.02
	33	β Lyræ	F.	. .	56.7	58.9	1.3	3.9	6.4	11.1	13.0	16.1	46 1.44	− 0.24	−42.29	−42.27	18 45 28.93	+ 0.05
	34	κ Aquilæ	F.	26.4	28.8	30.2	36.4	38.3	40.4	46.8	48.2	50.8	30 38.48	− 0.11	−42.39	−42.28	19 29 56.09	+ 0.15
	35	α Aquilæ	F.	58.7	1.1	2.9	9.0	11.0	13.1	19.1	20.8	23.3	45 11.00	− 0.16	−42.27	−42.28	19 44 28.56	+ 0.03
	36	β Aquilæ	F.	28.0	30.6	36.3	38.3	40.2	42.2	44.2	49.8	52.6	49 40.24	− 0.15	−42.32	−42.28	19 48 57.81	+ 0.07
	37	τ Aquilæ	F.	19.6	22.3	23.9	30.0	32.0	34.0	40.0	41.5	44.2	58 31.94	− 0.16	−42.29	−42.28	19 57 49.50	+ 0.03
	38	α^2 Capricorni.	F.	22.5	25.2	26.9	33.0	35.1	37.1	43.5	45.0	47.5	11 35.09	− 0.09	−42.34	−42.28	20 10 52.72	+ 0.10
	39	π Capricorni.	F.	24.4	27.2	28.8	35.2	37.3	39.4	46.0	47.6	50.4	20 37.37	− 0.08	−42.30	−42.28	20 19 55.01	+ 0.05
	40	Danæ	F.	58.3	1.5	2.9	. .	. .	. .	. .	. .	. .	24 12.55	0.00	. .	−42.28	20 23 30.27	. .
	41	Anonymous	F.	7.1	10.6	12.5	20.0	22.6	25.3	33.5	34.2	37.6	24 22.60	0.00	. .	−42.28	20 23 40.32	. .
	42	μ Aquarii	F.	10.8	13.2	14.8	21.0	23.1	25.1	31.5	32.9	35.5	46 23.10	− 0.10	−42.35	−42.29	20 45 40.71	+ 0.13
Aug. 1	43	Sun I	Ha.	52.3	55.0	56.6	3.0	5.1	7.4	13.8	15.5	18.0	46 5.19	− 0.21	. .	−42.15	8 45 22.83	. .
	44	Sun, S.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	+66.55
	45	γ^2 Sagittarii	Ha.	57.8	0.6	2.4	9.6	11.9	14.3	21.4	23.2	26.0	58 11.91	− 0.10	−42.06	−42.15	17 57 29.66	− 0.08
	46	δ Ursæ Minoris	Ha.	. .	. .	5.6	39.8	15.3	51.0	23.5	. .	. .	15 15.24	− 1.97	. .	−42.15	18 14 31.12	+ 1.41
	47	1 Aquilæ	Ha.	39.9	42.6	44.0	50.3	52.2	54.5	0.6	2.1	4.7	28 52.32	− 0.16	−42.13	−42.15	18 28 10.01	+ 0.05
	48	α Lyræ	Ha.	0.9	4.2	6.2	14.2	16.7	19.3	27.2	29.2	32.2	33 16.68	− 0.28	−42.10	−42.15	18 32 34.25	− 0.03

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	16 24	18.5	19.6	1.5	0.5	23	030	. .	. .	. .	958	67.2	16 28 46.4	. .	+ 16.0	67 35 23.6	
2	16 24	18.5	19.6	1.5	0.5	22	. .	182	. .	142	. .	67.2	16 28 59.0	. .	+ 16.0	67 35 36.2	
3	22 18	18.3	21.2	1.4	1.2	22	. .	650	. .	605	. .	67.2	22 22 51.3	. .	+ 22.3	73 29 34.8	+ 1.7
4	55 20	17.0	19.6	1.4	0.3	23	. .	288	. .	150	. .	67.2	55 24 43.0	. .	+ 1 18.2	106 32 22.4	+ 0.7
5	19 36	10 23.5	24.5	6.5	4.0	21	769	650	. .	. .	. .	67.2	19 41 2.7	. .	+ 19.2	70 47 43.1	
6	20 8	10 23.0	23.8	4.7	3.4	23	. .	. .	. .	400	327	67.2	20 12 35.5	. .	+ 19.7	71 19 16.4	
7	26 12	20.6	22.3	3.8	1.6	21	. .	465	. .	420	. .	67.2	26 17 7.8	. .	+ 26.2	77 23 55.2	+ 2.1
8	18 20	22.0	24.3	6.4	3.7	27	. .	890	. .	802	. .	67.2	18 23 28.0	. .	+ 17.7	69 30 6.9	+ 2.8
9	31 26	10 7.5	9.9	20.4	21.1	25	. .	684	. .	604	. .	66.7	31 30 15.5	. .	+ 33.3	82 37 10.0	+ 0.3
10	67 34	10 17.4	19.5	1.1	1.0	21	220	190	. .	020	070	66.7	67 39 14.1	. .	+ 2 10.8	118 47 46.1	+ 1.1
11	6 40	10 21.1	23.0	4.5	2.0	28	. .	390	. .	340	. .	66.7	6 43 21.0	. .	+ 6.4	57 49 48.6	+ 0.8
12	33 16	20.4	22.5	4.0	1.6	26	950	958	. .	. .	. .	66.7	33 19 43.0	. .	+ 35.5	84 26 39.7	+ 0.2
13	26 12	10 26.4	28.0	8.4	7.0	21	. .	090	. .	045	. .	66.7	26 17 7.7	. .	+ 26.7	77 23 55.6	+ 2.5
14	18 20	10 21.4	23.4	4.0	2.4	27	. .	940	. .	922	. .	66.7	18 23 27.5	. .	+ 18.0	69 30 6.7	+ 2.6
15	336 22	10 21.5	23.0	4.1	2.5	22	. .	735	. .	650	. .	66.7	336 26 48.1	. .	— 23.5	27 32 45.8	+ 0.6
16	17 34	10 23.3	25.9	6.5	3.5	21	. .	075	. .	020	. .	66.7	17 39 10.7	. .	+ 17.2	68 45 49.1	+ 1.2
17	31 26	10.6	13.6	23.3	24.3	25	. .	. .	. .	510	482	66.6	31 30 13.3	. .	+ 34.1	82 37 8.6	— 1.0
18	16 14	8.2	10.7	21.4	21.2	23	762	702	. .	668	650	66.6	16 18 44.7	. .	+ 16.3	67 25 22.2	— 0.6
19	55 20	11.5	14.7	25.5	25.5	23	. .	814	. .	. .	. .	66.6	55 24 39.5	. .	+ 1 20.3	106 32 21.0	— 0.3
20	33 16	11.5	14.2	25.2	25.0	27	. .	658	. .	. .	. .	66.6	33 19 41.2	. .	+ 36.4	84 26 38.8	— 0.6
21																	
22																	
23	60 52	14.0	15.5	27.7	27.5	26	290	. .	. .	204	. .	66.5	60 55 59.2	. .	+ 1 41.1	112 4 1.5	
24	60 52	14.0	15.5	27.7	27.5	27	. .	580	. .	480	. .	66.5	60 55 39.8	. .	+ 1 41.1	112 3 42.1	
25	11 2	13.3	14.5	26.8	25.2	28	. .	. .	. .	886	876	66.5	11 5 19.6	. .	+ 11.1	62 11 51.9	— 0.3
26	347 20	18.2	19.6	1.3	29.7	28	. .	834	. .	800	. .	66.5	347 23 17.1	. .	— 12.6	38 29 25.7	— 0.8
27	69 12	16.6	18.1	29.8	29.7	24	. .	080	. .	036	. .	66.5	69 16 30.4	. .	+ 2 28.1	120 25 19.7	— 0.8
28	288 14	10.6	11.2	22.0	23.6	26	. .	862	. .	976	. .	66.5	288 17 52.7	. .	— 2 49.1	339 21 24.8	— 1.7
29	312 14	10.8	10.9	22.6	22.6	26	204	150	138	120	106	66.5	312 18 5.7	. .	— 1 2.1	3 23 24.8	0.0
30																	
31	0 10	17.6	18.4	29.5	28.9	27	. .	748	. .	708	. .	66.5	0 13 34.7	. .	+ 0.2	51 19 56.1	+ 0.5
32	306 4	11.7	11.8	22.9	24.1	22	. .	. .	. .	170	235	66.5	306 9 4.9	. .	— 1 17.3	357 14 8.8	— 1.2
33	5 36	10 12.0	13.4	25.0	23.5	24	. .	. .	. .	264	280	66.5	5 40 31.6	. .	+ 5.6	56 46 58.4	— 1.0
34	46 8	9.5	11.5	23.1	23.8	29	. .	080	. .	994	. .	66.5	46 11 21.0	. .	+ 59.0	97 18 41.2	+ 0.8
35	30 18	16.6	17.4	28.7	28.5	29	. .	004	. .	910	. .	66.5	30 21 16.5	. .	+ 33.2	81 28 10.9	— 1.0
36	32 44	12.9	13.9	24.5	24.4	27	. .	098	. .	018	. .	66.5	32 47 50.2	. .	+ 36.6	83 54 48.0	+ 1.0
37	31 54	19.6	20.6	1.9	1.3	25	. .	566	. .	460	. .	66.5	31 58 6.1	. .	+ 35.4	83 5 2.7	+ 0.6
38	51 44	14.4	15.9	27.3	27.7	22	. .	220	. .	175	. .	66.5	51 49 1.2	. .	+ 1 12.1	102 56 34.5	+ 0.5
39	57 26	15.2	16.5	28.4	28.4	25	640	595	. .	. .	. .	66.5	57 30 9.2	. .	+ 1 28.9	108 37 59.3	+ 1.7
40																	
41	74 24	4.5	6.1	17.5	18.4	24	. .	. .	. .	370	360	66.5	74 27 36.4	. .	+ 3 21.2	125 37 18.8	
42	48 16	9.4	11.3	22.6	23.5	24	. .	384	. .	284	. .	66.5	48 20 33.2	. .	+ 1 3.8	99 27 58.2	+ 1.0
43																	
44	21 6	10 14.3	15.2	27.7	27.0	22	. .	. .	. .	525	620	66.5	21 10 54.5	. .	+ 21.1	72 17 36.8	
45	69 12	10 20.1	20.7	2.1	3.0	23	. .	760	. .	670	. .	66.5	69 16 32.8	. .	+ 2 26.6	120 25 20.6	0.0
46	312 14	10 19.2	19.8	1.4	1.1	25	. .	650	620	565	. .	66.5	312 18 5.1	. .	— 1 1.4	3 23 24.9	+ 0.6
47	47 8	10 20.2	21.6	3.0	2.6	24	. .	042	. .	990	. .	66.5	47 12 27.9	. .	+ 1 0.4	98 19 49.5	+ 0.5
48	0 10	20.4	21.1	2.7	1.5	27	. .	662	. .	620	. .	66.5	0 13 33.2	. .	+ 0.2	51 19 54.6	— 0.5

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
9	29.916	80.0	83.8
10	29.942	82.0	86.2
11	. .	. .	87.1
13	29.936	83.0	88.0
15	. .	. .	87.9
16	29.936	83.0	88.1
17	30.112	73.2	75.2
19	. .	. .	77.0
21	30.138	75.0	81.2
23	30.163	74.0	68.8
29	30.170	73.0	67.0
32	. .	. .	67.0
42	30.170	72.0	65.0
44	30.047	78.0	85.5
45	30.030	76.0	71.0
46	. .	. .	70.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	— 1.9	+ 6.3	. .	+ 4.4
2	— 1.9	— 6.3	. .	— 8.2
5	— 2.9	+ 15 46.6	. .	+ 15 43.7
6	— 3.0	— 15 46.6	. .	— 15 49.6
23	— 0.8	— 9.7	. .	— 10.5
24	— 0.8	+ 9.7	. .	+ 8.9
44	— 3.1	— 15 46.7	. .	— 15 49.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 1	1	51 Cephei, S. P. . .	Ha.	. .	. .	33.2	50.9	7.2	. .	. .	. .	. .	39 7.93	+ 1.93	. .	−42.15	6 38 27.71	+ 1.19
	2	σ Sagittarii . . .	Ha.	. .	. .	52.3	54.5	56.7	59.1	1.3	. .	. .	47 56.79	− 0.12	−42.09	−42.15	18 47 14.52	− 0.05
	3	ζ Aquilæ	Ha.	57.9	0.5	2.5	8.5	10.5	12.6	19.0	20.5	23.0	0 10.56	− 0.22	−42.20	−42.15	18 59 28.19	+ 0.13
	4	*d* Sagittarii . . .	Ha.	33.4	36.1	37.7	44.1	46.2	48.4	55.0	56.5	59.1	10 46.28	− 0.16	−42.19	−42.15	19 10 3.97	+ 0.06
	5	δ Draconis . . .	Ha.	. .	. .	6.4	12.0	17.0	22.7	27.8	. .	. .	13 17.21	− 0.45	. .	−42.15	19 12 34.49	− 0.02
	6	κ Aquilæ	Ha.	26.0	28.6	30.2	36.2	38.2	40.4	46.5	48.0	50.6	30 38.30	− 0.16	−42.16	−42.15	19 29 55.99	+ 0.05
	7	γ Aquilæ	Ha.	36.9	39.4	40.9	47.2	49.2	51.3	57.5	59.1	1.6	40 49.23	− 0.21	−42.13	−42.15	19 40 6.87	+ 0.01
	8	α Aquilæ	Ha.	58.5	1.1	2.6	8.8	10.9	13.0	19.1	20.6	23.2	45 10.87	− 0.20	−42.09	−42.15	19 44 28.52	− 0.02
	9	ε Draconis . . .	Ha.	. .	. .	10.5	16.9	22.7	28.6	34.6	. .	. .	49 22.69	− 0.49	. .	−42.15	19 48 40.05	− 0.11
	10	λ Ursæ Minoris . .	Ha.	. .	. .	. .	12.0	1.0	49.0	38.0	. .	. .	56 1.62	− 5.67	. .	−42.15	19 55 13.80	− 0.87
	11	α² Capricorni. . .	Ha.	22.0	25.0	26.5	32.9	35.0	37.0	13.3	15.0	17.5	11 34.96	− 0.08	−42.21	−42.15	20 10 52.73	+ 0.10
	12	κ Cephei	Ha.	. .	. .	43.0	53.4	1.6	11.4	20.4	. .	. .	14 2.02	− 0.96	. .	−42.15	20 13 18.91	− 0.13
	13	π Capricorni . . .	Ha	24.5	27.2	28.8	35.1	37.3	39.4	45.9	47.4	50.2	20 37.31	− 0.06	−42.25	−42.15	20 19 55.10	+ 0.13
	14	61¹ Cygni	Ha.	33.9	37.1	39.0	46.7	49.2	51.9	59.7	1.7	4.9	1 49.34	− 0.28	−42.17	−42.15	21 1 6.91	− 0.01
	15	ζ Cygni	Ha.	54.9	57.9	59.7	6.6	8.9	11.3	18.3	20.1	23.0	8 8.97	− 0.25	−42.19	−42.15	21 7 26.57	+ 0.05
	16	α Cephei, (R.) . .	Ha.	47.3	52.7	56.0	9.3	13.4	17.7	30.7	34.0	39.4	16 13.39	+ 0.57	. .	−42.15	21 15 31.81	− 0.13
	17	α Orionis	E.	38.0	40.6	42.3	48.3	50.4	52.5	58.6	0.2	2.9	48 50.42	− 0.24	−42.24	−42.26	5 48 7.92	− 0.05
	18	μ Geminorum . .	E.	. .	. .	. .	. .	. .	. .	56.8	58.5	1.3	15 48.02	− 0.26	−42.30	−42.26	6 15 5.60	0.00
	19	γ Geminorum . .	E.	41.6	44.3	46.0	52.2	54.3	56.5	2.8	4.4	7.1	30 54.36	− 0.25	−42.25	−42.26	6 30 12.85	− 0.04
	20	Venus II, S. . .	E.	37.8	40.5	42.2	48.8	50.9	53.2	59.9	1.6	4.4	35 51.03	− 0.26	. .	−42.26	6 35 8.61	− 0.46
	21	Venus, N. C. . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	22	α Canis Majoris . .	E.	54.2	56.9	58.5	4.8	7.0	9.1	15.5	17.2	19.9	40 7.01	− 0.19	−42.34	−42.26	6 39 24.56	0.00
	23	ε Canis Majoris . .	E.	58.9	1.7	3.5	10.3	12.7	14.9	22.4	23.8	26.5	54 12.74	− 0.16	−42.23	−42.26	6 53 30.32	− 0.08
	24	α Geminorum . .	E.	45.8	48.7	50.8	57.8	0.2	2.7	9.8	11.8	14.8	27 0.27	− 0.27	−42.38	−42.26	7 26 17.74	+ 0.36
	25	α Canis Minoris. .	E.	59.6	2.0	3.6	9.7	11.8	13.8	20.1	21.6	24.1	33 11.81	− 0.24	−42.30	−42.26	7 32 29.31	− 0.10
	26	β Geminorum . .	E.	49.7	52.5	54.4	1.2	3.5	6.0	12.8	14.6	17.5	38 3.58	− 0.27	−42.32	−42.26	7 37 21.05	− 0.03
2	27	Sun I, S. . . .	E.	45.2	47.8	49.6	55.9	58.0	0.0	6.7	8.2	11.0	49 58.04	− 0.25	. .	−42.26	8 49 15.53	. .
	28	Sun II, N. . . .	E.	58.0	0.7	2.5	8.8	11.0	13.1	19.5	21.1	23.9	52 10.96	− 0.25	. .	−42.26	8 51 28.45	. .
	29	δ Leonis	E.	. .	. .	. .	. .	. .	. .	2.3	4.0	6.9	7 53.63	− 0.26	−42.14	−42.26	11 7 11.11	− 0.18
	30	γ Ursæ Majoris . .	E.	20.0	24.2	26.7	37.4	40.8	44.4	54.7	57.5	1.9	47 40.84	− 0.31	. .	−42.26	11 46 58.27	+ 0.22
	31	12 Canum Venat. .	E.	23.4	26.5	28.6	36.5	39.1	41.9	49.6	51.7	54.9	50 39.13	− 0.28	−42.34	−42.26	12 49 56.59	+ 0.08
	32	Polaris, S. P. . .	E.	. .	. .	15.5	51.5	28.0	4.0	39.0	. .	. .	12 28.10	+ 0.64	. .	−42.26	1 11 46.48	− 2.85
	33	α Virginis . . .	E.	51.3	53.8	55.5	1.6	3.6	5.7	12.0	13.6	16.2	19 3.59	− 0.20	−42.07	−42.26	13 18 21.13	− 0.20
	34	ζ Virginis . . .	E.	34.9	37.6	39.0	45.2	47.2	49.2	55.3	56.8	59.4	28 47.18	− 0.22	−42.24	−42.26	13 28 4.70	− 0.02
	35	δ Ursæ Minoris . .	E.	. .	. .	59.5	36.5	12.0	46.5	24.5	. .	. .	15 12.00	− 0.98	. .	−42.26	18 14 29.76	+ 0.31
	36	Venus II, S. . .	E.	47.4	50.2	51.8	58.4	0.6	2.9	9.4	11.1	14.0	41 0.64	− 0.23	. .	−42.31	6 40 18.10	− 0.45
	37	Venus N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	38	ε Canis Majoris . .	F.	58.8	1.7	3.6	10.5	12.8	15.0	22.0	23.7	26.6	54 12.74	− 0.17	−42.20	−42.31	6 53 30.26	. .
	39	δ Canis Majoris . .	F.	34.6	37.3	39.2	45.9	48.1	50.4	57.2	59.0	1.8	3 48.17	− 0.18	−42.28	−42.31	7 3 5.68	. .
	40	δ Geminorum . .	F.	50.5	53.3	55.0	1.5	3.6	5.8	12.5	14.1	17.0	13 3.70	− 0.23	−42.38	−42.31	7 12 21.16	. .
	41	α² Geminorum . .	F.	45.7	48.6	50.7	57.8	0.3	2.7	9.9	11.6	14.7	27 0.22	− 0.23	−42.35	−42.31	7 27 17.68	. .
	42	α Canis Majoris. .	F.	59.6	2.2	3.7	9.8	11.9	14.0	20.0	21.6	24.1	30 11.88	− 0.22	−42.37	−42.31	7 32 29.35	. .
	43	β Geminorum . .	F.	49.7	52.7	54.3	1.4	3.6	6.0	13.0	14.6	17.5	38 3.64	− 0.22	−42.41	−42.31	7 37 21.11	. .
3	44	Sun I, S. . . .	F.	37.3	39.9	41.5	47.8	50.2	52.3	58.7	0.2	3.0	53 50.10	− 0.23	. .	−42.32	8 53 7.55	. .
	45	Sun II, N. . . .	F.	50.1	52.8	54.4	0.8	2.9	5.1	11.5	13.1	15.8	56 2.92	− 0.23	. .	−42.32	8 53 20.37	. .
	46	Mercury I, C. . .	F.	6.2	8.9	10.5	17.0	19.1	21.3	27.6	29.4	31.9	29 19.10	− 0.23	. .	−42.33	9 28 36.54	+ 0.18
	47	α Leonis	F.	. .	. .	. .	. .	. .	. .	17.4	18.9	21.5	2 9.00	− 0.23	−42.36	−42.33	10 1 26.44	− 0.01
	48	γ¹ Leonis	F.	17.2	20.0	21.6	28.2	30.3	32.5	39.0	40.6	43.4	13 30.31	− 0.23	−42.37	−42.33	10 12 47.75	+ 0.02

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	306 4	10 18.5	18.5	29.6	1.0	21	. .	810	. .	810	. .	66.5	306 9 4.1	. .	− 1 16.5	357 14 8.8	− 0.7
2	65 14	17.4	18.8	0.6	1.5	22	. .	. .	. .	490	508	66.5	65 18 52.0	. .	+ 2 1.1	116 27 14.3	+ 1.0
3	25 8	23.0	23.5	4.0	3.0	23	. .	060	. .	040	. .	66.5	25 12 41.3	. .	+ 26.4	76 19 28.9	+ 0.7
4	57 58	21.1	22.2	3.5	3.4	22	250	100	. .	. .	. .	66.5	58 2 56.3	. .	+ 1 29.6	109 10 47.1	+ 3.3
5	331 24	10 17.0	17.9	28.8	28.6	26	. .	. .	. .	210	. .	66.5	331 27 58.1	. .	− 30.5	22 33 48.8	− 0.9
6	46 8	10 19.5	20.9	2.5	2.6	28	. .	460	. .	360	. .	66.5	46 11 21.2	. .	+ 58.3	97 18 40.7	+ 0.4
7	28 30	10 21.4	22.4	3.4	2.2	21	. .	745	. .	700	. .	66.5	28 35 2.6	. .	+ 30.5	79 41 54.3	− 0.3
8	30 18	20.1	21.7	2.1	1.0	28	818	750	. .	. .	. .	66.5	30 21 16.9	. .	+ 32.8	81 28 10.9	− 0.7
9	328 54	10 17.8	18.4	0.0	29.5	26	. .	852	. .	. .	. .	66.5	328 57 49.3	. .	− 33.7	20 3 36.8	− 1.8
10	309 56	17.5	17.6	29.5	0.3	27	. .	820	905	925	. .	66.5	309 59 32.1	. .	− 1 6.6	1 4 46.7	− 1.2
11	51 44	19.0	21.1	2.5	1.7	21	. .	840	. .	. .	. .	66.5	51 49 2.8	. .	+ 1 11.1	102 56 35.1	+ 1.2
12	321 32	20.4	20.6	2.0	2.1	29	. .	. .	. .	416	. .	66.5	321 35 6.5	. .	− 44.4	12 40 43.3	− 2.7
13	57 26	18.5	19.8	1.0	2.0	25	. .	275	. .	250	. .	66.5	57 30 10.3	. .	+ 1 27.7	108 37 59.2	+ 1.6
14	0 42	17.0	18.6	0.3	29.5	23	. .	130	. .	038	. .	66.5	0 46 45.5	. .	+ 0.8	51 53 7.5	− 0.5
15	9 8	21.0	21.7	3.2	2.4	27	282	284	. .	. .	. .	66.5	9 11 39.2	. .	+ 9.1	60 18 9.5	+ 0.5
16	203 6	10 19.2	19.6	0.5	0.4	33	100	165	. .	055	965	66.5	203 8 10.3	. .	+ 23.9	27 57 47.0	− 1.9
17	31 26	14.7	17.0	27.5	27.5	25	198	188	. .	155	140	65.3	31 30 14.4	. .	+ 33.5	82 37 9.1	− 0.2
18	16 14	18.0	21.1	1.2	0.2	22	. .	. .	. .	830	800	65.3	16 18 46.0	. .	+ 16.0	67 25 23.2	+ 0.5
19	22 18	20.0	21.2	2.5	2.0	22	. .	500	. .	495	. .	65.3	22 22 50.5	. .	+ 22.4	73 29 34.1	+ 1.2
20	16 24	16.1	17.0	28.0	27.9	26	090	. .	. .	. .	080	65.3	16 28 0.1	. .	+ 16.1	67 34 37.4	
21	16 24	16.1	17.0	28.0	27.9	26	. .	860	. .	850	. .	65.3	16 27 48.2	. .	+ 16.1	67 34 25.5	
22	55 20	13.5	15.0	26.8	27.5	23	590	535	. .	510	490	65.3	55 24 40.2	. .	+ 1 18.7	106 32 20.1	− 0.6
23	67 34	16.2	18.0	0.5	0.0	21	. .	358	. .	270	. .	65.3	67 39 11.1	. .	+ 2 11.1	118 47 43.4	− 0.6
24	6 40	15.4	16.8	29.8	28.2	28	. .	615	. .	558	. .	65.3	6 43 21.4	. .	+ 6.4	57 49 49.0	+ 0.9
25	33 16	16.3	18.9	0.5	29.4	27	118	090	. .	080	030	65.3	33 19 43.1	. .	+ 35.6	84 26 39.9	+ 0.7
26	10 30	15.8	17.8	0.4	28.0	28	972	970	. .	940	928	65.3	10 33 15.5	. .	+ 10.1	61 39 46.8	+ 0.9
27	21 22	10 15.5	15.6	28.1	27.2	25	260	140	. .	. .	. .	65.3	21 26 15.6	. .	+ 21.3	72 32 58.1	
28	20 50	10 18.5	19.5	1.4	0.8	23	. .	. .	. .	218	175	65.3	20 54 40.1	. .	+ 20.7	72 1 22.0	
29	17 34	19.4	21.5	2.0	0.9	21	. .	. .	. .	132	098	65.3	17 39 11.1	. .	+ 17.2	68 45 49.5	+ 1.4
30	344 24	17.2	18.5	29.5	29.2	23	. .	262	. .	252	. .	65.3	344 28 42.1	. .	− 15.0	35 34 48.3	+ 0.7
31	359 48	19.6	22.8	3.5	2.4	24	. .	928	. .	878	. .	65.3	359 52 15.3	. .	− 0.1	50 58 36.4	+ 2.8
32	307 28	17.0	19.5	0.0	1.7	27	728	720	730	735	705	65.3	307 31 32.2	. .	− 1 10.1	358 36 43.3	− 1.3
33	49 18	18.6	22.3	3.9	2.0	27	. .	550	. .	521	. .	65.3	49 21 33.1	. .	+ 1 2.8	100 28 57.1	+ 0.4
34	38 44	20.2	24.2	5.0	3.8	22	. .	758	. .	730	. .	65.3	38 48 44.8	. .	+ 43.4	89 55 49.4	+ 2.4
35	312 14	21.9	22.5	3.0	2.5	25	640	645	595	615	610	65.3	312 18 1.8	. .	− 1 0.6	3 23 22.4	− 1.6
36	16 26	12.5	13.6	25.2	23.8	27	725	. .	. .	. .	640	66.4	16 29 40.2	. .	+ 16.0	67 36 17.4	
37	16 26	12.5	13.6	25.2	23.8	28	. .	552	. .	528	. .	66.4	16 29 26.9	. .	+ 16.0	67 36 4.1	
38	67 34	13.2	14.4	26.8	26.8	21	. .	570	. .	502	. .	66.4	67 39 12.2	. .	+ 2 10.7	118 47 44.1	+ 0.3
39	64 58	13.7	15.0	27.5	28.2	22	. .	390	. .	215	. .	66.4	65 2 59.7	. .	+ 1 55.6	116 11 16.5	+ 3.3
40	16 36	12.2	13.7	24.6	24.1	25	. .	. .	. .	242	208	66.4	16 40 16.7	. .	+ 16.2	67 46 54.1	+ 0.7
41	6 40	14.0	14.8	26.4	25.4	28	. .	844	. .	830	. .	66.4	6 43 21.1	. .	+ 6.4	57 49 48.7	+ 0.5
42	33 16	12.1	13.5	24.5	23.9	27	580	552	. .	452	420	66.4	33 19 43.0	. .	+ 35.5	84 26 39.7	+ 0.6
43	10 30	11.2	12.7	24.6	24.1	29	. .	380	. .	272	. .	66.4	10 33 15.6	. .	+ 10.1	61 39 46.9	+ 1.0
44	21 38	21.3	24.2	3.7	3.7	26	408	282	. .	. .	. .	66.4	21 46 52.6	. .	+ 21.3	72 48 35.1	
45	21 6	22.6	23.8	6.0	4.8	24	. .	. .	. .	456	424	66.4	21 10 17.8	. .	+ 20.8	72 16 59.8	
46	22 6	13.6	15.2	25.6	25.8	.	. .	610	. .	440	. .	66.4	22 9 41.2	. .	+ 21.8	73 16 24.2	− 2.5
47	26 12	19.6	20.2	2.4	1.3	21	. .	. .	. .	528	514	66.4	26 17 6.0	. .	+ 26.4	77 23 53.6	+ 0.5
48	18 20	12.1	14.1	24.8	25.3	28	570	518	. .	552	562	66.4	18 23 26.6	. .	+ 17.3	69 30 5.6	+ 1.3

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	30.030	75.0	70.4
6	. .	. .	70.0
7	. .	. .	70.0
10	30.028	75.0	70.5
13	. .	. .	70.1
16	30.006	75.0	69.5
17	29.999	76.3	82.5
26	29.988	78.0	88.5
35	29.974	79.0	77.0
36	29.980	79.2	86.8
41	. .	. .	89.2
43	29.980	80.2	89.4
45	29.964	81.0	92.5
47	. .	. .	94.4

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
20	− 1.7	− 6.0	. .	− 7.7
21	− 1.7	+ 6.0	− 0.1	+ 4.2
27	− 3.2	− 15 48.0	. .	− 15 51.2
28	− 3.1	+ 15 48.0	. .	+ 15 44.9
36	− 1.8	− 6.7	. .	− 8.5
37	− 1.8	+ 6.7	− 0.1	+ 4.8
44	− 3.2	− 15 47.6	. .	− 15 50.8
45	− 3.1	+ 15 47.6	. .	+ 15 44.5
46	− 2.5	. .	0.0	− 2.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s	s.	s.	h. m. s.	s.
Aug. 3	1	δ Ursæ Minoris	F.	. .	. .	59.5	34.0	9.5	43.0	17.5	. .	. .	15 12.20	− 0.37	. .	−42.38	18 14 29.45	+ 0.27
	2	α Lyræ	F.	1.4	4.7	11.7	14.3	17.0	19.5	22.0	29.4	32.6	33 16.96	− 0.28	−42.40	−42.38	18 32 34.30	+ 0.04
	3	51 Cephei, S. P.	F.	. .	. .	34.0	52.0	9.5	28.0	47.0	. .	. .	39 9.85	+ 0.26	. .	−42.38	6 38 27.73	+ 0.65
	4	β Lyræ	F.	47.0	50.0	51.9	59.0	1.5	4.0	11.3	13.1	16.1	46 1.54	− 0.28	−42.38	−42.38	18 45 18.88	+ 0.03
	5	ζ Aquilæ	F.	58.3	1.0	2.6	8.7	10.8	12.9	19.2	20.7	23.3	0 10.83	− 0.26	−42.43	−42.38	18 59 28.19	+ 0.13
	6	κ Aquilæ	F.	26.3	28.9	30.5	36.6	38.6	40.6	46.8	48.3	50.9	30 38.61	− 0.25	−42.37	−42.39	19 29 55.97	+ 0.02
	7	γ Aquilæ	F.	37.0	39.6	41.4	. .	. .	. .	. .	. .	. .	40 49.53	− 0.26	−42.39	−42.39	19 40 6.88	+ 0.03
	8	α Aquilæ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	9	β Aquilæ	F.	28.1	30.7	32.3	38.3	40.5	42.6	48.7	50.2	52.8	49 40.47	− 0.26	−42.43	−42.39	19 48 57.82	+ 0.07
	10	τ Aquilæ	F.	19.8	22.3	24.0	30.0	32.0	34.0	40.3	41.8	44.5	58 32.08	− 0.26	−42.32	−42.39	19 57 49.43	− 0.05
	11	Concordia	F.	. .	. .	. .	58.7	1.3	3.8	5.8	7.8	. .	24 3.68	− 0.24	. .	−42.39	20 23 21.05	. .
	12	Hebe	F.	52.7	55.3	57.0	3.3	5.3	7.4	14.0	15.3	18.0	32 5.37	− 0.24	. .	−42.39	20 31 22.74	. .
	13	ζ Cygni	F.	55.2	58.0	59.9	7.0	9.3	11.6	18.6	20.3	23.4	8 9.26	− 0.27	−42.45	−42.40	21 7 26.59	+ 0.06
	14	α Cephei, (R.)	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	15	ε Pegasi, (R.)	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	16	α Aquarii, (R.)	F.	38.6	41.0	42.7	48.7	. .	52.7	58.9	0.4	3.0	59 50.75	+ 0.16	. .	−42.40	21 59 8.51	+ 0.05
	17	θ Aquarii	F.	30.8	33.4	34.9	41.1	43.1	44.2	51.4	52.9	55.5	10 43.03	− 0.24	−42.33	−42.40	22 10 0.39	− 0.05
	18	π Aquarii	F.	10.8	13.2	14.9	21.0	23.0	25.0	31.2	32.7	35.3	19 23.01	− 0.25	−42.44	−42.40	22 18 40.36	+ 0.06
	19	Egeria	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	20	α Canis Minoris	F.	. .	. .	. .	12.2	14.2	16.0	20.2	21.7	24.4	33 12.06	− 0.21	−42.55	−42.44	7 32 29.41	− 0.03
4	21	Sun I, S.	S.	29.0	31.7	33.3	39.7	41.9	44.0	50.4	52.1	54.7	57 41.87	− 0.22	. .	−42.46	8 56 59.19	. .
	22	Sun II	S.	. .	50.0	52.1	54.2	56.4	58.7	3.0	4.5	7.3	59 54.25	− 0.22	. .	−42.46	8 59 11.57	. .
	23	Moon I, N.	S.	5.7	8.2	10.0	16.5	18.6	20.6	27.2	28.8	31.4	16 18.56	− 0.23	. .	−42.55	15 15 35.78	+69.20
	24	α Serpentis	S.	23.6	26.2	27.8	33.9	35.9	38.0	44.1	45.6	48.2	38 35.92	− 0.24	−42.56	−42.56	15 37 53.12	+ 0.02
	25	ε Coronæ Borealis	S.	42.5	45.4	47.2	54.0	56.3	58.6	5.5	7.2	10.0	52 56.30	− 0.23	. .	−42.56	15 52 13.51	− 0.06
	26	δ Ursæ Minoris	S.	. .	. .	. .	. .	. .	. .	29.5	. .	38.5	15 11.45	+ 0.52	. .	−42.60	18 14 29.37	. .
	27	α Canis Majoris	Ha.	55.0	57.6	59.2	5.5	7.6	9.8	16.0	17.8	20.4	40 7.66	− 0.10	−43.02	−42.94	6 39 24.62	0.00
	28	Venus II, N.	IIa.	7.3	10.0	11.8	18.4	20.6	22.8	29.4	31.2	33.8	51 20.59	− 0.18	. .	−42.94	6 50 37.47	− 0.45
	29	Venus, S.	Ha.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
5	30	Sun I, N.	Ha.	20.4	23.0	24.7	31.0	33.1	35.4	41.6	43.3	46.0	1 33.17	− 0.17	. .	−42.96	9 0 50.04	. .
	31	Sun II, S.	Ha.	32.5	37.0	41.3	43.4	45.5	47.8	49.9	54.0	58.3	3 45.52	− 0.17	. .	−42.96	9 3 2.39	. .
	32	Polaris, S. P.	Ha.	. .	. .	21.5	57.0	31.0	9.0	46.0	. .	. .	12 32.40	+ 2.15	. .	−43.00	1 11 51.55	− 0.41
	33	Moon I, N.	Ha.	37.5	40.3	42.0	48.5	50.7	52.9	59.4	1.0	3.7	14 50.67	− 0.10	. .	−43.03	16 14 7.54	+70.48
	34	κ Ophiuchi	Ha.	3.3	5.8	7.4	13.5	15.6	17.7	23.8	25.4	27.9	52 15.60	− 0.16	−42.98	−43.03	16 51 32.41	− 0.01
	35	d Herculis	Ha.	18.4	21.4	23.4	30.6	33.0	35.6	43.0	44.8	47.8	57 33.11	− 0.21	. .	−43.03	16 56 49.87	+ 0.12
	36	α^1 Herculis	Ha.	15.5	17.9	19.5	25.8	28.0	30.0	36.4	38.0	40.6	9 27.97	− 0.17	−42.98	−43.04	17 8 44.76	− 0.04
	37	44 Ophiuchi	Ha.	57.6	0.5	2.1	8.7	11.0	13.3	20.0	21.6	24.3	19 10.96	− 0.09	42.93	−43.04	17 18 27.83	− 0.08
	38	Groom., 966, S. P.	Ha.	. .	. .	18.7	11.4	2.9	54.9	47.5	. .	. .	23 3.13	+ 0.07	. .	−43.04	5 22 10.16	− 0.73
	39	ω Draconis, (R.)	Ha.	53.6	4.8	16.3	21.7	27.6	33.2	38.8	50.0	1.0	38 27.44	+ 0.66	. .	−43.04	17 37 45.06	− 0.16
	40	γ Draconis, (R.)	Ha.	0.4	3.8	16.5	20.0	23.0	26.6	32.7	35.1	39.6	54 19.79	+ 0.40	. .	−43.04	17 53 37.15	− 0.20
	41	μ^1 Sagittarii	Ha.	31.5	34.3	35.8	42.5	44.7	46.8	53.5	54.9	57.7	6 44.63	− 0.10	−43.06	−43.04	18 6 1.49	+ 0.03
	42	δ Ursæ Minoris	Ha.	. .	. .	4.5	38.0	13.0	48.5	23.0	. .	. .	15 13.60	− 1.34	. .	−43.05	18 14 29.21	+ 0.63
	43	1 Aquilæ, (R.)	Ha.	40.5	43.0	44.6	50.9	52.9	55.0	1.0	2.7	5.3	28 52.88	− 0.04	. .	−43.05	18 28 9.79	− 0.16
	44	51 Cephei, S. P.	Ha.	. .	. .	34.5	53.0	8.5	26.0	43.0	. .	. .	39 8.75	+ 1.24	. .	−43.05	6 38 26.94	− 0.82
	45	d Sagittarii	Ha.	34.0	36.8	38.4	45.0	47.0	49.2	55.8	57.2	0.0	10 47.04	− 0.10	−43.02	−43.05	19 10 3.89	− 0.01
	46	δ Aquilæ	Ha.	29.7	32.2	33.9	39.8	41.9	44.0	50.0	51.6	54.0	19 41.90	− 0.15	−43.04	−43.06	19 18 58.69	+ 0.03
	47	κ Aquilæ	Ha.	26.9	29.4	31.0	37.1	39.1	41.3	47.5	49.1	51.6	30 39.22	− 0.13	−43.00	−43.06	19 29 56.03	+ 0.08

11, 12, 19. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. I.	II.	III.	IV.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	312 14	20.1	18.8	0.6	0.1	25	815	810	790	840	818	67.2	312 18 3.2	. .	— 1 0.0	3 23 24.4	+ 0.6
2	0 10	10 18.7	18.1	0.0	28.7	27	. .	900	. .	836	. .	67.2	0 13 33.0	. .	+ 0.2	51 19 54.4	— 0.3
3	306 4	14.8	14.0	25.2	25.4	22	248	254	230	250	250	67.2	306 9 2.6	. .	— 1 14.6	57 14 9.2	+ 0.3
4	5 36	15.5	14.9	26.8	24.3	24	. .	266	. .	162	. .	67.2	5 40 32.4	. .	+ 5.4	56 46 59.0	+ 0.5
5	25 8	17.2	17.0	28.0	27.6	23	. .	420	. .	376	. .	67.2	25 12 42.6	. .	+ 25.7	76 19 29.5	+ 1.6
6	46 8	17.9	17.7	29.2	28.8	28	. .	420	. .	514	. .	67.2	46 11 24.0	. .	+ 56.7	97 18 41.9	+ 1.7
7	28 30	16.0	14.8	26.1	25.0	22	. .	204	. .	096	. .	67.2	28 35 3.6	. .	+ 29.7	79 41 54.5	+ 0.2
8	30 18	21.0	21.4	2.8	0.8	28	. .	700	. .	640	. .	67.2	30 21 17.9	. .	+ 32.0	81 28 11.1	— 0.2
9	32 44	14.1	14.3	24.9	24.5	27	. .	978	. .	890	. .	67.2	32 47 51.5	. .	+ 35.2	83 54 17.9	+ 1.5
10	31 54	14.7	15.3	25.7	24.7	25	. .	836	. .	772	. .	67.2	31 58 8.2	. .	+ 34.2	83 5 3.6	+ 2.1
11	53 34	17.5	17.2	29.0	28.2	29	. .	. .	. .	034	. .	67.2	53 39 50.0	. .	+ 1 14.7	104 47 25.9	— 4.1
12	52 44	8.8	9.3	20.5	20.0	25	. .	410	. .	346	. .	67.2	52 50 54.4	. .	+ 1 12.6	103 58 28.2	— 6.1
13	9 8	15.2	14.8	26.9	25.2	27	. .	774	. .	716	. .	67.2	9 11 38.2	. .	+ 8.9	60 18 8.3	— 0.1
14	203 6	12.9	12.9	25.6	23.7	33	. .	. .	470	520	. .	67.2	203 8 9.5	. .	+ 23.6	27 57 48.1	— 0.1
15	150 20	14.2	12.0	24.1	24.9	26	. .	814	. .	780	. .	67.2	150 23 54.7	. .	— 31.4	80 42 57.9	— 1.9
16	140 8	10 6.4	7.6	19.4	18.6	33	. .	472	. .	410	. .	67.2	140 10 18.2	. .	— 46.1	90 56 49.1	+ 0.4
17	47 14	15.6	16.2	27.8	26.5	25	. .	356	. .	300	. .	67.2	47 18 13.9	. .	+ 1 0.0	98 25 35.1	+ 2.0
18	38 6	15.0	13.9	25.5	24.5	27	. .	892	. .	810	. .	67.2	38 9 37.2	. .	+ 43.5	89 16 41.9	+ 1.0
19	75 22	15.1	15.5	26.0	25.6	24	. .	214	. .	190	. .	67.2	75 29 6.3	. .	+ 3 30.4	126 38 57.9	— 4.6
20																	
21	21 54	19.5	21.0	1.4	1.1	26	. .	. .	870	792	. .	66.6	21 57 44.9	. .	+ 21.7	73 4 27.8	
22																	
23	52 2	7.7	7.6	17.7	18.8	27	882	672	540	362	148	66.6	52 55 46.4	. .	+ 1 12.2	104 3 19.8	
24	31 58	22.5	21.4	1.0	0.6	22	874	852	. .	848	800	66.6	32 2 46.6	. .	+ 34.2	83 9 42.0	+ 0.7
25	11 34	20.6	20.6	1.0	29.6	26	. .	443	. .	367	. .	66.6	11 37 53.2	. .	+ 11.3	62 44 25.7	+ 0.9
26																	
27	55 20	10 16.2	19.4	1.0	29.8	23	. .	362	. .	432	. .	66.7	55 24 40.3	. .	+ 1 19.1	106 32 20.6	+ 0.5
28	16 30	19.0	21.0	1.8	0.3	23	305	. .	. .	. .	190	66.7	16 34 41.5	. .	+ 16.3	67 41 19.0	
29	16 30	19.0	21.0	1.8	0.3	22	. .	455	. .	420	. .	66.7	16 34 53.7	. .	+ 16.3	67 41 31.2	
30	21 38	21.7	22.8	4.1	2.1	24	355	335	. .	. .	. .	66.7	21 42 24.4	. .	+ 21.6	72 49 7.2	
31	22 10	19.6	20.2	2.1	1.7	26	. .	. .	. .	085	140	66.7	22 13 55.7	. .	+ 22.1	73 20 39.0	
32	307 28	10 19.4	21.5	2.2	3.5	27	. .	575	570	580	. .	67.4	307 31 34.7	. .	— 1 10.0	358 36 45.9	+ 0.8
33	56 56.8	9 8.1 13 8.5	9.9 9.9	20.2 19.8	21.1 21.0	28	. .	891	765	520	. .	67.4	56 59 59.0	. .	+ 1 24.4	108 7 44.6	
34	29 14	22.3	22.5	3.5	2.6	25	. .	950	. .	964	. .	67.4	29 18 13.8	. .	+ 30.9	80 25 5.9	+ 1.4
35	5 4	22.0	22.1	3.4	1.0	26	. .	600	. .	520	. .	67.4	5 7 50.0	. .	+ 5.0	56 14 16.2	+ 1.4
36	24 16	23.1	23.5	4.0	2.9	23	. .	350	. .	335	. .	67.4	24 20 37.8	. .	+ 25.0	75 27 24.0	+ 1.6
37	62 50	22.0	22.1	4.0	3.4	21	. .	740	. .	760	. .	67.4	62 55 2.4	. .	+ 1 47.6	114 3 11.2	+ 3.4
38	293 48	21.2	20.9	1.2	2.3	23	. .	. .	652	. .	. .	67.4	293 52 35.0	. .	— 2 4.1	344 56 52.1	+ 1.7
39	209 52	20.9	21.0	1.9	0.6	29	020	025	. .	950	865	67.4	209 55 12.6	. .	+ 31.9	21 10 36.7	— 3.4
40	192 34	10 20.6	20.4	0.7	29.6	30	810	800	. .	725	675	67.4	192 36 46.7	. .	+ 12.4	38 29 22.1	— 3.0
41	59 52	21.4	22.0	3.5	2.7	20	. .	325	. .	340	. .	67.4	59 57 24.5	. .	+ 1 35.7	111 5 21.4	+ 1.4
42	312 14	22.4	22.1	3.0	2.8	25	. .	510	580	590	. .	67.4	312 18 4.7	. .	— 1 1.0	3 23 24.9	+ 1.7
43	132 44	10 19.5	18.7	0.0	0.0	27	. .	850	. .	815	790	67.4	132 47 34.2	. .	— 1 0.1	98 19 47.1	— 1.7
44	306 4	19.5	19.0	29.5	0.5	21	. .	745	832	838	. .	67.4	306 9 4.9	. .	— 1 16.2	357 14 9.9	+ 1.5
45	57 58	20.0	20.6	1.8	1.5	22	. .	290	. .	190	. .	67.4	58 2 56.8	. .	+ 1 29.2	109 10 47.2	+ 3.3
46	35 58	21.1	21.2	2.2	0.9	28	. .	630	. .	530	. .	67.4	36 1 19.6	. .	+ 40.6	87 8 21.4	+ 0.6
47	46 8	22.7	23.6	4.8	3.6	28	. .	270	. .	170	. .	67.4	46 11 22.8	. .	+ 58.2	97 18 42.2	+ 2.1

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	29.920	81.0	80.9
6	. .	. .	83.9
12	. .	. .	77.2
15	29.990	79.0	77.0
19	29.890	79.5	76.2
20	. .	. .	88.8
23	. .	. .	80.1
25	. .	. .	79.9
26	29.860	79.8	
27	. .	. .	81.9
29	29.950	77.5	82.5
31	29.932	79.0	86.5
32	29.990	81.0	88.6
33	29.912	79.5	78.0
38	. .	. .	75.0
40	. .	. .	72.8
42	. .	. .	72.1
44	29.916	76.0	70.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
21	— 3.3	— 15 47.4	. .	— 15 50.7
23	—47 6.4	+ 16 10.5	. .	— 30 55.9
28	— 1.8	+ 6.0	. .	+ 4.2
29	— 1.8	— 6.0	. .	— 7.8
30	— 3.2	+ 15 45.9	. .	+ 15 42.7
31	— 3.2	— 15 45.9	. .	— 15 49.1
33	—49 23.8	+ 16 7.8	. .	— 33 16.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 5	1	γ Aquilæ	Ha.	37.6	40.1	41.8	48.0	50.0	52.0	58.3	0.0	2.6	40 50.04	− 0.16	−43.00	−43.06	19 40 6.82	− 0.03
	2	α Aquilæ	Ha.	59.5	2.0	3.7	9.7	11.7	13.8	20.0	21.6	24.2	45 11.80	− 0.16	−43.06	−43.06	19 44 28.58	+ 0.04
	3	β Aquilæ	Ha.	28.7	31.3	32.9	39.0	41.1	43.1	49.2	50.8	53.4	49 41.06	− 0.15	−43.02	−43.06	19 48 57.85	+ 0.09
	4	λ Ursæ Minoris	Ha.	. .	. .	. .	. .	. .	44.0	31.0	8.0	28.0	55 55.55	− 3.79	. .	−43.06	19 55 8.70	− 4.26
	5	α² Capricorni	Ha.	23.3	26.0	27.5	33.8	35.9	38.0	44.2	45.9	48.4	11 35.89	− 0.12	−43.08	−43.06	20 10 52.71	+ 0.06
	6	Anonymous	Ha.	1.3	3.8	5.5	9.7	. .	18.1	22.3	24.0	26.5	29 13.90	− 0.11	. .	−43.07	20 28 30.72	. .
	7	α Orionis	E.	39.0	41.6	43.2	49.4	51.5	53.5	59.6	1.3	3.8	48 51.43	− 0.24	−43.15	−43.06	5 48 8.13	+ 0.06
	8	μ Geminorum	E.	35.8	38.5	40.4	46.8	49.0	51.3	57.8	59.5	2.4	15 49.06	− 0.24	−43.17	−43.07	6 15 5.75	+ 0.06
	9	γ Geminorum	E.	42.6	45.3	46.9	53.2	55.3	57.4	3.8	5.4	8.0	30 55.32	− 0.24	−43.13	−43.07	6 30 12.01	+ 0.03
	10	α Canis Majoris	E.	55.3	58.0	59.5	6.0	8.0	10.0	16.5	18.2	20.9	40 8.04	− 0.22	−43.26	−43.07	6 40 24.75	+ 0.11
	11	ε Canis Majoris	E.	59.8	2.7	4.5	9.0	13.6	18.4	23.1	24.8	27.7	54 13.73	− 0.21	−43.16	−43.07	6 53 30.41	− 0.06
	12	Venus II, S.	E.	17.5	20.2	22.1	28.4	30.8	33.0	39.7	41.3	44.0	56 30.78	− 0.24	. .	−43.07	6 55 47.47	− 0.45
	13	Venus, N. C.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	14	δ Canis Majoris	E.	35.4	38.3	40.2	46.9	49.1	51.3	58.0	59.9	2.8	3 49.10	− 0.22	−43.12	−43.07	7 3 5.81	0.00
	15	δ Geminorum	E.	. .	. .	. .	. .	6.8	9.0	13.5	15.1	17.8	13 4.62	− 0.24	−43.23	−43.07	7 12 21.31	+ 0.10
	16	α² Geminorum	E.	46.8	49.8	51.7	58.9	1.1	3.6	10.8	12.6	15.7	27 1.22	− 0.23	−43.29	−43.07	7 27 17.92	+ 0.46
	17	α Canis Minoris	E.	0.5	3.1	4.7	10.8	12.8	14.9	21.0	22.6	25.2	33 12.84	− 0.24	−43.26	−43.07	7 32 29.53	+ 0.05
	18	β Geminorum	E.	50.6	53.5	55.4	2.3	4.6	6.9	13.8	15.5	18.4	38 4.56	− 0.23	−43.26	−43.07	7 37 21.26	+ 0.16
6	19	Sun I, N.	E.	11.0	13.5	15.2	21.5	23.6	25.8	32.0	33.7	36.6	5 23.66	− 0.24	. .	−43.08	9 4 40.34	. .
	20	Sun II, S.	E.	23.1	25.9	27.5	33.7	35.9	38.0	44.4	46.2	48.7	7 35.93	− 0.24	. .	−43.08	9 6 52.61	. .
	21	Mercury I	E.	26.2	28.8	30.6	34.6	38.8	43.1	47.3	49.0	51.7	51 38.90	− 0.24	. .	−43.08	9 50 55.58	+ 0.18
	22	α Leonis	E.	57.2	59.9	1.5	7.6	9.8	11.9	18.2	19.8	22.2	2 9.79	− 0.24	−43.14	−43.08	10 1 26.47	+ 0.02
	23	γ¹ Leonis	E.	18.1	. .	26.7	28.9	31.1	33.4	35.5	. .	44.3	13 31.14	− 0.24	−43.19	−43.08	10 12 47.82	+ 0.09
	24	α Ursæ Majoris	E.	56.6	2.2	5.4	18.7	23.0	27.5	40.7	44.0	49.7	56 23.11	− 0.19	. .	−43.08	10 55 39.84	+ 0.44
	25	δ Leonis	E.	41.5	44.2	45.9	52.4	54.6	56.8	3.5	5.0	7.8	7 54.63	− 0.24	−43.18	−43.08	11 7 11.31	+ 0.04
	26	β Leonis	E.	56.2	58.8	0.5	6.8	9.0	11.0	17.3	18.8	21.5	43 8.88	− 0.24	−43.15	−43.09	11 42 25.55	+ 0.05
	27	γ Ursæ Majoris	E.	20.7	24.9	27.9	34.6	41.5	48.6	55.6	58.1	2.7	47 41.62	− 0.21	. .	−43.09	11 46 58.32	+ 0.32
	28	α¹ Herculis	E.	15.5	18.0	19.7	25.9	28.0	30.2	36.5	38.0	40.7	9 28.06	− 0.31	−42.94	−43.11	17 8 44.64	− 0.15
	29	Moon I, N.	E.	9.9	12.1	14.1	20.9	23.1	25.4	32.0	33.7	36.6	15 23.09	− 0.28	. .	−43.11	17 14 39.70	. .
	30	Groom. 966, S. P.	E.	. .	. .	19.8	11.9	4.1	56.2	47.7	. .	. .	23 3.99	− 0.32	. .	−43.11	5 22 20.56	− 0.42
	31	Saturn I, S.	E.	55.9	58.5	0.2	. .	. .	. .	17.8	19.4	22.3	27 9.01	− 0.28	. .	−43.11	17 26 25.62	. .
	32	Saturn II, N.	E.	. .	. .	6.0	8.1	10.4	12.6	14.9	. .	. .	27 10.41	− 0.28	. .	−43.11	17 26 27.02	. .
	33	ω Draconis, (R.)	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	34	δ Ursæ Minoris	E.	45.0 . .	28.5 . .	55.0 3.0	. . 36.5	. . 11.0	. . 46.0	28.5 21.0	54.0 . .	38.0 . .	15 11.53	− 0.38	. .	−43.11	18 14 28.04	− 0.21
	35	ι Aquilæ	E.	41.0	43.5	45.1	51.3	55.3	55.3	1.5	3.0	5.5	28 53.28	− 0.29	−42.98	−43.12	18 28 9.87	− 0.07
	36	α Lyræ	E.	2.0	5.3	7.4	15.1	17.7	20.2	28.1	30.2	33.3	33 17.70	− 0.32	−43.13	−43.12	18 32 34.26	+ 0.03
	37	51 Cephei, S. P.	E.	. .	. .	37.0	54.5	12.0	30.0	47.0	. .	. .	39 11.85	− 0.31	. .	−43.12	6 38 28.42	+ 0.26
	38	β Lyræ	E.	47.7	50.8	52.5	59.8	2.3	4.6	12.0	13.7	16.8	46 2.24	− 0.32	−43.06	−43.12	18 45 18.80	− 0.03
	39	σ Sagittarii	E.	. .	. .	53.3	55.5	57.9	0.2	2.4	. .	. .	47 57.87	− 0.27	−43.03	−43.12	18 47 14.48	− 0.08
	40	50 Draconis	E.	. .	. .	4.6	12.7	20.7	29.1	36.8	. .	. .	51 20.83	− 0.34	. .	−43.12	18 50 37.37	+ 0.17
	41	ζ Aquilæ	E.	59.0	1.5	3.1	9.3	11.4	13.4	19.9	21.4	24.0	0 11.33	− 0.31	−42.89	−43.12	18 59 27.90	− 0.15
	42	d Sagittarii	E.	34.2	37.0	38.6	45.0	47.1	49.2	55.7	57.4	0.3	10 47.17	− 0.28	−42.77	−43.12	19 10 3.97	− 0.13
	43	δ Draconis	E.	46.2	52.8	56.9	12.6	18.4	23.4	39.5	43.4	50.0	13 18.14	− 0.34	. .	−43.12	19 12 34.68	+ 0.30
	44	τ Draconis	E.	8.0	16.8	22.0	43.3	49.8	56.9	18.2	23.2	31.8	18 50.00	− 0.34	. .	−43.12	19 18 6.54	+ 0.26
	45	κ Aquilæ	E.	27.0	29.5	31.0	37.2	39.2	41.3	47.3	49.0	51.5	30 39.22	− 0.29	−42.94	−43.12	19 29 55.81	− 0.14
	46	γ Aquilæ	E.	37.7	40.4	41.9	48.1	50.1	52.2	58.5	0.2	2.7	40 50.20	− 0.31	−43.01	−43.12	19 40 6.77	− 0.08
	47	α Aquilæ	E.	59.6	2.1	3.8	9.9	12.0	14.1	20.3	21.8	24.3	45 11.99	− 0.30	−43.11	−43.12	19 44 28.57	+ 0.03
	48	β Aquilæ	E.	29.0	31.5	33.0	39.1	41.1	43.1	49.4	50.9	53.5	49 41.18	− 0.30	−43.09	−43.12	19 48 57.76	0.00
	49	λ Ursæ Minoris	E.	. .	. .	22.5	11.0	55.0	42.0	33.5	. .	. .	55 57.43	− 0.45	. .	−43.12	19 55 13.86	+ 1.48
	50	α² Capricorni	E.	23.5	26.0	27.8	34.0	36.0	38.0	44.2	45.9	48.6	11 36.00	− 0.29	−43.02	−43.12	20 10 52.59	− 0.06
	51	κ Cephei	E.	. .	. .	43.7	53.2	2.7	11.6	21.2	. .	. .	14 2.54	− 0.35	. .	−43.12	20 13 19.07	+ 0.17

13. Changed one revolution in reduction.
30. Bisections at C_5 and C_1.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	28 30	22.6	23.6	3.7	2.5	21	. .	730	. .	710	. .	67.4	28 35 2.8	. .	+ 30.5	79 41 54.5	+ 0.6
2	30 18	21.5	22.4	2.5	1.1	28	. .	730	. .	665	. .	67.4	30 21 17.3	. .	+ 32.7	81 28 11.2	+ 0.2
3	32 44	21.2	22.5	2.8	1.6	26	. .	. .	. .	512	500	67.4	32 47 49.6	. .	+ 36.0	83 54 46.8	+ 0.6
4	309 56	19.4	19.5	1.6	1.5	27	. .	. .	865	. .	. .	67.4	309 59 31.4	. .	− 1 6.6	1 4 46.0	− 0.5
5	51 44	19.2	20.3	1.2	0.8	21	. .	. .	. .	880	835	67.4	51 49 2.1	. .	+ 1 11.0	102 56 34.3	+ 0.6
6	53 10	22.3	22.4	3.8	3.0	25	. .	. .	. .	. .	260	67.4	53 16 42.3	. .	+ 1 14.9	104 24 18.4	
7	31 26	17.1	18.8	1.0	0.0	25	. .	085	. .	030	. .	66.6	31 30 14.8	. .	+ 33.7	82 37 9.7	+ 0.8*
8	16 14	15.9	17.6	29.6	28.0	23	. .	150	. .	141	. .	66.6	16 18 45.4	. .	+ 16.0	67 25 22.6	0.0
9	22 18	16.3	18.2	29.5	29.2	22	858	842	. .	803	758	66.6	22 22 50.1	. .	+ 22.5	73 29 33.8	+ 1.0
10	55 20	15.6	18.2	29.6	29.2	23	. .	590	. .	485	. .	66.6	55 24 39.0	. .	+ 1 19.1	106 32 19.3	− 0.7
11	67 34	15.4	16.2	28.4	29.2	21	. .	525	. .	515	. .	66.6	67 39 10.6	. .	+ 2 11.9	118 47 43.7	+ 0.6
12	16 34	17.5	19.4	0.7	0.0	24	120	. .	. .	. .	080	66.6	16 38 29.5	. .	+ 16.3	67 45 7.0	
13	16 34	17.5	19.4	0.7	0.0	23	. .	980	. .	970	. .	66.6	16 38 16.0	. .	+ 16.3	67 44 53.5	
14	64 58	12.7	14.5	26.2	28.2	22	. .	600	. .	450	. .	66.6	65 2 57.1	. .	+ 1 56.6	116 11 14.9	+ 2.4
15	16 36	17.5	19.5	1.0	0.0	24	. .	630	. .	628	. .	66.6	16 40 20.1	. .	+ 16.3	67 46 57.6	+ 5.1
16	6 40	17.8	19.0	1.5	29.7	28	650	610	. .	535	520	66.6	6 43 21.0	. .	+ 6.4	57 49 48.6	+ 0.2
17	33 16	15.2	16.7	28.5	28.2	27	. .	395	. .	318	. .	66.6	33 19 41.7	. .	+ 35.8	84 26 38.7	− 0.2
18	10 30	17.0	18.6	1.4	0.3	28	. .	935	. .	908	. .	66.6	10 33 15.7	. .	+ 10.1	61 39 47.0	+ 0.9
19	21 54	10 20.5	22.2	3.6	3.8	22	738	722	. .	. .	. .	66.6	21 58 48.7	. .	+ 21.7	73 5 31.6	
20	22 26	10 21.2	20.9	2.9	3.2	24	. .	. .	. .	178	142	66.6	22 30 24.5	. .	+ 22.3	73 37 8.0	
21																	
22	26 12	22.5	23.7	6.5	4.0	21	365	333	. .	265	250	66.6	26 17 7.3	. .	+ 26.6	77 23 55.1	+ 2.0
23	18 20	17.9	19.2	0.6	0.3	28	. .	150	. .	010	. .	66.6	18 23 28.4	. .	+ 17.9	69 30 7.5	+ 3.0
24	336 22	17.2	19.6	0.5	29.6	22	. .	785	. .	755	. .	66.6	336 26 50.4	. .	− 23.5	27 32 48.1	+ 1.0
25	17 34	20.1	22.6	2.8	1.2	21	235	225	. .	150	125	66.6	17 39 11.7	. .	+ 17.2	68 45 50.1	+ 1.8
26	23 32	20.2	22.8	2.3	1.5	28	. .	600	. .	565	. .	66.6	23 35 18.5	. .	+ 23.6	74 42 3.3	+ 2.6
27	344 24	17.3	18.4	28.5	29.0	23	. .	290	. .	262	. .	66.6	344 28 43.4	. .	− 15.0	35 34 49.6	+ 1.3
28	24 16	23.8	23.6	4.2	4.2	23	. .	310	. .	295	. .	66.2	24 20 36.6	. .	+ 24.9	75 27 22.7	+ 0.4
29	59 52	10 7.0	8.0	26.3	27.2	26	. .	765	680	540	. .	66.2	59 55 41.9	. .	+ 1 34.6	111 3 37.7	
30	293 48	22.0	21.6	2.6	4.0	23	. .	600	. .	565	. .	66.2	293 52 33.6	. .	− 2 3.5	344 56 51.3	+ 1.0
31	60 52	22.5	22.6	4.5	4.5	24	310	. .	. .	. .	200	66.2	60 56 22.1	. .	+ 1 38.6	112 4 21.9	
32	60 52	22.5	22.6	4.5	4.5	25	. .	670	. .	650	. .	66.2	60 56 0.7	. .	+ 1 38.6	112 4 0.5	
33	209 52	22.8	23.2	3.2	1.3	28	. .	. .	. .	945	930	66.2	209 55 9.1	. .	+ 31.7	21 10 40.4	+ 0.5
34	312 14	22.5	22.0	4.5	3.5	25	675	660	640	600	585	66.2	312 18 1.8	. .	− 1 0.7	3 23 22.3	− 0.7
35	47 8	22.0	22.8	5.1	4.0	23	. .	920	. .	895	. .	66.2	47 12 27.7	. .	+ 59.8	98 19 48.7	− 0.1
36	0 10	22.9	22.8	2.5	1.7	22	. .	772	. .	660	. .	66.2	0 13 30.7	. .	+ 0.2	51 19 52.1	− 1.9
37	306 4	21.3	20.3	1.2	2.0	21	780	795	775	780	770	66.2	306 9 2.4	. .	− 1 15.7	357 14 7.9	− 0.1
38	5 36	21.2	21.7	4.7	1.8	23	. .	772	. .	760	. .	66.2	5 40 31.2	. .	+ 5.5	56 46 57.9	+ 0.1
39																	
40																	
41	25 8	25.5	25.2	6.5	5.0	22	. .	975	. .	960	. .	66.2	25 12 40.1	. .	+ 26.1	76 19 27.4	− 0.1
42	57 58	22.0	22.3	2.5	2.8	22	. .	035	. .	010	. .	66.2	58 2 57.5	. .	+ 1 28.7	109 10 47.4	+ 3.5
43	331 24	23.0	24.7	4.5	5.0	25	. .	998	. .	970	. .	66.2	331 27 55.5	. .	− 30.2	22 33 46.5	− 1.7
44	325 44	21.5	21.7	2.5	2.5	28	. .	840	. .	780	. .	66.2	325 47 15.2	. .	− 37.7	16 52 58.7	− 0.5
45	46 8	22.5	24.0	4.6	3.8	28	. .	235	. .	210	. .	66.2	46 11 21.4	. .	+ 57.8	97 18 40.4	+ 0.4
46	28 30	21.7	22.8	2.8	2.3	21	695	. .	640	. .	. .	66.2	28 35 3.3	. .	+ 30.3	79 41 54.8	+ 1.0
47	30 18	26.3	28.0	3.0	2.3	28	. .	380	. .	275	. .	66.2	30 21 18.7	. .	+ 32.5	81 28 12.4	+ 1.5
48	32 44	22.0	23.5	3.9	3.0	26	. .	520	. .	415	. .	66.2	32 47 49.0	. .	+ 35.8	83 54 46.0	0.0
49	309 56	10 16.0	16.0	27.3	27.8	28	225	170	135	080	010	66.2	309 59 30.2	. .	− 1 6.1	1 4 45.3	− 0.9
50	51 44	19.4	20.2	1.8	1.2	21	. .	885	. .	870	. .	66.2	51 49 1.5	. .	+ 1 10.6	102 56 33.3	− 0.4
51	321 32	21.6	22.0	2.9	2.6	29	. .	368	. .	325	. .	66.2	321 35 7.2	. .	− 44.1	12 40 44.3	+ 0.1

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
3	. .	. .	69.0
6	29.904	73.0	68.1
7	29.950	73.0	79.0
20	. .	. .	91.5
37	29.993	79.5	75.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
12	− 1.8	− 6.8	. .	− 8.6
13	− 1.8	+ 6.8	− 0.1	+ 4.9
19	− 3.3	+ 15 48.2	. .	+ 15 44.9
20	− 3.3	− 15 48.2	. .	− 15 51.5
29	−50 46.0	+ 16 3.7	. .	− 34 42.3
31	− 0.8	− 10.7	. .	− 11.5
32	− 0.8	+ 10.7	. .	+ 9.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us Corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 6	1	61¹ Cygni	E.	34.9	38.0	40.0	47.8	50.3	52.6	0.5	2.5	5.8	1 50.27	— 0.32	—43.03	—43.12	21 1 6.83	— 0.12
	2	ζ Cygni	E.	56.0	58.9	0.8	7.7	10.0	12.4	19.4	21.3	24.1	8 10.07	— 0.31	—43.20	—43.12	21 7 26.64	+ 0.09
	3	ι Pegasi	E.	37.3	39.8	41.6	47.9	50.0	52.1	58.7	0.3	3.0	16 50.08	— 0.31	—43.04	—43.13	21 16 6.64	— 0.14
	4	ι Draconis, S. P. .	E.	. .	. .	. .	10.8	56.7	41.9	. .	. .	. .	18 56.50	— 0.34	. .	—43.13	9 18 13.05	+ 0.25
	5	β Aquarii. . . .	E.	16.0	18.6	20.3	26.2	28.3	30.5	36.6	38.1	40.7	25 28.37	— 0.29	—43.01	—43.13	21 24 44.95	— 0.09
	6	β Cephei	E.	. .	. .	34.5	40.5	46.4	52.3	58.3	. .	. .	27 46.45	— 0.34	. .	—43.13	21 27 2.98	+ 0.22
	7	ξ Aquarii. . . .	E.	23.1	25.5	27.0	33.3	35.3	37.4	43.7	45.0	47.6	31 35.32	— 0.29	—43.02	—43.13	21 30 51.90	— 0.09
	8	ε Pegasi	E.	21.2	23.8	25.5	31.5	33.5	35.6	42.0	43.4	46.1	38 33.62	— 0.31	—43.03	—43.13	21 37 50.18	— 0.09
	9	μ Capricorni. . .	E.	45.5	48.0	49.7	55.8	57.9	59.9	6.3	8.0	10.6	46 57.97	— 0.29	—43.04	—43.13	21 46 14.55	— 0.06
7	10	γ Geminorum . .	S.	42.7	45.4	47.1	53.4	55.6	57.6	4.0	5.6	8.3	30 55.52	— 0.17	—43.35	—43.42	6 30 11.93	— 0.10
	11	α Canis Majoris. .	S.	58.1	59.7	4.0	6.0	8.2	10.2	12.5	16.8	18.4	40 8.21	— 0.08	—43.53	—43.42	6 39 24.71	+ 0.03
	12	Venus, N. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	13	Venus, S. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
8	14	Sun I, S. . . .	S.	49.9	52.5	54.1	0.4	2.6	4.7	11.0	12.6	15.2	13 2.56	— 0.17	. .	—43.45	9 12 18.94	. .
	15	Sun II, N. . . .	S.	. .	. .	12.4	14.5	16.6	18.7	23.0	24.5	27.2	15 14.48	— 0.17	. .	—43.45	9 14 30.86	. .
	16	β Leonis	S.	56.4	59.2	0.8	7.0	9.0	11.2	17.5	19.0	21.7	43 9.09	— 0.16	—43.45	—43.47	11 42 25.46	— 0.03
	17	Polaris, S. P. .	S.	. .	. .	. .	25.0	1.0	6.5	11.0	48.0	. .	12 35.82	+ 2.15	. .	—43.49	1 11 54.48	+ 0.02
	18	α Virginis . .	S.	52.4	55.0	56.5	2.8	4.8	6.9	13.0	14.5	17.3	19 4.80	— 0.10	—43.46	—43.49	13 18 21.21	— 0.05
	19	η Herculis . .	Ha.	55.6	58.9	1.0	8.8	11.4	14.0	22.0	23.9	27.2	39 11.42	— 0.25	—43.48	—43.49	16 38 27.68	0.00
	20	κ Ophiuchi . .	Ha.	3.7	6.3	7.9	14.0	16.2	18.1	24.4	25.9	28.4	52 16.10	— 0.17	—43.51	—43.49	16 51 32.44	+ 0.06
	21	ε Ursæ Minoris .	Ha.	. .	. .	39.4	54.5	9.3	24.7	39.6	. .	. .	0 9.59	— 0.83	. .	—43.49	16 59 25.27	— 0.31
	22	α¹ Herculis . .	Ha.	15.7	18.5	20.0	26.3	28.5	30.6	36.9	38.4	41.0	9 28.43	— 0.18	—43.47	—43.50	17 8 44.75	— 0.01
	23	44 Ophiuchi . .	Ha.	58.2	1.0	2.6	9.3	11.5	13.8	20.5	22.1	24.8	19 11.53	— 0.09	—43.53	—43.50	17 18 27.94	+ 0.06
	24	δ Ursæ Minoris .	S.	. .	29.0	55.0	2.0	36.5	12.0	45.0	20.0	. .	15 11.70	— 1.65	. .	—43.54	18 14 26.51	— 1.06
	25	51 Cephei, S. P. .	S.	. .	. .	34.0	51.5	8.7	26.0	43.5	. .	. .	39 8.50	+ 1.55	. .	—43.55	6 38 26.50	— 2.50
	26	β Lyræ . . .	S.	47.9	51.0	52.9	0.2	2.7	5.2	17.4	14.2	17.3	46 2.64	— 0.23	—43.57	—43.55	18 45 18.86	+ 0.05
	27	ζ Aquilæ. . . .	Ha.	59.2	1.9	3.5	9.7	11.8	13.9	20.2	21.8	24.4	0 11.82	— 0.18	—43.52	—43.52	18 59 28.12	+ 0.08
	28	d Sagittarii . .	Ha.	34.6	37.3	39.0	45.5	47.6	49.8	56.2	57.7	0.5	10 47.58	— 0.10	—43.56	—43.52	19 10 3.96	+ 0.06
	29	Moon I, S. . .	Ha.	54.0	56.7	58.4	5.3	7.6	9.8	16.7	18.3	21.1	19 7.54	— 0.09	. .	—43.55	19 18 23.90	+71.37
	30	κ Aquilæ. . . .	Ha.	27.3	30.0	31.5	37.6	39.6	41.7	47.9	49.4	52.0	30 39.67	— 0.13	—43.55	—43.52	19 29 56.02	+ 0.07
	31	γ Aquilæ. . . .	Ha.	38.1	40.7	42.2	48.5	50.6	52.6	58.7	0.3	3.0	40 50.52	— 0.17	—43.47	—43.52	19 40 6.83	— 0.02
	32	α Aquilæ. . . .	Ha.	59.9	2.5	4.0	10.1	12.2	14.3	20.4	22.0	24.5	45 12.21	— 0.17	—43.46	—43.52	19 44 28.52	— 0.02
	33	β Aquilæ. . . .	S.	29.3	31.8	33.3	39.4	41.5	43.5	49.6	51.1	53.8	49 41.48	— 0.16	—43.53	—43.52	19 48 57.80	+ 0.04
	34	λ Ursæ Minoris. .	S.	. .	. .	. .	9.0	59.0	49.0	32.0	. .	. .	55 58.52	— 4.69	. .	—43.55	19 55 10.58	— 0.45
9	35	Sun I, N. . . .	Ha.	38.6	41.0	42.7	49.1	51.1	53.2	59.6	1.4	4.0	16 51.19	— 0.19	. .	—43.66	9 16 7.34	. .
	36	Sun II, S. . . .	Ha.	50.0	52.8	54.5	0.8	2.9	4.9	11.5	13.0	15.0	19 2.90	— 0.19	. .	—43.66	9 18 19.05	. .
11	37	α Canis Majoris. .	S.	56.6	59.1	0.9	7.1	9.4	11.4	17.7	19.4	22.0	40 9.29	— 0.11	—44.49	—44.43	6 39 24.75	— 0.02
	38	δ Geminorum . .	S.	52.8	55.3	57.1	3.7	5.8	8.0	14.7	16.4	19.1	13 5.88	— 0.20	—44.40	—44.44	7 12 21.24	— 0.10
	39	Venus II, N. . .	S.	15.3	18.0	19.6	. .	. .	. .	37.2	39.0	41.7	27 28.46	— 0.20	. .	—44.44	7 26 43.82	— 0.44
	40	Venus, S. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	41	α Canis Minoris. .	S.	. .	. .	9.9	12.0	14.0	16.0	18.1	. .	. .	33 14.01	— 0.17	. .	—44.44	7 32 29.40	— 0.18
	42	β Geminorum . .	S.	. .	. .	. .	. .	. .	. .	15.0	16.7	19.7	38 5.74	— 0.11	—44.44	—44.44	7 37 21.19	— 0.03
12	43	β Leonis	S.	57.4	0.0	1.7	8.0	10.1	12.1	18.2	20.0	22.5	43 10.00	— 0.09	—44.45	—44.48	11 42 25.43	— 0.04
	44	Polaris, S. P. .	S.	. .	. .	27.0	4.0	40.0	13.0	51.5	. .	. .	12 38.60	— 0.09	. .	—44.50	1 11 55.00	— 2.16
	45	α Virginis . .	F.	53.6	56.0	57.7	3.8	5.9	8.0	14.2	15.7	18.3	19 5.91	— 0.04	—44.66	—44.64	13 18 21.23	+ 0.01
	46	ζ Virginis . .	F.	37.0	39.7	41.2	47.2	49.4	51.4	57.4	59.0	1.5	28 49.31	— 0.07	—44.64	—44.64	13 28 4.60	0.00
	47	ε Bootis	F.	50.0	53.0	54.8	1.6	3.8	6.2	13.1	14.8	17.7	40 3.89	— 0.11	—44.66	—44.65	14 39 19.13	— 0.01
	48	α² Libræ	F.	14.3	17.0	18.5	24.9	27.0	29.0	35.4	36.9	39.7	44 26.97	— 0.04	—44.65	—44.65	14 43 42.28	— 0.01
	49	β Ursæ Minoris. .	F.	4.3	14.0	20.1	42.9	50.6	58.2	21.6	27.3	37.1	51 50.68	— 0.22	. .	—44.66	14 51 5.80	+ 0.11

4. Bisections at wires C_5 and C_1.
29. Bisections at wires II–VI.
49. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	0 42	21.3	23.6	4.8	2.8	22	. .	810	. .	792	. .	66.2	0 46 45.2	. .	+ 0.8	51 53 7.2	+ 0.8
2	9 8	20.2	20.3	1.2	0.7	27	. .	330	. .	325	. .	66.2	9 11 38.5	. .	+ 9.0	60 18 8.7	+ 1.1
3	19 34	21.2	22.5	4.5	3.0	25	. .	180	. .	075	. .	66.2	19 38 9.8	. .	+ 19.9	70 44 50.9	+ 1.7
4	300 44	19.5	20.5	29.5	0.0	22	. .	240	. .	210	. .	66.2	300 48 57.0	. .	− 1 33.1	351 53 45.1	− 2.3
5	44 56	20.5	20.7	2.5	2.5	21	. .	975	. .	912	. .	66.2	45 0 59.6	. .	+ 55.7	96 8 16.5	− 0.1
6	328 50	20.0	19.3	1.0	0.4	.	. .	250	. .	200	. .	66.2	328 54 42.4	. .	− 33.6	20 0 30.0	− 0.8
7	47 14	19.5	20.8	2.0	1.2	23	. .	700	. .	640	. .	66.2	47 18 33.9	. .	+ 1 0.4	98 25 55.5	− 0.1
8	29 32	25.0	25.6	6.8	6.2	25	. .	160	. .	135	. .	66.2	29 36 6.6	. .	+ 31.7	80 42 59.5	+ 0.3
9	52 58	21.2	21.1	3.3	2.8	26	. .	075	. .	040	. .	66.2	53 1 56.1	. .	+ 1 14.0	104 9 31.3	+ 1.5
10	22 18	18.0	20.1	29.6	29.4	22	783	747	. .	685	686	66.0	22 22 50.0	. .	+ 22.4	73 29 33.6	+ 0.9
11	55 20	19.0	21.8	1.9	1.6	23	327	373	. .	259	203	66.0	55 24 39.4	. .	+ 1 18.7	106 32 19.3	− 0.3
12	16 42	17.8	19.4	29.1	28.8	20	945	. .	. .	. .	843	66.0	16 47 18.6	. .	+ 16.4	67 53 56.2	
13	16 42	17.8	19.4	29.1	28.8	20	. .	054	. .	963	. .	66.0	16 47 31.9	. .	+ 16.4	67 54 9.5	
14	23 0	10 19.0	13.7	23.4	23.4	26	. .	069	. .	. .	. .	66.0	23 4 6.9	. .	+ 23.0	74 10 51.1	
15	22 28	1.4	3.4	12.1	12.0	25	. .	. .	. .	102	090	66.0	22 32 29.3	. .	+ 22.4	73 39 12.9	
16	23 32	21.3	22.6	3.0	1.6	28	684	628	. .	. .	523	66.0	23 35 17.4	. .	+ 23.5	74 42 2.1	+ 1.3
17																	
18																	
19	359 40	25.5	25.5	5.7	3.2	29	. .	152	. .	130	. .	67.7	359 43 8.1	. .	− 0.3	50 49 29.0	+ 1.7
20	29 14	25.6	26.4	6.5	4.0	24	. .	780	. .	745	. .	67.7	29 18 14.1	. .	+ 30.7	80 25 6.0	+ 1.7
21	316 36	24.3	25.2	25.0	23.2	28	. .	. .	206	. .	. .	67.7	316 39 22.6	. .	− 51.6	7 44 52.2	− 0.3
22	24 16	26.2	28.0	7.1	5.4	23	. .	215	. .	160	. .	67.7	24 20 37.1	. .	+ 24.8	75 27 23.1	+ 1.0
23	62 50	22.1	23.5	4.0	3.0	21	. .	725	. .	680	. .	67.7	62 55 2.7	. .	+ 1 46.6	114 3 10.5	+ 2.6
24	312 14	21.6	22.2	2.0	1.2	25	902	840	. .	831	931	67.7	312 18 1.0	. .	− 1 0.3	3 23 21.9	− 0.7
25																	
26	5 36	21.9	22.0	2.0	29.2	24	. .	. .	. .	916	890	67.7	5 40 30.7	. .	+ 5.5	56 46 57.4	0.0
27	25 8	24.5	25.5	4.4	2.4	23	. .	140	. .	100	. .	67.7	25 12 40.6	. .	+ 26.5	76 19 28.3	+ 1.1
28	57 58	23.3	23.5	3.2	2.6	22	. .	080	. .	060	. .	67.7	58 2 57.5	. .	+ 1 28.0	109 10 46.7	+ 2.8
29	62 2	23.6	22.5	4.3	2.9	23	214	312	335	342	281	67.7	62 6 38.4	. .	+ 1 43.6	113 14 43.4	
30	46 8	24.7	26.2	5.7	4.5	28	. .	200	. .	100	. .	67.7	46 11 22.5	. .	+ 57.3	97 18 41.0	+ 1.1
31	28 30	23.5	24.1	3.6	2.0	21	. .	765	. .	710	. .	67.7	28 35 2.6	. .	+ 30.0	79 41 53.8	+ 0.3
32	30 18	24.7	26.1	5.5	2.8	28	. .	575	. .	495	. .	67.7	30 21 17.2	. .	+ 32.3	81 28 10.7	+ 0.1
33	32 44	22.2	23.4	1.7	0.2	26	605	510	. .	485	325	67.7	32 47 50.8	. .	+ 35.5	83 54 47.5	+ 1.7
34																	
35	22 46	22.3	23.5	4.8	2.8	26	820	815	. .	. .	. .	67.7	22 49 46.5	. .	+ 22.6	73 56 30.3	
36	23 18	21.1	21.3	2.3	0.5	28	. .	. .	. .	415	370	67.7	23 21 21.5	. .	+ 23.2	74 28 5.9	
37	55 20	14.8	17.7	27.5	26.8	23	815	695	. .	690	640	67.7	55 24 38.7	. .	+ 1 19.3	106 32 19.2	+ 0.3
38																	
39	17 8	13.0	14.8	25.1	24.6	22	765	. .	. .	. .	675	67.5	17 12 56.6	. .	+ 16.9	68 19 34.7	
40	17 8	13.0	14.8	25.1	24.6	21	. .	910	. .	880	. .	67.5	17 13 9.0	. .	+ 16.9	68 19 47.1	
41	33 16	13.1	15.1	26.2	24.8	27	565	600	. .	570	470	67.5	33 19 42.1	. .	+ 35.8	84 26 39.1	+ 0.6
42																	
43	23 32	15.6	17.5	28.5	27.2	29	050	005	. .	955	930	67.5	23 35 17.8	. .	+ 23.5	74 42 2.5	+ 1.6
44	307 28	12.5	14.5	24.5	25.4	28	030	994	996	030	990	67.3	307 31 34.9	. .	− 1 10.0	358 36 46.1	− 0.7
45	49 18	10 7.0	10.6	20.5	19.0	28	. .	628	. .	490	. .	67.3	49 21 31.8	. .	+ 1 2.7	100 28 55.7	− 0.4
46	38 44	13.7	15.9	26.2	25.3	23	. .	512	. .	418	. .	67.3	38 48 43.8	. .	+ 43.4	89 55 48.4	+ 1.7
47	11 12	10.1	12.7	22.3	22.3	27	. .	120	. .	050	. .	67.3	11 15 52.0	. .	+ 10.8	62 22 24.0	+ 1.0
48	54 18	11.0	14.2	24.1	23.5	24	. .	778	. .	724	. .	67.3	54 22 26.1	. .	+ 1 15.2	105 30 2.5	+ 1.9
49	324 8	4.6	6.1	16.6	18.5	23	. .	804	. .	804	. .	67.3	324 12 47.7	. .	− 38.9	15 18 30.0	− 1.3

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
9	30.004	76.5	72.0
10	. .	. .	87.3
11	. .	. .	87.7
12	. .	. .	88.8
14	30.134	82.5	92.6
16	. .	. .	94.0
19	. .	. .	84.8
23	30.124	83.0	83.5
24	. .	. .	82.0
26	. .	. .	81.6
29	. .	. .	81.0
30	30.134	79.8	
36	30.110	83.0	93.5
37	30.160	78.5	84.0
39	. .	. .	87.0
41	. .	. .	87.3
43	30.133	82.5	93.3
45	. .	. .	92.3
48	. .	. .	91.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
12	− 1.8	+ 6.7	− 0.1	+ 4.8
13	− 1.8	− 6.7	. .	− 8.5
14	− 3.3	− 15 49.1	. .	− 15 52.4
15	− 3.3	+ 15 49.1	. .	+ 15 45.8
29	−51 11.2	− 15 51.2	. .	− 67 2.4
35	− 3.4	+ 15 47.8	. .	+ 15 44.4
36	− 3.4	− 15 47.8	. .	− 15 51.2
39	− 1.8	+ 6.2	. .	+ 4.4
40	− 1.8	− 6.2	. .	− 8.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent Right Ascension.	Miscellan'us corrections.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1870.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 12	1	β Bootis	F.	32.2	35.4	37.5	45.5	48.2	50.9	59.0	1.0	4.4	57 48.23	− 0.13	. .	−44.66	14 57 3.44	+ 0.01
	2	β Libræ	F.	34.1	36.8	38.4	44.4	46.5	48.6	54.8	56.3	58.9	10 46.53	− 0.05	−44.64	−44.66	15 10 1.82	− 0.02
	3	α^1 Herculis	Ha.	16.9	19.5	21.1	27.3	29.5	31.6	37.8	39.5	41.0	9 29.46	− 0.17	−44.56	−44.51	17 8 44.78	+ 0.07
	4	44 Ophiuchi	Ha.	59.2	1.9	3.6	10.3	12.4	14.6	21.4	23.1	25.9	19 12.49	− 0.07	−44.56	−44.51	17 18 27.91	+ 0.08
	5	Groom. 966, S. P.	Ha.	. .	. .	21.1	13.0	5.5	57.5	49.4	. .	. .	23 5.35	+ 0.14	. .	−44.51	5 22 20.98	− 0.54
	6	α Ophiuchi	Ha.	27.8	30.4	32.0	38.2	40.3	42.4	48.7	50.2	52.9	29 40.32	− 0.16	−44.52	−44.51	17 28 55.65	+ 0.04
	7	ω Draconis	Ha.	. .	. .	18.4	24.0	29.8	35.5	41.0	. .	. .	38 29.77	− 0.40	. .	−44.52	17 37 44.85	− 0.05
	8	μ Herculis	Ha.	54.8	57.7	59.4	6.3	8.6	10.8	17.9	19.6	22.4	42 8.61	− 0.20	−44.52	−44.52	17 41 23.89	0.00
	9	γ Draconis	Ha.	2.2	6.3	8.9	18.5	21.8	25.2	35.0	37.3	41.5	54 21.86	− 0.28	. .	−44.52	17 53 37.06	− 0.13
	10	γ^2 Sagittarii	Ha.	0.1	3.0	4.9	11.8	14.2	16.6	23.6	25.4	28.4	58 14.22	− 0.05	−44.51	−44.52	17 57 29.65	0.00
	11	μ^1 Sagittarii	Ha.	33.0	35.6	37.4	43.8	46.5	48.3	54.9	56.5	59.1	6 46.07	− 0.08	−44.58	−44.52	18 6 1.47	+ 0.07
	12	δ Ursæ Minoris	Ha.	. .	. .	2.0	37.0	11.5	46.0	20.5	. .	. .	15 11.60	− 1.66	. .	−44.52	18 14 25.42	. .
	13	I Aquilæ	Ha.	42.3	44.8	46.4	52.6	54.6	56.7	2.8	4.4	7.0	28 54.62	− 0.11	−44.51	−44.53	18 28 9.98	+ 0.08
	14	α Lyræ	Ha.	3.2	6.3	8.4	16.0	18.7	21.4	29.3	31.3	34.5	33 18.79	− 0.23	−44.40	−44.53	18 32 34.03	− 0.11
	15	51 Cephei, S. P.	S.	. .	. .	38.5	. .	11.0	30.0	25.0	54.5	. .	39 13.22	− 1.60	. .	−44.56	6 38 27.06	− 2.54
	16	δ Aquilæ	S.	31.2	33.8	35.3	41.2	43.3	45.4	51.4	53.0	55.6	19 43.36	− 0.14	−44.53	−44.56	19 18 58.66	+ 0.02
	17	κ Aquilæ	S.	8.6	31.0	32.8	38.6	40.8	42.8	48.8	50.4	53.0	30 40.76	− 0.12	−44.66	−44.56	19 29 56.08	+ 0.14
	18	γ Aquilæ	S.	39.3	41.7	43.3	49.5	51.6	53.7	59.9	1.5	4.0	40 51.61	− 0.16	−44.58	−44.57	19 40 6.88	+ 0.04
	19	α Aquilæ	S.	0.8	3.4	5.2	11.2	13.2	15.2	21.4	23.1	25.7	45 13.24	− 0.16	−44.51	−44.57	19 44 28.53	− 0.02
	20	λ Ursæ Minoris	S.	. .	. .	17.0	6.0	55.0	45.0	33.0	. .	. .	55 56.26	− 4.75	. .	−44.57	19 55 6.94	− 1.32
	21	κ Cephei	S.	8.0	20.0	27.0	54.2	3.4	13.1	40.9	46.9	59.5	14 3.67	− 0.56	. .	−44.58	20 13 18.53	− 0.14
	22	π Capricorni	S.	26.9	29.5	31.0	37.6	39.7	42.0	48.4	49.8	52.7	20 39.73	− 0.09	−44.59	−44.58	20 19 55.06	+ 0.04
	23	ε Delphini	S.	34.7	37.2	39.0	45.0	47.0	49.1	55.3	56.9	59.5	27 47.08	− 0.16	−44.59	−44.58	20 27 2.34	+ 0.06
	24	I Pegasi	S.	38.5	41.2	43.0	49.3	51.5	53.6	0.0	1.8	4.5	16 51.49	− 0.18	−44.55	−44.59	21 16 6.82	+ 0.01
	25	β Aquarii	S.	17.7	20.1	21.7	27.8	29.9	32.0	38.0	39.5	42.1	25 29.87	− 0.12	−44.63	−44.59	21 24 45.16	+ 0.07
	26	ξ Aquarii	S.	24.5	26.9	28.7	34.9	36.8	38.8	44.9	46.7	49.1	31 36.81	− 0.11	−44.63	−44.59	21 30 52.11	+ 0.06
	27	ε Pegasi	S.	22.6	25.2	26.9	33.0	35.1	37.0	43.3	44.8	47.4	38 35.03	− 0.16	−44.54	−44.59	21 37 50.28	− 0.04
	28	α Aquarii	S.	41.1	43.8	45.1	49.2	51.2	53.2	55.4	. .	. .	59 53.31	− 0.13	−44.58	−44.59	21 59 8.59	+ 0.02
	29	θ Aquarii	S.	33.0	35.5	37.1	43.1	45.1	47.2	53.5	55.1	57.6	10 45.24	− 0.11	−44.55	−44.60	22 10 0.53	− 0.03
	30	π Aquarii	S.	. .	. .	21.3	23.2	25.2	27.2	29.3	. .	. .	19 25.25	− 0.14	−44.66	−44.60	22 18 40.51	+ 0.08
	31	η Aquarii	S.	15.3	17.7	19.4	25.4	27.4	29.5	35.5	37.2	39.6	29 27.44	− 0.13	−44.58	−44.60	22 28 42.71	+ 0.01
	32	α Pegasi	S.	51.5	54.1	55.7	1.9	3.9	6.0	12.6	14.1	16.6	59 4.04	− 0.07	−44.60	−44.61	22 58 19.36	+ 0.02
	33	Moon II	S.	10.4	12.0	16.3	18.2	20.5	22.3	24.5	28.8	30.3	5 20.37	− 0.11	. .	−44.61	23 4 35.65	−64.14
15	34	44 Ophiuchi	Ha.	0.2	3.0	4.7	11.2	13.6	15.8	22.5	24.0	26.9	19 13.54	− 0.37	−45.31	−45.35	17 18 27.82	+ 0.02
	35	Saturn I, N.	Ha.	2.2	5.0	6.7	. .	. .	. .	24.1	25.8	28.6	26 15.39	− 0.37	. .	−45.36	17 25 29.66	. .
	36	Saturn II	Ha.	. .	. .	12.2	14.3	16.7	18.8	21.0	. .	. .	26 16.61	− 0.37	. .	−45.36	17 25 30.98	. .
	37	α Ophiuchi	E.	29.0	31.7	33.2	39.3	41.4	43.5	49.8	51.4	53.9	29 41.47	− 0.35	−45.50	−45.44	17 28 55.68	+ 0.09
	38	μ Herculis	Ha.	55.7	58.5	0.4	7.3	9.5	11.9	18.7	20.4	23.3	42 9.52	− 0.35	−45.32	−45.44	17 41 23.73	− 0.12
	39	γ Draconis	E.	3.2	7.3	9.8	19.4	22.8	26.0	36.0	38.3	42.5	54 22.81	− 0.34	. .	−45.44	17 53 37.03	− 0.08
	40	γ^2 Sagittarii	E.	1.3	4.2	6.0	13.0	15.4	17.8	25.0	26.7	29.6	58 15.44	− 0.37	−45.42	−45.44	17 57 29.63	+ 0.01
	41	μ^1 Sagittarii	Ha.	34.1	36.8	38.4	45.0	47.2	49.4	55.9	57.6	0.3	6 47.19	− 0.37	−45.41	−45.36	18 6 1.46	+ 0.09
	42	δ Ursæ Minoris	Ha.	45.0	27.0	53.5	. .	. .	. .	29.5	55.0	37.0	15 11.12	− 0.08	. .	−45.37	18 14 25.67	+ 0.34
	43	δ Ursæ Minoris	E.	. .	. .	1.0	36.0	11.0	45.0	19.5	. .	. .	15 10.70	− 0.08	. .	−45.44	18 14 25.18	− 0.15
	44	I Aquilæ	Ha.	43.3	45.8	47.4	53.6	55.8	57.9	3.9	5.5	8.0	28 55.69	− 0.36	−45.38	−45.37	18 28 9.96	+ 0.08
	45	α Lyræ	E.	4.3	7.5	9.5	17.2	19.9	22.5	30.2	32.3	35.5	33 19.88	− 0.35	−45.41	−45.45	18 32 34.06	− 0.04
	46	51 Cephei, S. P.	E.	32.5	39.5	7.0	. .	. .	. .	29.5	57.5	. .	39 18.54	− 0.72	. .	−45.45	6 38 32.37	+ 0.71
	47	51 Cephei, S. P.	Ha.	. .	. .	42.5	1.5	19.0	35.5	53.0	. .	. .	39 18.08	− 0.72	. .	−45.37	6 38 31.99	+ 0.33
	48	β Lyræ	Ha.	49.9	52.9	54.8	1.9	4.5	7.0	14.2	16.0	19.2	46 4.49	− 0.35	−45.38	−45.37	18 45 18.77	+ 0.04
	49	ζ Aquilæ	E.	1.3	3.9	5.6	11.8	13.9	16.0	22.3	23.9	26.4	0 13.90	− 0.36	−45.48	−45.45	18 59 28.09	+ 0.11
	50	d Sagittarii	E.	36.9	39.5	41.2	47.5	49.7	51.9	58.4	0.0	2.7	10 49.76	− 0.37	−45.49	−45.45	19 10 3.94	+ 0.06
	51	δ Aquilæ	Ha.	32.1	34.7	36.3	42.4	44.4	46.5	52.5	54.1	56.7	19 44.41	− 0.36	−45.37	−45.38	19 18 58.67	+ 0.04
	52	κ Aquilæ	E.	29.6	32.0	33.7	39.8	41.8	43.9	50.0	51.6	54.1	30 41.83	− 0.36	−45.50	−45.46	19 29 56.01	+ 0.08
	53	γ Aquilæ	Ha.	40.0	42.7	44.3	50.5	52.5	54.6	0.9	3.3	5.0	40 52.33	− 0.36	−45.31	−45.38	19 40 6.79	− 0.04
	54	α Aquilæ	Ha.	2.0	4.6	6.2	12.3	14.4	16.5	22.5	24.1	26.7	45 14.37	− 0.36	−45.45	−45.46	19 44 28.55	+ 0.03

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent North Polar Distance.	Miscellan'us Corrections.
		I.	II.	III.	IV.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	357 56	12.0	12.2	22.8	22.6	29	. .	. .	. .	806	. .	67.3	357 59 9.0	. .	— 1.9	49 5 28.3	— 0.3
2	47 42	12.4	15.3	25.3	25.4	23	. .	530	. .	476	. .	67.3	47 46 43.8	. .	+ 59.5	98 54 4.5	+ 1.6
3	24 16	10 20.1	20.0	0.0	29.4	23	. .	755	. .	710	. .	67.3	24 20 35.2	. .	+ 24.9	75 27 21.3	— 0.5
4	62 50	18.5	19.1	29.8	29.6	22	. .	140	. .	060	. .	67.3	62 55 0.5	. .	+ 1 47.1	114 3 8.8	+ 0.8
5	293 48	14.6	15.8	25.4	26.6	24	. .	. .	225	. .	. .	67.3	293 52 31.8	. .	— 2 3.6	344 56 49.4	— 0.2
6	26 10	23.2	23.9	2.8	1.5	27	. .	570	. .	510	. .	67.3	26 13 34.0	. .	+ 27.1	77 20 22.3	— 1.3
7	330 2	17.2	17.0	27.5	26.4	31	250	185	. .	. .	. .	67.3	330 4 45.9	. .	— 31.7	21 10 35.4	— 3.4
8	11 2	19.0	19.6	0.7	29.0	28	. .	895	. .	805	. .	67.3	11 5 17.4	. .	+ 10.8	62 11 49.4	— 0.9
9	347 20	18.5	19.0	28.7	28.4	29	305	220	. .	. .	. .	67.3	347 23 13.5	. .	— 12.3	38 29 22.4	— 1.4
10	69 12	19.2	19.1	29.9	0.2	23	. .	705	. .	730	. .	67.3	69 16 35.4	. .	+ 2 24.5	120 25 21.1	0.0
11	59 52	19.5	19.5	0.5	0.0	20	. .	495	. .	530	. .	67.3	59 57 24.2	. .	+ 1 35.1	111 5 20.5	+ 0.3
12	312 14	19.0	19.0	29.4	29.0	26	. .	085	090	072	. .	67.3	312 17 59.9	. .	— 1 0.6	3 23 20.5	— 1.4
13	47 8	18.5	19.2	29.1	29.0	24	. .	420	. .	385	. .	67.3	47 12 25.7	. .	+ 59.7	98 19 46.6	— 1.9
14	0 10	21.0	21.0	0.5	29.5	27	. .	975	. .	855	. .	67.3	0 13 30.8	. .	+ 0.2	51 19 52.2	— 0.6
15	306 4	15.8	14.5	23.8	25.3	22	. .	400	340	. .	. .	67.3	306 9 0.9	. .	— 1 15.6	357 14 6.5	— 0.3
16	35 58	17.5	16.1	26.5	25.4	29	. .	035	960	. .	. .	67.5	36 1 18.2	. .	+ 40.3	87 8 19.7	— 0.4
17	46 8	18.6	19.0	29.4	28.6	28	. .	580	480	. .	. .	67.5	46 11 22.8	. .	+ 57.7	97 18 41.7	+ 2.0
18	28 30	18.8	17.9	28.2	26.6	22	. .	. .	. .	115	. .	67.5	28 35 0.8	. .	+ 30.2	79 41 52.2	— 0.8
19																	
20	309 56	16.2	16.8	27.2	27.6	28	350	320	300	330	310	67.5	309 59 28.2	. .	— 1 16.1	1 4 43.3	— 1.1
21	321 32	15.9	16.1	26.0	26.4	30	. .	065	. .	040	. .	67.5	321 35 2.7	. .	— 44.0	12 40 39.9	— 2.3
22	57 26	15.3	15.1	25.3	25.5	25	. .	. .	. .	620	535	67.5	57 30 10.3	. .	+ 1 27.0	108 37 58.5	+ 1.0
23	27 58	17.5	17.1	27.5	26.1	29	. .	. .	. .	495	510	67.5	28 1 8.8	. .	+ 29.6	79 7 59.6	— 0.2
24	19 34	20.7	20.1	29.9	28.9	25	625	585	. .	540	535	67.5	19 38 7.3	. .	+ 19.8	70 44 48.3	+ 0.4
25	44 56	16.6	16.0	27.0	26.5	22	335	305	. .	340	265	67.5	45 1 0.3	. .	+ 55.5	96 8 17.0	+ 0.9
26	47 14	16.8	17.2	27.3	27.2	24	. .	000	. .	945	. .	67.5	47 18 34.3	. .	+ 1 0.1	98 25 55.6	+ 0.4
27	29 32	18.7	18.4	28.5	27.6	25	. .	850	. .	750	. .	67.5	29 36 5.3	. .	+ 31.5	80 42 58.0	— 0.2
28																	
29	47 14	17.5	18.2	28.3	27.9	25	430	415	. .	420	365	67.5	47 18 11.5	. .	+ 1 0.0	98 25 32.7	+ 0.3
30																	
31	39 36	17.7	18.0	29.0	27.0	26	745	785	. .	705	700	67.5	39 39 51.3	. .	+ 45.9	90 46 58.4	— 0.3
32	24 18	17.5	16.5	25.5	26.3	23	. .	680	. .	695	. .	67.5	24 22 39.5	. .	+ 25.1	75 29 25.8	0.0
33																	
34	62 50	11.4	12.0	24.5	25.0	22	. .	500	. .	350	. .	67.5	62 55 1.8	. .	+ 1 49.5	114 3 12.5	+ 4.4
35	60 52	11.3	11.1	23.8	25.3	23	245	. .	195	. .	. .	67.5	60 56 50.0	. .	+ 1 41.0	112 4 52.2	
36																	
37	26 10	11.8	12.1	24.0	23.3	28	. .	. .	. .	112	066	67.5	26 13 34.7	. .	+ 27.7	77 20 23.6	+ 0.2
38	11 2	12.8	12.9	25.6	25.0	29	. .	160	. .	080	. .	67.5	11 5 18.9	. .	+ 11.0	62 11 51.1	+ 1.2
39	347 20	12.4	12.0	24.1	24.6	29	. .	410	. .	385	. .	67.5	347 23 15.6	. .	— 12.6	38 29 24.2	+ 0.9
40	69 12	13.1	12.8	24.5	26.2	24	. .	168	. .	150	. .	67.5	69 16 34.3	. .	+ 2 27.8	120 25 23.3	+ 2.1
41	59 52	13.0	12.0	24.2	26.0	21	. .	038	. .	010	. .	67.5	59 57 22.6	. .	+ 1 37.2	111 5 21.0	+ 0.8
42																	
43	312 14	9.4	9.6	22.1	22.2	26	435	. .	360	. .	430	67.5	312 18 3.6	. .	— 1 2.0	3 23 22.8	+ 1.5
44	47 8	10.5	10.4	22.5	23.1	24	. .	880	. .	780	. .	67.5	47 12 26.7	. .	+ 1 1.0	98 19 48.9	+ 0.4
45	0 10	13.7	14.0	25.3	25.5	28	. .	265	. .	190	. .	67.5	0 13 32.1	. .	+ 0.2	51 19 53.5	+ 1.3
46																	
47	306 4	9.2	9.5	21.5	23.2	22	408	. .	490	. .	445	67.5	306 9 3.1	. .	- 1 17.2	357 14 7.9	+ 1.7
48	5 36	10.4	10.2	22.5	21.9	24	. .	672	. .	640	. .	67.5	5 40 30.0	. .	+ 5.6	56 46 56.8	+ 0.8
49	25 8	10.4	10.9	21.5	22.7	23	. .	980	. .	941	. .	67.5	25 12 40.4	. .	+ 26.7	76 19 28.3	+ 2.1
50	57 58	6.5	8.0	20.0	20.8	22	. .	995	. .	990	. .	67.5	58 2 57.6	. .	+ 1 30.5	109 10 49.3	+ 5.3
51	35 58	11.4	11.4	23.1	23.4	29	. .	260	. .	220	. .	67.5	36 1 18.6	. .	+ 41.2	87 8 21.0	+ 1.2
52	46 8	10.7	12.0	23.7	24.8	28	. .	010	. .	970	. .	67.5	46 11 21.9	. .	+ 59.0	97 18 42.1	+ 2.5
53	28 30	13.2	13.0	24.6	24.5	22	. .	362	. .	380	. .	67.5	28 35 2.2	. .	+ 30.9	79 41 54.3	+ 1.7
54	30 18	11.5	12.5	23.8	24.2	29	. .	340	. .	279	. .	67.5	30 21 16.9	. .	+ 33.2	81 28 11.3	+ 1.6

No.	Barom.	At. Ther.	Ex. Ther.
	in.	°	°
1	30.116	83.0	90.8
3	30.112	81.1	82.0
10	. .	. .	79.8
14	. .	80.5	78.0
16	. .	. .	77.0
17	30.126	79.7	
22	. .	. .	76.0
27	30.110	79.6	76.3
29	. .	. .	76.3
31	30.100	88.5	76.3
34	30.044	72.5	68.4
43	. .	. .	66.0
48	. .	. .	65.1
51	. .	. .	64.4
54	30.040	71.5	63.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
35	— 0.8	+ 8.2	. .	+ 7.4

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT.

1870.

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Jan. 5	Polaris	†1	. .	. .	. .	. .	. .	. .	17.0	59.0	50.0	42.0	37.0	34 41.20	−23 9.12	−4.89	. . . .	− 10.89
Y.	β Arietis	2	16.4	18.5	19.7	29.5	30.7	31.9	33.4	34.6	44.7	46.0	47.8	47 32.11	0.00	4.88	1 47 27.23	+ 0.48
	B. A. C. 1163 . .	3	41.3	43.3	44.6	54.9	55.9	57.3	58.7	59.9	10.3	11.5	13.3	38 57.36	+ 0.02	4.87	3 38 52.51	− 0.11
	Radcliffe 1084. .	4	6.0	8.5	10.0	22.3	23.9	25.4	27.0	28.6	41.2	42 9	45.0	43 25.53	+ 0.11	4.87	3 43 20.77	0.32
	γ Eridani. . . .	5	47.8	49.8	51.0	0.6	1.8	3.0	4.2	5.4	15.3	16.4	18.3	52 3.05	− 0.16	4.87	3 51 58.02	0.15
	O. Arg. S. 2848 .	6	21.5	23.5	25.0	35.5	36.6	37.8	39.2	40.4	51.0	52.3	54.4	3 37.93	0.23	4.87	4 3 32.83	0.25
	Lacaille 1370 . .	7	20.1	22.1	23.4	33.8	35.0	36.4	37.7	39.0	49.6	50.9	52.9	4 36.45	0.23	4.87	4 4 31.35	0.25
	*+16° 39′ . . .	8	1.3	3.2	4.4	14.2	15.3	16.6	17.9	19.0	29.0	30.3	32.0	10 16.65	0.02	4.87	4 10 11.76	0.21
	Weisse (2) 270. .	9	49.6	51.6	52.8	2.6	3.8	5.0	6.4	7.6	17.5	18.8	20.8	14 5.14	0.01	4.87	4 14 0.26	0.23
	Lacaille 1449 . .	10	25.3	27.7	29.0	40.7	42.0	43.4	44.9	46.5	57.2	59.6	1.8	20 43.46	0.31	4.87	4 20 38.28	0.46
	Weisse (2) 535. .	11	36.0	38.0	39.3	49.1	50.4	51.7	52.9	54.1	4.2	5.7	7.4	25 51.71	0.00	4.87	4 25 46.84	0.28
	Weisse 722. . .	12	54.6	56.7	57.7	7.5	8.6	9.8	11.2	12.3	22.3	23.4	25.2	34 9.94	− 0.02	4.87	4 34 5.05	0.28
	*+10° 45′ . . .	†13	. .	. .	. .	33.9	35.3	36.4	37.4	38.7	. .	. .	. .	42 36.34	+ 0.02	4.87	4 42 31.49	0.30
	Weisse 926. . .	14	27.3	28.4	29.7	30.9	33.3	. .	34.2	36.9	38.0	39.4	40.8	44 3.89	− 0.30	4.87	4 43 58.72	0.30
	*+10° 48′ . . .	15	50.5	52.3	53.6	3.0	4.2	5.4	6.7	7.8	17.6	18.7	20.5	44 5.48	0.04	4.87	4 44 0.57	0.30
	Lalande 9291 . .	16	56.6	58.4	59.5	8.9	10.0	11.2	12.5	13.6	23.2	24.5	26.0	50 11.31	0.08	4.87	4 50 6.36	0.30
	*−31° 34′ . . .	17	48.2	49.3	50.9	52.3	54.8	. .	5.4	8.2	9.6	11.1	12.5	56 30.23	0.57	4.87	4 56 24.79	0.54
	*−31° 33′ . . .	18	59.5	0.8	2.3	3.8	6.3	. .	16.8	19.7	21.1	22.3	24.0	56 41.66	− 0.57	4.87	4 56 36.22	0.54
	B. A. C. 1582 . .	19	46.4	48.9	50.6	4.3	5.8	7.6	9.4	10.3	25.2	26.9	29.4	1 7.71	+ 0.16	4.87	5 1 3.00	0.60
	*+4° 15′ . . .	20	33.3	35.4	36.6	46.1	47.2	48.3	49.5	50.7	0.2	1.5	3.0	3 48.35	− 0.07	4.87	5 3 43.41	0.33
	12 Aurigæ. . . .	21	33.7	36.3	38.0	51.6	53.3	54.9	56.7	58.4	12.2	14.0	16.3	6 55.04	+ 0.15	4.87	5 6 50.32	0.60
	Weisse (2) 296. .	22	32.3	34.4	35.6	46.0	47.3	48.6	50.1	51.4	2.0	3.3	5.2	11 48.75	+ 0.03	4.87	5 11 43.91	0.36
	δ Orionis . . .	23	12.7	14.5	15.6	25.1	26.1	27.3	28.6	29.8	39.2	40.5	42.1	25 27.41	− 0.09	4.87	5 25 22.45	0.40
	*+20° 19′ . . .	24	11.4	13.4	14.5	. .	. .	27.0	28.2	29.4	39.6	41.0	42.7	45 27.47	0.40	4.86	5 45 22.21	0.40
	*+ 7° 20′ . . .	25	41.7	43.6	44.8	54.4	55.4	56.6	57.9	58.8	8.5	9.6	11.4	50 56.61	0.06	4.86	5 50 51.69	0.43
	Weisse 1368, (1st *)	26	. .	. .	. .	9.9	11.0	12.3	13.5	14.7	. .	. .	. .	54 12.28	0.10	4.86	5 54 7.32	0.58
	Weisse 1368, (2d *)	27	57.6	59.5	0.8	. .	. .	. .	. .	. .	25.0	26.1	27.9	54 12.82	0.21	4.86	5 54 7.75	0.58
	Lacaille 2124 . .	28	18.8	21.0	22.3	33.5	34.6	36.1	37.5	38.9	50.2	51.7	53.8	59 36.22	0.28	4.86	5 59 31.08	0.93
	Lacaille 2226 . .	29	6.2	8.2	9.7	20.6	21.7	23.2	24.6	25.8	37.0	38.3	40.0	15 23.21	0.26	4.86	6 15 18.09	0.90
	*−29° 33′ . . .	30	42.5	43.8	45.4	46.9	49.5	. .	58.3	1.3	2.8	4.0	5.4	15 23.99	0.55	4.86	6 15 18.58	− 0.90
	δ Ursæ Minoris . .	31	. .	. .	. .	. .	. .	. .	31.0	8.0	28.0	50.0	11.0	23 25.60	− 9 21.72	4.86	. . . .	+ 16.90
	B. A. C. 2139 . .	32	22.8	25.3	26.7	38.8	40.4	41.9	43.5	44.9	57.2	58.6	0.7	27 41.89	+ 0.10	4.86	6 27 37.13	− 0.55
	*−24° 0′ . . .	33	7.0	8.2	9.6	11.1	13.3	. .	19.3	21.7	23.1	24.4	25.8	30 46.35	− 0.50	4.86	6 30 40.99	0.81
	O. Arg. S. 2343 .	34	32.0	34.0	35.3	45.5	46.6	47.9	49.3	50.6	1.0	2.4	4.2	30 48.07	− 0.22	4.86	6 30 42.99	0.81
	Lalande 12798. .	35	10.7	13.0	14.5	26.4	27.8	29.4	30.7	32.2	44.3	45.8	47.9	34 29.34	+ 0.09	4.86	6 34 24.57	0.54
	*+38° 42′ . . .	36	45.3	46.6	48.5	50.0	52.7	. .	9.6	13.0	14.5	15.9	17.4	38 31.35	− 0.23	4.86	6 38 26.26	0.55
	*+38° 41′ . . .	37	14.4	16.8	18.3	30.4	31.7	33.2	34.9	36.4	48.8	50.2	52.2	38 33.39	+ 0.10	4.86	6 38 28.63	0.55
	O. Arg. N. 7298 .	38	. .	. .	. .	35.3	37.3	39.2	40.9	43.0	. .	. .	. .	42 39.14	0.28	4.86	6 42 34.56	0.80
	O. Arg. N. 7299 .	39	. .	. .	. .	13.4	15.3	16.8	19.0	21.0	. .	. .	. .	43 17.10	0.28	4.86	6 43 12.52	0.81
	*+51° 47′ . . .	40	57.9	0.9	2.7	. .	. .	. .	. .	. .	41.2	43.1	45.6	43 21.90	+ 0.11	4.86	6 43 17.15	0.81
	Lacaille 2496 . .	41	50.0	52.0	53.1	3.7	4.8	6.0	7.5	8.8	19.1	20.5	22.3	48 6.16	− 0.22	4.86	6 48 1.08	0.84
	*−23° 42′ . . .	42	28.8	30.7	32.0	42.3	43.4	44.8	46.0	47.3	57.8	59.1	1.0	54 44.84	− 0.22	4.86	6 54 39.76	0.83
	Weisse (2) 1749 .	43	47.3	49.0	50.4	0.8	2.0	3.4	4.6	5.9	. .	. .	. .	57 57.92	+ 5.41	4.86	6 57 58.47	0.44
	*−31° 12′ . . .	44	25.5	26.9	28.4	29.9	32.5	. .	42.8	45.5	46.9	48.3	49.7	3 17.64	− 0.57	4.86	7 3 2.21	1.00
	Lacaille 2637 . .	45	36.8	38.0	39.7	41.3	43.7	. .	53.6	56.6	58.2	59.5	1.0	3 18.84	0.57	4.86	7 3 13.41	1.00
	O. Arg. S. 6364 .	46	46.0	48.5	50.0	26.1	27.3	29.0	46.0	48.6	50.0	51.3	52.7	6 26.86	16.91	4.86	7 6 5.09	0.83
	*−23° 31′ . . .	47	55.3	57.3	58.6	8.8	10.0	11.2	12.6	13.8	24.4	25.7	27.7	10 11.40	0.21	4.86	7 10 6.33	0.83
	Lacaille 2684 . .	48	. .	. .	. .	38.9	40.3	41.9	58.8	1.6	2.9	4.1	5.5	10 54.25	28.51	4.86	7 10 20.88	0.83
	δ Geminorum . .	49	. .	. .	. .	39.8	41.0	42.6	59.4	1.9	3.3	4.5	6.1	12 54.82	− 28.02	−4.86	7 12 21.94	− 0.43

1. Unsteady.
13. Very faint.

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	*n*	*c*
1870.	h.	s.	s.	s.	s.
Jan. 5	4.6	− 4.87	+ 0.005	+ 0.27	− 0.09

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Jan. 7	ο Persei	1	37.7	40.0	41.4	2.6	3.9	5.3	6.9	8.2	29.7	31.1	33.3	34 5.46	+ 0.10	− 6.98	3 33 58.58	− 0.10
Y.	Lalande 7069	2	35.6	37.4	38.5	48.0	49.0	50.3	51.5	52.8	2.5	3.6	5.4	42 50.42	− 0.05	6.98	3 42 43.39	0.03
	ζ Persei	3	47.6	49.9	51.2	2.0	3.5	4.8	6.3	7.6	18.7	20.2	22.2	46 4.91	+ 0.09	6.97	3 45 58.03	0.13
	γ Eridani	4	49.9	51.9	53.2	2.7	4.0	5.3	6.4	7.7	17.5	18.7	20.4	52 5.25	− 0.19	6.97	3 51 58.09	0.14
	Weisse (2) 436	5	8.9	11.0	12.2	22.6	24.0	25.3	26.6	28.0	38.7	40.2	42.0	21 25.41	+ 0.06	6.97	4 21 18.50	0.23
	*+15° 41′	6	35.3	36.6	38.0	39.2	41.4	. .	43.8	46.6	47.9	49.1	50.3	42 12.82	− 0.28	6.97	4 42 5.57	0.28
	96 Tauri	7	48.0	49.1	50.6	52.0	54.4	. .	56.3	58.9	0.2	1.5	2.9	42 25.39	0.28	6.97	4 42 18.14	0.28
	ω Eridani	8	22.9	24.8	26.0	35.4	36.6	37.7	38.9	40.0	49.8	51.0	52.7	46 37.80	0.13	6.97	4 46 30.70	0.32
	B. A. C. 1559	9	43.8	45.7	47.0	57.8	58.8	0.2	1.6	2.8	13.5	14.8	16.7	57 0.25	− 0.27	6.97	4 56 53.01	0.56
	μ Aurigæ	10	20.3	22.9	24.1	36.3	37.7	39.2	40.9	42.4	54.6	56.2	58.2	4 39.35	+ 0.14	6.97	5 4 32.52	0.46
	δ Orionis	11	14.7	16.5	17.5	26.9	28.0	29.3	30.6	31.8	41.2	42.5	44.0	25 29.36	− 0.10	6.97	5 25 22.29	0.40
	α Orionis	12	0.4	2.5	3.7	13.0	14.2	15.4	16.7	17.9	27.4	28.7	30.5	48 15.49	0.06	6.96	5 48 8.47	− 0.41
10	α Ceti	13	25.0	27.0	28.1	37.5	38.6	39.8	41.1	42.3	52.0	53.0	54.8	55 39.93	0.08	10.94	2 55 28.91	+ 0.23
	*+11° 16′	14	37.2	39.0	40.2	49.7	50.9	52.1	53.4	54.5	4.3	5.4	7.1	39 52.16	− 0.03	10.95	3 39 41.18	0.00
	*+23° 48′ ±	15	36.5	38.6	39.8	50.0	51.1	52.5	53.7	55.0	5.5	6.9	8.7	41 52.57	+ 0.05	10.95	3 41 41.67	− 0.03
	*+23° 48′ ±	16	. .	. .	. .	. .	. .	. .	45.6	48.3	49.6	51.2	52.5	42 49.44	− 36.65	10.96	3 42 1.83	0.03
	*+23° 48′ ±	17	. .	. .	. .	18.7	20.0	21.4	22.7	23.8	. .	. .	. .	42 21.32	+ 0.11	10.96	3 42 10.47	0.04
	Weisse (2) 972	18	20.9	23.6	24.8	36.7	38.3	39.7	41.5	43.0	54.9	56.6	58.5	45 39.86	+ 0.18	10.96	3 45 29.08	0.48
	*+38° 9′	19	55.5	56.9	58.4	0.1	2.8	. .	19.3	22.4	23.6	25.1	27.0	45 41.11	− 0.15	10.96	3 45 30.00	0.48
	Lacaille 1370	20	26.1	28.0	29.3	39.7	40.9	42.3	43.7	45.0	55.5	56.8	58.7	4 42.36	− 0.29	10.96	4 4 31.11	0.28
	Weisse 160	21	37.5	39.5	40.7	50.6	51.8	53.1	54.4	55.6	5.7	6.9	8.9	9 53.15	+ 0.03	10.97	4 9 42.21	0.14
	Weisse 166	22	23.1	24.4	25.7	26.8	29.0	. .	33.3	35.9	37.2	38.5	39.8	10 1.37	− 0.24	10.97	4 9 50.16	0.14
	*−27° 1′	23	27.4	29.3	30.6	41.2	42.5	43.8	45.2	46.5	57.2	58.5	0.2	13 43.85	− 0.31	10.97	4 13 32.57	0.36
	Weisse (2) 535	24	42.0	43.9	45.1	55.2	56.3	57.6	58.7	59.9	10.3	11.5	13.5	25 57.64	+ 0.03	10.97	4 25 46.70	0.19
	O. Arg. S. 3325	25	37.1	39.2	40.4	50.8	51.9	53.2	54.6	55.8	6.3	7.8	9.6	37 53.34	− 0.28	10.97	4 37 42.09	0.44
	Weisse (2) 886	26	35.5	37.5	38.7	49.0	50.2	51.6	53.0	54.3	4.7	5.9	7.8	40 51.65	+ 0.06	10.98	4 40 40.73	0.26
	Weisse 986	27	6.5	8.5	9.6	19.1	20.2	21.4	22.7	23.8	33.5	34.7	36.4	46 21.49	− 0.05	10.98	4 46 10.46	0.25
	*−25° 48′	28	0.6	2.6	3.7	14.0	15.4	16.5	17.9	19.1	29.7	30.9	33.2	51 16.69	− 0.29	10.98	4 51 5.42	0.52
	Weisse (2) 1266	29	9.1	10.2	11.8	13.1	15.4	31.8	33.5	35.0	. .	. .	. .	56 19.99	+ 27.53	10.98	4 56 36.54	0.30
	O. Arg. S. 3670	30	19.0	21.2	22.8	33.1	34.5	35.8	37.5	38.8	48.8	50.0	51.5	1 35.73	− 0.32	10.98	5 1 24.43	0.62
	O. Arg. S. 3680	31	. .	. .	. .	16.9	18.4	20.6	37.7	40.7	42.0	43.4	45.1	2 33.10	29.85	10.98	5 1 52.27	0.62
	*+30° 15′	32	. .	. .	. .	52.2	53.5	54.8	56.1	57.3	8.8	10.0	11.8	5 0.56	− 5.63	10.98	5 4 43.95	0.35
	β Tauri	†33	59.0	1.0	2.4	13.2	14.3	15.7	17.1	18.4	29.4	30.7	32.6	18 15.80	+ 0.09	10.99	5 18 4.90	0.39
	*−26° 36′	34	14.6	16.7	17.9	28.4	29.5	30.9	32.2	33.5	44.2	45.4	47.3	23 30.96	− 0.30	10.99	5 23 19.67	0.68
	*− 5° 40′	35	21.2	23.0	24.1	33.6	34.6	35.9	37.0	38.2	48.0	49.2	50.8	28 35.97	0.14	10.99	5 28 24.84	0.44
	*−5° 43′	36	. .	. .	. .	40.8	42.0	43.2	44.6	45.5	55.2	56.4	57.8	29 48.19	5.13	10.99	5 29 32.07	0.45
	*−5° 43′	37	. .	. .	. .	. .	. .	. .	13.4	16.0	17.2	18.4	19.8	30 16.96	33.89	10.99	5 29 32.08	0.45
	O. Arg. S. 4142	38	. .	. .	. .	40.8	42.1	43.4	45.0	46.4	. .	. .	. .	32 43.54	0.28	10.99	5 32 32.27	0.81
	O. Arg. S. 4148	39	30.7	32.8	34.2	. .	. .	. .	. .	. .	1.8	3.4	5.1	32 48.00	− 0.41	10.99	5 32 36.60	0.81
	*+20° 18′	40	17.3	19.3	20.7	30.6	31.8	33.0	34.3	35.5	45.9	47.0	48.7	45 33.10	+ 0.03	11.00	5 45 22.13	0.41
	*+7° 23′	41	52.2	53.7	55.3	. .	. .	. .	. .	. .	18.9	20.1	21.9	49 7.02	− 0.10	11.00	5 48 55.92	0.42
	*+7° 26′	42	35.6	36.7	38.3	. .	. .	. .	53.9	56.4	57.7	59.0	0.3	49 49.74	26.22	11.00	5 49 12.52	0.42
	*+7° 21′	43	47.5	49.4	50.8	0.2	1.3	2.5	3.7	4.9	14.5	15.7	17.4	51 2.54	− 0.05	11.00	5 50 51.49	0.43
	Rumker 1680	44	41.5	43.6	45.0	55.4	56.8	58.2	59.6	0.8	11.4	12.6	14.4	55 58.12	+ 0.06	11.00	5 55 47.18	0.45
	Weisse (2) 1980	45	52.6	54.6	56.0	6.4	7.6	8.9	10.2	11.5	22.3	23.7	25.5	0 9.03	0.06	11.00	5 59 58.09	0.46
	Weisse (2) 136	46	43.6	45.9	47.2	58.3	59.6	0.9	2.5	3.9	15.1	16.5	18.3	7 1.07	+ 0.12	11.00	6 6 50.19	− 0.50
	δ Ursæ Minoris, S.P.	47	7.0	35.0	54.5	. .	. .	. .	. .	. .	34.0	54.0	24.5	14 14.83	− 3.98	11.01	. . . .	+ 16.52
	μ Geminorum	48	1.1	3.1	4.4	14.6	15.9	17.1	18.5	19.7	30.0	31.4	33.2	15 17.18	+ 0.05	11.01	6 15 6.22	− 0.47
	Lacaille 2420	49	38.4	40.7	42.0	52.8	53.9	55.2	56.7	58.0	8.8	10.1	11.9	38 55.32	− 0.31	11.01	6 38 44.00	0.91
	O. Arg. S. 5725	50	25.6	27.8	29.2	39.8	41.0	42.3	43.7	45.0	56.0	57.4	59.5	43 42.48	0.32	11.02	6 43 31.14	0.94
	Lacaille 2494	51	11.6	13.8	15.1	26.5	27.7	29.2	30.6	32.1	43.7	45.0	47.1	47 29.31	− 0.38	− 11.02	6 47 17.91	− 1.09

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Jan. 7, 4.7	− 6.97	+ 0.005	+ 0.34	− 0.10
10, 5.4	− 10.99	− 0.020	+ 0.38	− 0.10

33. Unsteady.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Jan. 10 Y.	*−26° 5′	†1	51.7	52.9	54.1	55.5	56.7	. .	27.6	28.8	31.5	33.2	34.7	54 12.67	− 18.96	−11.02	6 53 42.69	− 0.90
	Weisse (2) 1728	2	15.5	17.9	19.5	32.6	33.9	35.3	37.2	39.1	51.8	53.5	55.8	58 35.65	+ 0.23	11.02	6 58 24.86	0.43
	O. Arg. S. 6311	3	13.6	15.7	16.8	26.9	28.0	29.5	30.7	31.9	42.5	43.9	45.4	4 29.54	+ 0.27	11.02	7 4 18.25	0.86
	26 Canis Majoris.	4	48.8	50.7	52.0	2.5	3.9	5.1	6.6	7.7	18.3	19.4	21.6	7 5.15	− 0.27	11.02	7 6 53.86	0.91
	Lacaille 2394	5	30.6	32.8	34.0	45.0	46.2	47.5	48.9	50.5	1.5	2.9	4.9	9 47.71	− 0.34	11.02	7 9 36.35	1.02
	δ Geminorum	6	17.0	19.0	20.2	30.5	31.7	32.9	34.3	35.4	45.7	47.0	48.9	12 32.96	+ 0.04	11.03	7 12 21.97	0.49
	Weisse 461	7	. .	0.5	1.6	11.4	12.5	13.8	15.0	16.2	26.2	27.4	. .	16 13.85	− 0.20	11.03	7 16 2.62	0.66
	B. A. C. 2463	8	30.0	32.0	33.4	44.2	45.3	46.7	48.2	49.3	0.3	1.5	3.4	20 46.75	+ 0.09	11.03	7 20 35.81	0.50
	6 Canis Majoris.	9	29.8	31.9	33.0	42.6	43.7	44.9	46.2	47.5	57.3	58.4	0.2	22 45.05	− 0.03	11.03	7 22 33.99	0.49
	Weisse (2) 681.	10	. .	. .	. .	21.5	22.7	24.0	25.4	26.6	. .	. .	. .	24 24.04	+ 0.06	11.03	7 24 13.07	0.48
	Weisse (2) 682.	11	8.9	11.1	12.3	. .	. .	. .	. .	. .	36.7	37.9	39.8	24 24.45	− 0.05	11.03	7 24 13.37	0.48
	Weisse (2) 705.	12	. .	. .	. .	5.6	7.0	8.3	9.5	10.8	. .	. .	. .	25 8.24	+ 0.06	11.03	7 24 57.27	− 0.48
	γ Pegasi	13	28.4	30.1	31.4	41.1	42.2	43.4	44.7	45.9	55.9	57.0	58.8	6 43.54	− 0.01	12.12	. . . .	+ 1.21
18	13 Pleiadum	14	16.7	18.8	20.0	30.3	31.5	32.7	34.0	35.3	45.7	46.8	48.9	39 32.79	+ 0.05	11.79	3 39 21.05	0.06
	*+23° 41′ ±	15	. .	. .	. .	. .	. .	. .	. .	. .	57.5	58.9	0.7	39 59.03	− 14.40	11.79	3 39 32.84	0.06
	*+23° 41′ ±	16	. .	. .	. .	. .	. .	. .	20.4	23.1	24.4	25.8	27.0	40 24.14	36.61	11.79	3 39 35.74	0.06
	*+23° 41′ ±	17	. .	. .	. .	. .	. .	. .	. .	. .	2.1	3.5	5.2	40 3.60	14.40	11.79	3 39 37.41	0.05
	*+23° 41′ ±	18	. .	. .	. .	. .	. .	. .	30.3	32.9	34.3	35.6	36.9	40 34.00	− 36.61	11.79	3 39 45.60	0.06
	*+23° 41′ ±	19	. .	. .	. .	0.0	1.2	2.6	3.9	5.1	. .	. .	. .	41 2.56	+ 0.11	11.79	3 40 50.88	0.05
	*+23° 41′ ±	20	. .	. .	. .	35.3	36.4	37.6	38.9	40.3	. .	. .	. .	41 37.70	+ 0.11	11.79	3 41 26.02	0.05
	*+23° 41′ ±	21	22.8	24.8	26.0	. .	. .	. .	. .	. .	51.9	53.2	54.9	41 38.93	0.00	11.79	3 41 27.14	0.05
	*+23° 41′ ±	22	. .	. .	. .	6.4	7.6	9.5	26.3	29.1	30.4	31.7	33.1	42 21.76	− 28.29	11.79	3 41 41.68	0.05
	*+23° 58′ ±	23	. .	. .	. .	. .	. .	. .	56.5	59.3	0.6	2.0	3.3	43 0.34	36.69	11.79	3 42 11.86	+ 0.05
	γ^1 Eridani.	24	54.7	56.6	57.8	7.4	8.6	9.8	11.0	12.1	22.1	23.3	25.0	52 9.85	− 0.20	11.78	. . . .	− 0.02
	*+20° 55′	25	. .	. .	. .	39.6	40.7	42.0	43.3	44.4	. .	. .	. .	59 42.00	+ 0.09	11.78	3 59 30.31	0.02
	O. Arg. S. 2796	26	0.9	2.8	3.9	14.3	15.4	16.5	17.9	19.0	29.6	30.8	32.5	0 16.69	0.03	11.78	4 0 4.94	0.02
	*+44° 27′	27	52.8	55.2	56.8	10.3	11.5	13.4	15.0	16.5	29.8	31.5	33.9	5 13.34	0.24	11.78	4 5 1.80	0.23
	Rumker 1159	28	49.5	51.5	52.7	2.5	3.7	4.9	6.3	7.5	17.5	18.7	20.5	14 5.03	0.02	11.78	4 13 53.27	0.08
	ε Tauri	29	57.9	59.9	1.2	11.0	12.2	13.5	14.8	16.0	26.1	27.4	29.1	21 13.55	0.02	11.78	. . . .	− 0.11
21	Weisse (2) 896.	30	25.3	27.6	29.0	40.8	42.2	43.8	45.4	46.8	58.9	0.4	2.4	41 43.87	+ 0.17	12.76	3 41 31.28	+ 0.01
	γ^1 Eridani.	31	55.5	57.6	58.7	8.4	9.5	10.7	12.0	13.2	23.0	24.3	26.1	52 10.82	− 0.26	12.76	3 51 57.80	+ 0.01
	*+44° 25′	32	53.8	56.1	57.7	11.0	12.5	13.9	15.8	17.3	31.0	32.7	35.0	5 14.26	+ 0.25	12.77	4 5 1.74	− 0.20
	*+44° 22′	33	55.8	58.4	0.0	13.2	14.8	16.3	18.2	19.7	33.1	34.8	37.0	6 16.48	0.25	12.77	4 6 3.96	0.16
	*+44° 22′	34	. .	. .	. .	43.7	45.2	46.6	48.4	50.2	. .	. .	. .	6 46.82	0.33	12.77	4 6 34.38	0.19
	*+46° 43′	35	36.4	38.8	40.5	54.3	55.6	57.5	59.4	1.1	15.3	17.0	19.3	11 57.75	+ 0.29	12.78	4 11 45.26	0.24
	Lacaille 1540	36	31.8	34.0	35.5	45.7	47.0	48.3	49.5	50.9	1.5	2.9	4.6	33 48.34	− 0.38	12.79	4 33 35.17	0.32
	Weisse 806	37	52.8	54.7	55.8	5.0	6.2	7.3	8.7	9.9	19.5	20.7	22.4	38 7.55	0.12	12.79	4 37 54.64	0.16
	*+1° 15′	38	39.3	41.2	42.5	51.8	53.0	54.2	55.4	56.6	6.0	7.3	8.9	41 54.20	0.13	12.79	4 41 41.28	0.18
	Weisse 925	39	43.9	45.8	47.0	56.4	57.4	58.5	59.7	0.8	10.7	11.9	13.4	43 58.68	0.13	12.79	4 43 45.76	0.19
	Lacaille 1622	40	. .	. .	. .	. .	. .	. .	53.3	56.5	57.9	59.5	1.1	46 57.66	43.62	12.80	4 46 1.24	0.60
	Lacaille 1631	41	. .	. .	. .	26.4	28.1	29.7	31.2	32.8	44.9	46.5	48.6	47 36.03	− 6.89	12.80	4 47 16.34	0.61
	*+45° 19′	†42	35.1	38.0	40.0	53.0	54.9	56.9	58.5	59.9	12.9	15.2	17.5	56 56.54	+ 0.27	12.80	4 56 44.01	0.44
	B. A. C. 1565	43	8.1	17.7	23.8	13.2	19.2	25.0	31.9	37.8	28.6	35.3	43.9	1 25.86	+ 1.70	12.81	5 1 14.75	3.25
	β Orionis.	44	16.1	17.9	19.0	28.5	29.7	30.8	32.0	33.2	42.9	44.1	45.7	8 30.90	− 0.21	12.81	5 8 17.88	0.33
	*−28° 34′	45	52.7	54.9	56.1	6.8	8.1	9.3	10.6	11.9	23.0	24.3	26.2	26 9.35	0.41	12.82	5 25 56.12	0.61
	*− 5° 39′	46	31.1	32.8	34.2	43.6	44.8	45.9	47.2	48.3	58.1	59.1	0.8	27 45.99	0.18	12.82	5 27 32.99	0.40
	*− 5° 43′	47	. .	. .	. .	22.2	23.5	24.7	26.0	27.0	. .	. .	. .	28 24.68	0.13	12.83	5 28 11.72	0.40
	*− 5° 42′	48	11.1	13.0	14.0	. .	. .	. .	. .	. .	37.9	39.1	40.8	28 25.98	− 0.24	12.83	5 28 12.91	0.40
	Weisse (2) 1064	49	6.8	9.1	10.3	21.3	22.5	23.9	25.2	26.6	37.7	39.0	40.9	34 23.94	+ 0.10	12.83	5 34 11.21	0.40
	*+72° 28′	50	22.8	28.9	32.5	4.1	7.6	11.4	15.9	19.4	50.9	55.2	0.6	48 11.75	+ 1.08	−12.84	5 47 59.99	− 2.15

1. Faint.
42. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Jan. 18, 4.2	− 11.78	+ 0.012	+ 0.38	− 0.10
21, 5.8	− 12.84	− 0.040	+ 0.46	− 0.14

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h. m. s.	s.
1870. Jan. 21 Y.	γ Columbæ	1	51.6	53.8	55.0	7.0	8.3	9.9	11.3	12.6	24.4	25.8	27.9	53 9.78	− 0.50	−12.84	5 52 56.44	− 0.91
	O. Arg. N. 6525	2	34.9	41.5	45.6	19.5	23.4	27.1	31.8	36.1	10.1	14.4	20.4	1 27.71	+ 1.16	12.85	6 1 16.02	2.44
	B. A. C. 2014	3	46.5	48.8	50.3	1.6	3.0	4.5	6.0	7.4	19.1	20.5	22.6	9 4.57	0.15	12.85	6 8 51.87	0.54
	Lalande 11959	4	40.7	43.0	44.5	56.5	57.9	59.4	1.0	2.4	14.6	16.2	18.3	10 59.50	0.18	12.85	6 10 46.83	0.59
	μ Geminorum	5	3.2	5.0	6.2	16.5	17.7	19.0	20.3	21.6	31.9	33.1	35.1	15 19.05	+ 0.04	12.86	6 15 6.23	− 0.48
	δ Ursæ Minoris, S.P.	6	. .	. .	. .	. .	. .	. .	42.0	19.0	40.0	3.0	23.0	23 37.40	− 9 23.73	12.86	. . . .	+ 15.54
	Weisse 990.	7	18.8	20.7	22.0	31.7	32.7	33.9	35.2	36.3	46.4	47.5	49.2	33 34.04	0.26	12.87	6 33 20.91	− 0.68
	O. Arg. S. 5519	8	25.5	27.6	28.8	39.3	40.7	41.9	43.3	44.5	55.5	56.8	58.7	36 42.05	0.41	12.87	6 36 28.77	0.90
	*−31° 31′	9	9.5	12.9	13.2	24.1	25.5	26.9	28.4	29.6	40.8	42.2	44.2	40 27.03	0.45	12.87	6 40 13.71	1.05
	B. A. C. 2244	10	51.6	53.7	54.9	5.5	6.7	8.0	9.4	10.7	21.5	22.8	24.7	45 8.14	0.40	12.88	6 44 54.86	0.91
	Lacaille 2496	11	58.1	0.2	1.4	11.7	13.0	14.4	15.7	16.9	27.5	28.8	30.7	48 14.40	0.36	12.88	6 48 1.16	0.87
	Weisse 1579	12	31.4	32.6	33.9	35.2	37.6	. .	39.5	42.1	43.3	44.7	46.0	52 8.63	0.54	12.88	6 51 55.21	0.73
	Weisse 1587	13	41.3	42.4	43.8	45.0	47.4	. .	49.4	51.9	53.2	54.5	56.8	52 18.57	− 0.54	12.88	6 52 5.15	0.73
	Weisse (2) 1675	14	20.2	22.4	23.7	33.7	35.0	36.2	37.5	38.7	48.9	50.1	52.1	56 36.23	+ 0.03	12.88	6 56 23.38	0.55
	*−26° 8′	15	45.3	47.4	48.5	58.8	0.1	1.4	2.7	4.1	. .	. .	. .	1 56.04	+ 5.15	12.89	7 1 48.30	0.94
	Lacaille 2623	16	. .	. .	. .	21.8	23.1	24.5	25.8	27.1	37.9	39.1	40.8	2 30.01	− 5.88	12.89	7 2 11.24	0.94
	O. Arg. S. 6343	17	26.2	28.5	29.7	40.6	41.9	43.4	44.7	46.0	57.3	58.6	0.4	5 43.39	0.43	12.89	7 5 30.07	1.03
	Uranus.	18	. .	. .	. .	38.5	39.7	40.8	42.2	43.5	53.9	55.1	57.0	24 46.34	− 5.30	12.90	7 24 28.14	
	o Geminorum	19	35.9	38.1	39.5	51.1	52.4	53.8	55.4	56.6	8.4	9.8	11.7	30 53.88	+ 0.15	12.91	7 30 41.12	0.64
	*−29° 50′	20	48.6	50.8	52.1	2.9	4.2	5.5	6.8	8.3	19.5	20.8	22.4	34 5.63	− 0.43	12.91	7 33 52.29	1.07
	o Puppis.	21	38.8	40.8	41.9	52.6	53.6	54.9	56.3	57.4	8.3	9.5	11.5	42 55.05	− 0.38	12.92	7 42 41.75	0.98
	φ Geminorum	22	29.2	31.5	32.7	43.2	44.3	45.6	47.2	48.3	59.1	0.3	2.3	45 45.79	+ 0.08	12.92	7 45 32.95	− 0.60
25	*+23° 18′	23	29.4	31.4	32.7	. .	. .	. .	. .	. .	58.5	59.7	1.5	39 45.53	− 0.05	10.27	3 39 35.21	+ 0.15
	*+23° 18′	24	38.7	40.8	42.0	. .	. .	. .	. .	. .	7.6	9.0	10.7	39 54.80	0.05	10.27	3 39 44.48	0.15
	*+23° 36′	25	7.8	9.8	10.9	. .	. .	. .	. .	. .	36.7	38.0	39.8	41 23.63	0.05	10.27	3 41 13.31	0.14
	*+23° 36′	26	23.1	25.0	26.4	. .	. .	. .	. .	. .	52.1	53.5	55.3	41 39.23	0.05	10.27	3 41 28.91	0.14
	*+23° 45′	27	2.9	4.8	6.2	16.3	17.5	18.9	20.3	21.5	31.9	33.4	35.2	43 18.99	0.00	10.27	3 43 8.72	0.13
	γ^1 Eridani.	28	53.2	55.0	56.2	5.9	7.1	8.3	9.6	10.7	20.6	21.8	23.5	52 8.35	0.24	10.26	3 51 57.85	+ 0.07
	B. A. C. 1308	29	47.6	49.7	50.9	1.9	3.1	4.5	6.0	7.4	18.4	19.8	21.7	9 4.64	0.37	10.25	4 8 54.02	− 0.15
	*−30° 28′	30	43.3	45.5	46.6	58.0	59.2	0.5	2.0	3.3	14.2	15.4	17.8	12 0.53	0.37	10.25	4 11 49.91	0.17
	B. A. C. 1374	31	0.3	2.6	4.0	15.5	16.9	18.3	19.9	21.2	32.9	34.4	36.3	20 18.39	0.43	10.24	4 20 7.72	0.26
	Weisse 722	32	59.9	1.7	3.1	12.6	13.9	15.2	16.4	17.6	27.4	28.6	30.3	34 15.15	0.05	10.23	4 34 4.87	0.09
	*+10° 45′	33	9.5	11.0	13.5	. .	. .	. .	. .	. .	36.6	37.9	39.5	41 24.67	0.13	10.23	4 41 14.31	0.13
	*+10° 45′	34	. .	. .	. .	25.0	26.2	27.3	28.5	29.6	. .	. .	. .	41 27.32	0.02	10.23	4 41 17.07	0.13
	*+10° 46′	35	52.5	53.8	55.3	56.6	58.7	. .	59.7	2.4	3.6	4.7	6.0	41 29.33	0.34	10.23	4 41 18.76	0.13
	Lacaille 1622	36	53.0	55.5	57.0	9.0	10.4	11.9	13.3	14.9	27.3	28.8	30.6	46 11.97	0.48	10.22	4 46 1.27	0.53
	Lacaille 1631	37	8.2	10.5	11.9	24.1	25.4	27.0	28.5	29.9	42.5	43.9	45.9	47 27.07	0.48	10.22	4 47 16.37	0.54
	11 Orionis.	38	3.8	5.7	6.8	16.5	17.7	19.0	20.2	21.4	31.3	32.4	34.3	57 19.01	0.05	10.22	4 57 8.74	0.19
	m Tauri	39	40.8	42.9	44.2	54.0	55.1	56.3	57.8	59.0	9.0	10.3	12.1	59 56.50	− 0.03	10.22	4 59 46.25	0.21
	Weisse 145	40	45.7	47.6	48.8	58.1	59.5	0.7	1.9	3.1	. .	. .	. .	7 55.67	+ 4.85	10.21	5 7 50.31	0.26
	Weisse 153	41	. .	. .	. .	22.3	23.5	24.6	25.9	27.1	. .	. .	. .	8 24.68	− 0.06	10.21	5 8 14.41	0.25
	Weisse 156	42	14.0	15.9	17.2	. .	. .	. .	. .	. .	41.0	42.1	43.7	8 28.98	0.17	10.21	5 8 18.60	0.25
	θ Orionis.	43	27.5	28.7	30.0	31.3	33.5	. .	33.7	36.2	37.3	38.7	39.9	29 3.68	0.44	10.20	5 28 53.04	0.37
	θ Orionis.	44	49.4	51.2	52.4	. .	. .	. .	. .	. .	16.0	17.1	18.8	29 4.15	0.23	10.20	5 28 53.72	0.37
	θ Orionis.	45	. .	. .	. .	2.5	3.7	4.9	6.0	7.3	. .	. .	. .	29 4.88	− 0.12	10.20	5 28 54.56	0.37
	*+72° 28′	46	20.5	26.7	30.4	1.5	5.1	8.7	13.0	17.3	49.1	52.3	58.5	48 9.37	+ 0.75	10.18	5 47 59.94	2.08
	B. A. C. 1915	47	. .	. .	. .	30.3	31.8	33.7	51.9	54.6	56.2	57.6	59.1	53 46.90	− 30.98	10.18	5 53 5.74	0.79
	*+28° 9′	48	54.0	56.0	57.2	7.3	8.5	9.7	11.0	12.2	22.5	23.8	25.6	59 9.80	+ 0.04	10.18	5 58 59.66	0.45
	Weisse 55	49	36.6	38.5	39.7	. .	. .	. .	. .	. .	3.8	4.9	6.6	3 51.68	− 0.26	10.17	6 3 41.25	0.53
	*−9° 23′	50	. .	. .	. .	51.4	52.6	53.8	55.0	56.1	. .	. .	. .	3 53.78	− 0.15	−10.17	6 3 43.46	− 0.53

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Jan. 25, 5.9	− 10.18	+ 0.040	+ 0.36	− 0.14

Date and observer.		OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
															m. s.	m. s.	s.	h. m. s.	s.
1870. Jan. 25 Y.		Weisse 73 . . .	1	. .	. .	. .	22.5	23.7	24.9	26.2	27.3	37.0	38.2	39.9	4 29.96	− 5.21	−10.17	6 4 14.58	− 0.53
	l	Orionis. . . .	2	52.4	54.3	55.5	4.8	5.9	7.2	8.6	9.6	19.3	20.6	22.3	10 7.32	0.08	10.17	6 9 57.07	0.45
		Lacaille 2232 . .	3	49.0	51.2	52.6	3.5	4.7	6.0	7.4	8.8	19.9	21.1	23.2	16 6.13	0.37	10.17	6 15 55.59	− 0.85
	δ	Ursæ Minoris, S.P.	4	. .	. .	. .	. .	. .	. .	40.0	14.5	36.0	0.0	18.0	23 33.75	9 22.10	10.16	. . . .	+ 14.86
		O. Arg. S. 5434 .	5	34.3	36.3	37.6	48.2	49.5	50.7	52.1	53.5	54.4	55.6	57.5	33 50.88	0.35	10.15	6 33 40.38	− 0.87
		O. Arg. S. 5543 .	6	0.9	2.8	4.0	14.4	15.5	16.7	18.1	19.5	29.8	31.1	32.8	37 16.87	− 0.31	10.15	6 37 6.41	0.80
		*+52° 7′ . . .	7	10.3	13.5	15.5	. .	. .	. .	. .	. .	53.9	55.8	58.4	41 34.57	+ 0.14	10.15	6 41 24.56	0.75
		O. Arg. N. 7274 .	8	29.2	31.5	33.7	. .	. .	. .	. .	. .	12.4	14.4	16.8	41 53.00	+ 0.14	10.15	6 41 42.99	0.76
		Lacaille 2494 . .	9	10.6	12.9	14.2	25.6	26.9	28.2	29.8	31.2	42.6	44.2	46.2	47 28.40	− 0.42	10.14	6 47 17.84	1.06
		*−28° 47′ . . .	10	. .	. .	. .	23.6	24.8	26.0	27.5	28.8	39.8	41.3	43.2	49 31.88	5.99	10.14	6 49 15.75	0.95
	ε	Canis Majoris. .	11	25.7	. .	28.9	39.7	41.0	42.4	43.7	45.0	56.1	. .	59.3	53 42.42	0.34	10.14	6 53 31.94	0.96
		*−31° 11′ . . .	12	55.5	57.5	58.8	10.0	11.3	12.6	14.2	15.4	26.6	28.0	29.9	3 12.71	0.38	10.13	7 3 2.20	1.03
		*−14° 17′ . . .	13	31.3	33.4	34.4	44.2	45.4	46.6	47.8	49.0	58.8	0.0	1.7	6 46.60	0.24	10.13	7 6 36.23	0.75
		Weisse 196 . .	14	17.3	19.1	20.3	30.0	31.1	32.5	33.8	35.0	44.8	46.0	47.7	7 32.51	0.24	10.13	7 7 22.14	0.75
		Weisse 274 . .	15	50.1	52.1	53.3	. .	. .	. .	. .	. .	17.6	18.8	20.7	10 5.43	0.29	10.13	7 9 55.01	0.75
		Weisse 283 . .	16	4.9	6.8	8.0	. .	. .	. .	. .	. .	32.4	33.5	35.3	10 20.15	0.29	10.13	7 10 9.73	0.75
		Weisse 461 . .	17	57.8	59.8	1.0	10.6	11.8	13.0	14.3	15.5	25.4	26.6	28.3	16 13.10	0.24	10.13	7 16 2.73	0.78
		*+22° 33′ . . .	18	7.2	8.6	10.1	11.5	13.9	. .	18.8	21.3	22.7	24.1	25.5	23 46.37	0.28	10.12	7 23 35.97	0.60
		Uranus. . . .	19	39.9	41.8	43.1	53.0	54.4	55.6	57.0	58.2	8.6	9.9	11.6	23 55.74	0.00	10.12	7 23 45.62	
		Lacaille 2870 . .	20	2.4	4.4	5.5	16.0	17.2	18.5	19.9	21.2	31.8	32.9	34.7	31 18.59	0.32	10.12	7 31 8.15	0.97
	m	Puppis	21	48.5	50.6	51.7	2.0	3.3	4.6	6.0	7.3	17.9	19.1	21.0	33 4.73	0.32	10.12	7 32 54.29	0.97
		O. Arg. S. 7296 .	22	5.5	7.7	9.2	20.0	21.3	22.7	24.0	25.3	36.4	37.7	39.8	37 22.69	0.37	10.11	7 37 12.21	1.08
	o	Puppis	23	36.0	38.0	39.2	49.7	50.9	52.2	53.6	54.8	5.5	6.7	8.7	42 52.30	− 0.32	10.11	7 42 41.87	0.99
	φ	Geminorum . .	24	26.5	28.6	29.9	40.5	41.8	43.0	44.5	45.8	56.4	57.8	59.7	45 43.14	+ 0.03	10.11	7 45 33.06	− 0.62
Feb. 10		Lacaille 1410 . .	25	54.9	57.0	58.4	10.0	11.3	13.0	14.4	15.6	27.3	28.5	30.8	13 12.84	0.17	15.11	4 12 57.90	+ 0.09
		Lacaille 1416 . .	26	51.5	53.6	55.0	6.8	8.0	9.6	10.9	12.4	23.8	25.2	27.3	14 9.46	0.17	15.11	4 13 54.52	0.09
	ε	Tauri	27	0.9	2.7	3.9	14.0	15.3	16.7	17.9	19.0	28.9	30.0	32.0	21 16.48	0.10	15.11	. . . .	0.19
		Lalande 9106 . .	28	26.0	28.3	29.8	43.3	44.9	46.9	48.4	49.9	2.9	4.5	6.9	45 46.53	+ 0.10	15.11	4 45 31.52	0.01
		*+43° 56′ . . .	29	. .	. .	. .	36.9	38.2	40.8	1.8	4.9	6.6	8.5	10.0	46 55.96	− 35.44	15.11	4 46 5.41	0.01
	δ	Ursæ Minoris, S.P.	30	. .	. .	. .	41.0	0.0	20.0	41.0	59.0	. .	. .	. .	14 20.02	− 1.74	15.13	. . . .	11.54
12		Polaris	31	50.0	58.0	46.0	26.0	13.0	6.5	53.0	37.0	10.2	56.0	12.5	11 0.70	+ 9.55	15.80	. . . .	22.33
		Lacaille 1410 . .	32	55.6	57.7	58.9	10.6	11.8	13.4	15.0	16.5	27.9	29.4	31.5	13 13.48	0.05	15.87	4 12 57.66	0.14
		Lacaille 1416 . .	33	52.2	54.5	55.9	7.4	8.7	10.3	11.8	13.0	24.6	26.0	28.1	14 10.23	0.05	15.87	4 13 54.41	0.13
	ε	Tauri	34	1.5	3.3	4.6	14.6	15.8	17.3	18.5	19.6	29.6	30.7	32.7	21 17.11	0.15	15.87	4 21 1.39	0.22
		*+43° 52′ . . .	35	24.7	26.9	28.5	42.0	43.5	45.4	46.8	48.2	1.4	2.8	5.4	44 45.05	0.27	15.88	4 44 29.44	0.03
		Lalande 9106 . .	36	. .	. .	. .	43.7	45.4	47.2	48.7	50.5	. .	. .	. .	45 47.10	+ 0.19	15.88	4 45 31.41	0.02
		*+43° 57′ . . .	37	. .	. .	. .	1.2	3.0	5.6	26.5	29.6	31.3	33.2	34.6	50 20.62	− 35.28	15.88	4 49 29.46	0.00
		*+43° 57′ . . .	38	. .	. .	. .	43.5	44.8	46.8	48.3	49.9	. .	. .	. .	49 46.66	+ 0.19	15.88	4 49 30.97	0.00
		*+29° 38′ . . .	39	56.2	57.7	59.1	0.4	3.4	. .	. .	. .	. .	. .	. .	0 59.36	38.83	15.88	5 1 22.31	0.01
		*+29° 38′.5 . .	40	25.8	27.7	29.0	40.0	41.4	42.9	44.2	45.5	56.3	57.6	59.8	1 42.75	0.20	15.88	5 1 27.07	+ 0.01
		Lacaille 1779 . .	41	16.4	18.3	19.4	30.0	31.5	32.9	34.1	35.3	45.7	46.8	49.0	11 32.67	0.06	15.89	5 11 16.84	− 0.25
		*−25° 26′ . . .	42	32.7	34.2	35.6	36.9	39.6	. .	46.0	48.4	49.8	51.4	52.5	13 12.71	0.34	15.89	5 12 57.16	0.26
		*−25° 24′ . . .	43	57.8	59.7	1.0	11.5	12.6	14.2	15.4	16.5	27.0	28.4	30.3	13 14.04	0.06	15.89	5 12 58.21	0.27
		*− 5° 26′ . . .	44	45.4	47.0	48.3	57.8	59.0	0.3	1.4	2.5	12.0	13.1	15.0	27 0.16	+ 0.10	15.89	5 26 44.37	0.15
		*− 5° 40′ . . .	45	. .	. .	. .	0.5	1.5	3.4	18.5	20.7	22.0	23.4	24.5	28 14.31	− 25.61	15.89	5 27 32.81	0.16
		*− 5° 43′ . . .	46	. .	. .	. .	59.4	0.6	2.5	17.6	19.8	21.0	22.5	23.6	30 13.38	25.61	15.89	5 29 31.88	0.17
		*− 5° 43′.5 . .	47	. .	. .	. .	. .	. .	. .	38.7	40.9	42.1	43.5	44.7	30 41.98	− 33.13	15.89	5 29 52.96	0.18
	α	Orionis. . . .	48	9.3	10.9	12.0	21.9	23.0	24.3	25.5	26.5	36.0	37.2	38.9	48 24.14	+ 0.12	15.90	5 48 8.36	0.22
		Lacaille 2085 . .	49	. .	. .	. .	43.3	44.3	46.8	4.9	7.7	9.1	10.7	12.3	53 59.89	− 30.63	15.90	5 53 13.36	− 0.56
	δ	Ursæ Minoris, S.P.	50	. .	. .	. .	. .	. .	. .	54.0	35.0	56.0	16.0	37.0	23 51.60	− 9 30.54	−15.91	. . . .	+ 11.08

January 26. Image $0^{r}.00$. Clamp east.
26. Image $0^{r}.00$. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Feb. 10, 4.4	− 15.11	− 0.010	− 0.05	− 0.11
12, 6.7	− 15.92	− 0.022	+ 0.12	+ 0.11

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h. m. s.	s.
1870. Feb. 12 Y.	B. A. C. 2210 . .	1	15.2	22.6	28.5	11.8	16.5	22.4	26.8	31.7	14.4	19.9	27.5	41 21.57	+ 1.02	−15.92	6 41 6.67	− 3.72
	κ Canis Majoris. .	2	58.5	0.4	1.6	13.1	14.5	16.2	17.6	18.8	29.8	31.2	33.4	45 15.92	0.06	15.92	6 45 0.06	0.82
	Weisse (2) 1675 .	3	23.2	25.0	26.4	36.5	37.9	39.2	40.4	41.7	51.8	53.0	54.9	56 39.09	0.16	15.92	6 56 23.33	0.48
	*+42° 15′ . . .	4	56.8	59.1	0.7	13.5	15.1	16.8	18.4	20.0	32.7	34.4	36.8	5 16.75	+ 0.26	15.93	7 5 1.08	0.66
	*+42° 9′ . . .	5	. .	. .	. .	57.5	59.2	1.0	2.5	4.0	16.5	18.0	20.5	6 7.40	− 6.43	15.93	7 5 45.04	0.66
	Weisse (2) 347. .	6	52.7	55.0	56.7	9.5	11.1	12.8	14.3	15.7	28.3	29.9	32.3	13 12.57	+ 0.25	15.93	7 12 56.89	0.68
	Weisse 464 . .	7	6.3	8.0	9.2	19.1	20.4	21.6	22.8	23.9	33.7	34.9	36.6	16 21.50	0.08	15.93	7 16 5.65	0.77
	*−18° 45′ . . .	8	1.3	3.4	4.3	14.6	15.7	17.1	18.4	19.5	29.4	30.6	32.6	19 16.95	0.07	15.93	7 19 1.09	0.75
	O. Arg. S. 6762 .	9	45.4	46.7	48.0	49.3	51.9	. .	55.3	57.5	58.9	0.2	1.5	19 23.47	0.34	15.93	7 19 7.88	0.75
	6 Canis Majoris. .	10	34.6	36.5	37.5	47.5	48.7	50.0	51.1	52.2	1.9	3.0	4.9	22 49.81	0.14	15.94	7 22 34.01	0.56
	O. Arg. S. 7101 .	11	51.7	53.6	54.9	5.6	7.0	8.5	9.6	10.9	21.5	22.9	24.9	31 8.28	+ 0.06	15.94	7 30 52.40	0.92
	*−14° 19′ . . .	12	. .	. .	. .	29.1	30.5	31.6	32.7	33.8	43.4	44.7	46.5	35 36.54	− 5.04	15.94	7 35 15.56	0.75
	O. Arg. S. 7444 .	13	27.3	29.0	30.3	41.6	42.8	44.2	45.7	47.0	57.9	59.2	1.2	42 44.20	+ 0.06	15.94	7 42 28.32	1.03
	O. Arg. S. 7505 .	14	15.4	17.3	18.6	29.8	31.0	. .	33.8	34.9	45.9	47.1	49.4	44 32.32	0.07	15.94	7 44 16.45	1.02
	*−26° 7′ . . .	15	37.4	39.2	40.5	. .	. .	. .	. .	. .	7.1	8.2	10.3	49 53.78	0.11	15.92	7 49 37.97	0.96
	*−26° 5′ . . .	16	52.5	54.3	55.7	. .	. .	. .	. .	. .	22.0	23.4	25.5	50 8.90	0.11	15.92	7 49 53.09	0.96
	*−37° 15′ . . .	17	20.5	22.5	23.8	36.0	37.3	38.8	40.5	41.8	53.7	55.0	57 4	53 38.85	0.05	15.93	7 53 22.97	1.22
	ρ Argus	18	1.3	3.0	4.4	14.8	16.0	17.4	18.8	20.0	30.2	31.4	33.5	2 17.35	0.07	15.95	8 2 1.47	0.95
	Weisse (2) 319. .	19	23.7	25.4	26.5	36.9	38.0	39.3	40.6	41.7	51.9	53.1	55.0	15 39.28	0.16	15.95	8 15 23.49	0.68
	d^2 Cancri	20	29.1	30.9	32.1	42.2	43.4	44.7	45.9	47.1	57.0	58.1	0.1	18 44.60	0.15	15.96	8 18 28.79	0.68
	*−31° 34′ . . .	21	37.2	39.0	40.5	51.6	53.1	54.7	55.9	57.2	8.3	9.7	12.0	21 54.47	0.06	15.96	8 21 38.57	1.15
	B. A. C. 2883 . .	22	46.9	48.7	50.1	1.5	2.6	4.1	5.6	6.9	17.7	19.2	21.4	28 4.06	0.06	15.96	8 27 48.16	1.15
	ε Hydræ	23	55.0	56.8	58.0	7.7	8.8	10.1	11.4	12.5	22.0	23.0	24.8	40 10.01	0.12	15.96	8 39 54.17	− 0.72
21	Groombridge 892 .	24	50.0	52.8	54.8	11.0	12.5	14.3	16.6	18.3	34.0	35.8	38.7	46 14.44	0.04	25.29	4 45 49.19	+ 0.20
	11 Orionis. . . .	25	18.2	20.1	21.5	31.2	32.4	33.8	35.0	36.0	46.0	47.2	48.9	57 33.66	0.08	25.32	4 57 8.42	+ 0.17
	*−12° 3′ . . .	26	32.0	33.8	35.0	45.0	46.0	47.3	48.5	49.5	59.3	0.3	2.4	1 47.19	0.14	25.32	5 1 22.01	0.00
	θ^1 Orionis	27	42.4	43.5	45.0	46.0	. .	. .	. .	50.8	52.1	53.5	54.6	29 18.49	0.40	25.40	5 28 53.49	− 0.03
	θ^2 Orionis	28	. .	. .	. .	22.9	24.0	25.4	26.5	27.6	. .	. .	. .	29 25.28	0.06	25.40	5 28 59.94	0.03
	*−5° 30′ . . .	29	13.9	15.5	16.9	. .	. .	. .	. .	. .	40.6	41.7	43.7	29 28.72	0.17	25.40	5 29 3.49	0.03
	Lacaille 1913 . .	30	38.4	40.1	41.4	52.3	53.5	55.0	56.3	57.4	8.1	9.3	11.4	32 54.84	0.18	25.40	5 32 29.62	0.17
	*+71° 37′ . . .	31	7.9	13.0	16.6	. .	. .	. .	. .	. .	30.0	34.6	40.6	43 53.78	+ 0.17	25.43	5 43 28.52	0.73
	*+71° 40′ . . .	32	. .	. .	. .	47.8	51.7	55.6	58.9	2.7	. .	. .	. .	43 55.34	− 0.16	25.43	5 43 29.75	0.73
	*+71° 34′ . . .	33	. .	. .	. .	. .	. .	. .	30.3	37.0	41.2	45.4	48.5	45 40.48	1 44.55	25.43	5 43 30.50	0.72
	*−29° 56′ . . .	34	0.2	1.4	3.0	4.2	5.6	. .	36.9	39.7	41.1	42.8	44.0	51 21.89	− 18.92	25.45	5 50 37.52	0.31
	*−29° 58′ . . .	35	47.5	49.8	51.1	. .	. .	. .	. .	. .	18.0	19.5	21.5	51 4.57	+ 0.24	25.45	5 50 39.36	0.32
	*+26° 24′ . . .	36	30.5	32.5	33.7	44.6	45.9	47.3	48.6	50.0	0.4	1.7	3.6	54 47.16	0.07	25.45	5 54 21.78	0.12
	*−27° 45′ . . .	37	. .	. .	. .	54.9	55.9	57.0	58.5	59.8	. .	. .	. .	7 57.22	0.12	25.49	6 7 31.85	0.39
	*−27° 43′ . . .	38	43.2	45.0	46.4	. .	. .	. .	. .	. .	13.1	14.3	16.5	7 59.75	+ 0.23	25.49	6 7 34.49	0.39
	*−27° 44′ . . .	39	. .	. .	. .	25.7	27.0	29.2	46.0	48.7	50.1	51.6	52.9	8 41.40	− 28.73	25.49	6 7 47.18	0.40
	Lalande 12053. .	40	. .	57.0	58.5	9.0	10.0	11.4	12.8	13.9	23.9	25.1	. .	13 11.29	+ 0.08	25.50	6 12 45.87	0.20
	μ Geminorum . .	41	15.4	17.2	18.6	29.0	30.0	31.5	32.8	34.0	44.2	45.4	47.3	15 31.40	0.07	25.50	6 15 5.97	0.22
	Lacaille 2254 . .	42	38.2	40.1	41.5	52.4	53.7	55.4	56.5	58.0	8.8	10.2	12.2	18 55.18	0.19	25.52	6 18 29.85	0.49
	*+37° 49′ . . .	43	36.0	38.3	39.8	52.0	53.5	55.0	56.5	57.9	9 9	11.3	13.6	26 54.89	0.05	25.54	6 26 29.40	0.33
	*+37° 49′ . . .	44	9.1	11.0	12.4	14.0	17.0	. .	33.0	35.8	37.3	39.0	40.5	26 54.91	0.38	25.54	6 26 29.75	0.33
	Lalande 12768. .	45	26.6	28.6	29.9	41.3	42.7	44.3	45.6	46.9	58.3	59.4	1.5	33 44.10	+ 0.06	25.56	6 33 18.60	0.32
	51 Cephei	46	. .	. .	. .	33.0	55.0	21.0	46.0	8.5	. .	. .	. .	39 20.70	− 1.07	25.56	. . . .	11.09
	*−32° 22′ . . .	47	49.3	51.4	52.7	4.0	5.4	6.8	8.3	9.6	20.7	22.0	24.1	45 6.75	+ 0.20	25.58	6 44 41.37	0.68
	*−23° 42′ . . .	48	49.1	50.9	52.0	2.6	3.9	5.2	6.5	7.7	18.2	19.3	21.4	55 5.16	0.17	25.61	6 54 39.72	0.60
	Weisse 164 . .	49	21.4	23.0	24.2	34.1	35.3	36.6	37.9	39.0	48.9	50.2	51.7	6 36.57	0.14	25.64	7 6 11.07	0.55
	*−14° 38′ . . .	50	16.2	17.9	19.0	29.0	30.2	31.6	32.8	34.0	43.6	44.8	46.5	7 31.42	+ 0.14	−25.64	7 7 5.92	− 0.56

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Feb. 21, 7.2	− 25.65	− 0.148	− 0.11	+ 0.11

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h m. s.	s.
1870. Feb. 21 Y.	*−14° 37′ . . .	1	1.2	3.0	4.4	14.2	15.4	16.8	18.0	19.1	28.6	29.9	31.7	12 16.57	+ 0.14	−25.65	7 11 51.06	− 0.58
	*−27° 53′ . . .	2	. .	. .	. .	. .	. .	. .	32.0	34.6	36.0	37.5	38.7	16 35.76	− 37.23	25.66	7 15 32.87	0.76
	O. Arg. S. 6666 .	3	. .	. .	. .	7.8	9.1	10.7	11.9	13.3	. .	. .	. .	16 10.56	+ 0.12	25.66	7 15 45.02	0.76
	*−14° 42′ ± . .	4	. .	. .	. .	49.0	50.3	51.6	53.0	54.3	. .	. .	. .	20 51.64	0.08	25.67	7 20 26.05	0.62
	*−14° 42′ ± . .	5	36.7	38.4	39.5	. .	. .	. .	. .	. .	4.3	5.4	7.3	20 51.93	0.19	25.67	7 20 26.45	0.62
	Lacaille 2873 . .	6	4.6	6.8	8.0	19.5	20.7	22.3	23.6	24.9	36.0	37.5	39.8	31 22.15	0.21	25.70	7 30 56.66	0.93
	*−34° 32′ . . .	7	36.6	38.5	39.9	51.5	53.0	54.5	55.8	57.1	9.0	10.2	12.3	34 54.40	0.21	25.70	7 34 28.91	0.97
	Lalande 15196 . .	8	45.6	47.7	49.2	1.1	2.7	4.1	5.6	6.9	18.9	20.4	22.9	43 4.10	0.05	25.72	7 42 38.43	0.65
	*+12° 6′ . . .	9	6.0	7.9	9.0	28.7	29.9	31.2	32.5	33.5	. .	. .	. .	49 22.34	+ 5.14	25.73	7 49 1.75	0.58
	*+12° 7′ . . .	10	. .	. .	. .	39.5	40.7	42.2	43.3	44.5	54.2	55.3	57.4	49 47.14	− 4.99	25.73	7 49 16.42	0.58
	O. Arg. S. 7797 .	11	47.3	49.4	50.6	1.6	3.0	4.7	6.0	7.2	17.9	19.3	21.6	55 4.42	+ 0.19	25.75	7 54 38.86	0.96
	O. Arg. S. 7798 .	12	. .	. .	. .	. .	. .	. .	46.5	49.0	50.5	51.8	53.3	55 50.22	− 38.00	25.75	7 54 46.47	0.96
	B. A. C. 2703 . .	13	4.0	5.7	7.0	17.4	18.7	20.0	21.3	22.5	32.6	33.9	36.0	59 19.92	+ 0.07	25.76	7 58 54.23	0.61
	ρ Argus	14	10.7	12.7	14.0	24.6	25.8	27.2	28.4	29.6	39.8	42.0	43.1	2 27.08	+ 0.17	25.77	8 2 1.48	0.89
	*−30° 30′ . . .	15	. .	. .	. .	20.6	22.0	23.5	24.6	25.8	36.8	38.0	40.0	15 28.91	− 5.57	25.80	8 14 57.54	1.04
	Santini 583. . .	16	. .	. .	. .	28.5	29.6	31.5	46.6	48.9	50.1	51.4	52.6	19 42.40	− 25.53	25.81	8 18 51.06	0.69
	Lacaille 3316 . .	17	58.9	0.7	2.1	13.4	14.6	16.2	17.5	18.8	30.0	31.4	33.5	21 16.10	+ 0.20	25.82	8 20 50.48	1.09
	*−19° 49′ . . .	18	12.9	14.9	16.0	26.1	27.4	28.8	30.0	31.3	41.3	42.5	44.5	26 28.70	+ 0.16	25.83	8 26 3.03	0.89
	*−24° 40′ . . .	19	. .	. .	. .	30.8	32.0	34.0	50.5	53.0	54.5	55.9	57.1	30 45.98	− 28.00	25.84	8 29 52.14	0.98
	131 Præsepe . . .	20	50.2	52.0	53.3	3.5	4.6	6.0	7.3	8.3	18.4	19.5	21.7	35 5.88	+ 0.08	25.85	8 34 40.11	0.92
	*−32° 41′ . . .	21	30.6	32.2	34.0	45.3	46.7	48.5	49.7	51.0	2.1	3.5	5.6	38 48.15	0.20	25.86	8 38 22.49	1.17
	*−32° 46′ . . .	22	32.6	34.4	36.0	47.2	48.6	50.2	51.6	52.6	14.2	15.4	17.7	41 50.05	+ 0.20	25.87	8 41 24.38	1.17
	*−41° 15′ . . .	23	3.0	4.9	6.5	. .	. .	. .	1.9	5.0	6.9	8.6	10.0	45 43.35	− 20.63	25.88	8 44 56.84	1.42
	Lacaille 3561 . .	24	9.9	12.0	13.5	. .	. .	. .	. .	. .	45.3	46.6	48.7	45 29.33	+ 0.31	25.88	8 45 3.76	1.42
	Weisse (2) 1245 .	25	19.9	21.7	22.9	33.4	34.6	36.2	37.3	38.6	49.0	50.0	52.0	51 35.96	+ 0.17	25.89	8 51 10.24	0.75
	*−14° 54′ . . .	26	11.2	12.3	13.6	14.7	15.7	. .	44.2	46.6	47.9	49.2	50.5	17 30.59	− 16.99	25.96	9 16 47.64	0.93
	α Hydræ	27	23.7	25.5	26.6	36.4	37.6	38.7	40.0	41.1	50.6	51.7	53.4	21 38.66	+ 0.12	25.97	9 21 12.81	− 0.86
Mar. 10	Polaris	28	14.0	21.0	10.0	48.0	35.0	28.0	15.0	1.0	33.0	18.0	34.0	11 23.36	8.28	55.04	. . . .	+ 38.56
	α Orionis. . . .	29	48.3	50.0	51.2	0.9	2.0	3.4	4.6	5.6	5.0	6.2	8.0	49 3.20	0.11	55.38	5 48 7.93	0.19
	Lacaille 2065 . .	30	44.2	46.0	47.5	58.8	0.0	1.6	2.9	4.0	15.4	16.7	18.8	51 1.45	0.06	55.38	5 50 6.13	+ 0.05
	Lacaille 2094 . .	31	40.2	42.3	43.7	55.5	56.9	58.5	59.8	1.1	12.8	14.0	16.3	55 58.28	0.05	55.39	5 55 2.94	− 0.01
	Lacaille 2208 . .	32	29.9	31.7	33.0	43.5	44.6	46.3	47.5	48.7	59.0	0.0	2.2	12 46.04	0.07	55.41	6 11 50.70	0.05
	Weisse 446 . .	33	25.4	27.2	28.4	38.1	39.4	40.8	42.0	43.1	52.8	53.9	55.9	16 40.64	0.08	55.42	6 15 45.30	− 0.02
	*+37° 49′ . . .	34	38.4	40.1	41.5	43.0	46.3	. .	1.9	4.7	6.4	8.1	9.7	27 24.01	0.54	55.43	6 26 29.12	+ 0.01
	*+37° 49′ . . .	35	6.0	8.1	9.5	21.6	23.1	24.6	26.0	27.6	39.5	41.0	43.3	27 24.57	+ 0.21	55.43	6 26 29.35	+ 0.01
	Weisse (2) 809. .	36	. .	. .	. .	46.4	47.6	49.6	6.2	8.7	10.0	11.4	12.7	30 1.58	− 27.97	55.43	6 28 38.18	0.00
	Weisse (2) 826. .	37	. .	. .	. .	18.1	19.5	21.4	38.0	40.4	41.7	43.3	44.5	30 33.36	− 27.97	55.43	6 29 9.96	0.00
	O. Arg. S. 5522 .	38	54.7	56.5	57.8	8.7	10.0	11.4	12.8	13.9	24.5	25.8	27.7	37 11.25	+ 0.06	55.44	6 36 15.87	− 0.23
	Lacaille 2413 . .	39	41.5	43.4	44.7	55.6	56.8	58.4	59.7	0.9	11.6	12.9	15.0	38 58.23	0.06	55.44	6 38 2.85	0.25
	53 Geminorum . .	40	28.6	30.6	31.9	42.7	44.0	45.6	46.9	48.2	58.6	0.0	2.2	8 45.39	0.16	55.48	7 7 50.07	0.20
	65 Aurigæ. . . .	41	58.3	0.4	1.8	13.7	15.2	16.9	18.4	19.8	31.5	32.9	35.2	14 16.74	0.20	55.49	7 13 21.45	0.26
	Lalande 14473. .	42	49.9	52.2	53.7	6.3	7.8	9.6	11.2	12.6	24.9	26.6	29.0	22 9.44	0.23	55.50	7 21 14.17	0.32
	Weisse (2) 682. .	43	53.2	55.0	56.2	6.2	7.3	8.6	9.8	11.0	20.8	22.0	23.8	25 8.54	0.13	55.50	7 24 13.17	0.28
	O. Arg. S. 7100 .	44	25.2	27.2	28.5	39.6	40.8	42.3	43.6	44.8	55.5	56.6	58.7	31 42.06	+ 0.06	55.51	7 30 46.61	0.56
	O. Arg. S. 7108 .	45	. .	. .	. .	9.0	10.2	12.2	29.6	32.0	33.4	35.0	36.3	32 24.71	− 29.19	55.51	7 31 0.01	0.57
	*−29° 56′ . . .	†46	. .	. .	. .	42.7	43.9	45.4	46.6	47.9	59.4	0.6	2.5	38 51.13	5.67	55.52	7 37 49.94	0.60
	*−23° 52′ . . .	47	. .	. .	. .	. .	. .	. .	52.0	54.1	55.5	57.0	58.3	43 55.39	− 36.08	55.52	7 42 23.79	0.57
	*−23° 55′ . . .	48	9.5	11.1	12.4	22.9	24.1	25.6	26.8	28.0	38.4	39.9	41.8	43 25.50	+ 0.07	55.52	7 42 30.05	0.57
	ϕ Geminorum . .	49	11.4	13.3	14.7	25.4	26.7	28.2	29.5	30.6	41.1	42.5	44.6	46 28.00	+ 0.16	55.53	7 45 32.63	− 0.38
	λ Ursæ Minoris, S.P.	50	. .	. .	. .	50.0	48.0	45.0	58.0	54.0	. .	. .	. .	54 51.00	− 7.64	−55.54	. . . .	+ 28.62

46. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c.
h.	s.	s.	s.	s.
March 10, 8.2	− 55.56	− 0.075	+ 0.10	+ 0.10

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Mar. 10 Y.	*−5° 20′	1	53.9	55.5	56.7	6.3	7.4	8.8	9.9	11.0	20.5	21.6	23.5	0 8.65	+ 0.10	−55.54	7 59 13.21	— 0.50
	O. Arg. S. 8165	2	48.8	50.9	52.3	3.2	4.5	5.9	7.4	8.6	19.5	20.7	22.8	6 5.87	+ 0.06	55.55	8 5 10.38	0.76
	O. Arg. S. 8169	3	. .	. .	. .	39.2	40.3	42.6	0.0	2.5	3.7	5.4	6.7	6 55.05	— 29.42	55.55	8 5 30.08	0.76
	Lalande 16367	4	49.0	51.1	52.4	3.2	4.5	6.0	7.3	8.5	19.1	20.4	22.6	16 5.83	+ 0.16	55.57	8 15 10.42	0.52
	Lalande 16413	5	23.2	25.1	26.5	38.3	39.8	41.4	42.9	44.1	55.7	57.1	59.3	17 41.22	0.19	55.57	8 16 45.84	0.54
	Weisse 554	6	55.2	56.9	58.3	7.9	9.0	10.4	11.6	12.8	22.3	23.6	25.3	23 10.30	+ 0.12	55.57	8 22 14.85	0.66
	Weisse 569	7	. .	. .	. .	37.5	38.7	40.0	41.2	42.3	51.9	53.0	54.9	23 44.94	— 4.95	55.57	8 22 44.42	0.66
	B. A. C. 2883	8	26.4	28.4	29.7	40.9	42.3	43.7	45.0	46.4	57.4	58.6	0.8	28 43.60	+ 0.06	55.58	8 27 48.08	0.89
	*−23° 25′	9	40.9	42.6	43.9	54.4	55.6	57.0	58.3	59.5	9.7	11.0	13.0	32 56.90	+ 0.07	55.58	8 32 1.39	0.79
	*−14° 24′	10	. .	. .	. .	52.3	53.4	54.8	56.0	57.0	6.7	8.0	10.0	35 59.77	— 5.04	55.59	8 34 59.14	0.68
	α Mali	11	1.2	3.2	4.7	16.0	17.3	18.9	20.2	21.6	32.6	34.0	36.2	39 18.72	+ 0.06	55.59	8 38 23.19	0.96
	Lacaille 3551	12	32.0	34.0	35.4	46.0	47.4	49.0	50.2	51.4	2.0	3.4	5.4	45 48.75	0.06	55.60	8 44 53.21	0.92
	Lalande 17662	13	44.7	46.5	47.6	57.5	58.7	0.0	1.1	2.3	12.0	13.2	15.0	50 59.87	0.08	55.62	8 50 4.33	0.54
	O. Arg. S. 9210	14	1.0	3.0	4.2	15.4	16.8	18.4	19.6	20.9	31.7	33.1	35.3	54 18.13	0.06	55.61	8 53 22.58	1.00
	κ Cancri	15	23.3	25.1	26.4	36.0	37.1	38.5	39.7	40.9	50.3	51.7	53.4	1 38.40	0.12	55.63	9 0 42.89	0.67
	*−28° 28′	16	1.4	3.4	4.7	15.5	16.8	18.3	19.7	20.9	31.6	32.9	34.9	18 18.19	0.06	55.64	9 17 22.61	1.04
	O. Arg. S. 9824	17	56.9	58.6	59.9	10.7	12.0	13.4	14.7	15.8	26.6	28.0	29.9	27 13.32	0.06	55.65	9 26 17.73	1.05
	O. Arg. S. 10219	18	2.2	4.2	5.5	16.4	17.6	19.0	20.4	21.6	32.5	33.6	35.7	50 18.97	0.06	55.68	9 49 23.35	1.12
	O. Arg. S. 10241	19	44.4	46.4	47.6	58.5	59.7	1.0	2.5	3.7	14.5	15.8	17.9	52 1.09	+ 0.06	55.68	9 51 5.47	1.12
	O. Arg. S. 10488	20	. .	. .	. .	. .	. .	. .	22.9	25.4	26.9	28.5	29.7	11 26.68	— 38.32	55.71	10 9 52.65	1.21
	γ^1 Leonis	21	28.9	30.7	32.0	42.1	43.4	44.5	45.9	47.1	57.1	58.3	0.4	13 44.58	+ 0.14	55.71	10 12 49.01	0.85
Apr. 22 Sk.*	μ Leonis	22	33.3	35.3	36.6	47.0	48.4	49.7	51.2	52.4	2.9	4.3	6.1	45 49.75	+ 0.15	27.63	9 45 22.27	0.32
	B. A. C. 3737	23	14.0	16.0	17.2	27.0	27.8	28.7	30.1	31.3	41.0	42.2	43.9	48 29.02	- 0.06	27.58	10 48 1.38	0.66
	δ Leonis	24	24.0	25.5	27.0	37.2	38.3	39.7	41.0	42.2	52.5	53.6	55.4	7 39.67	+ 0.09	27.58	11 7 12.18	0.74
	Lalande 21645	25	14.0	15.7	. .	26.4	27.7	28.8	30.2	31.4	. .	42.3	44.1	15 28.96	— 0.26	27.56	11 15 1.14	0.86
	*+37° 35′	26	44.2	45.9	47.6	57.8	59.0	0.4	2.0	3.6	15.7	17.3	19.3	27 0.25	+ 0.29	27.55	11 26 32.99	0.91
	Lalande 21947	27	. .	. .	. .	26.4	27.8	29.3	30.8	32.3	. .	. .	. .	27 29.32	0.29	27.55	11 27 2.06	0.91
	*+38° 42′	28	9.3	11.7	13.4	25.3	26.7	28.0	29.8	31.3	43.4	45.2	47.1	38 28.29	0.31	27.54	11 38 1.06	0.98
	B. A. C. 4010	29	38.0	40.3	42.0	54.0	55.3	57.0	58.6	59.8	12.2	13.8	15.9	45 56.99	+ 0.31	27.54	11 45 29.76	1.01
	ο Virginis	30	48.8	50.6	51.6	1.4	2.5	3.3	5.0	6.2	15.7	16.9	18.6	59 3.69	— 0.03	27.53	11 58 36.13	0.92
	12 Virginis	31	2.3	4.1	5.3	14.8	15.8	17.0	18.3	19.6	29.3	30.5	32.2	7 17.20	— 0.02	27.52	12 6 49.66	0.96
	B. A. C. 4184	32	43.4	45.3	46.6	57.0	58.3	59.3	0.9	2.3	12.8	14.0	15.7	17 59.60	+ 0.13	27.51	12 17 32.22	1.02
	Weisse (2) 602	33	. .	. .	. .	15.3	16.4	17.6	19.8	21.2	. .	. .	. .	29 18.06	+ 0.28	27.50	12 28 50.84	1.17
	Weisse 583	34	59.4	1.3	2.3	11.9	12.9	14.0	15.2	16.3	26.0	27.0	28.3	36 14.05	— 0.11	27.50	12 35 46.44	1.05
	Weisse 835	35	0.4	2.3	3.5	12.9	13.9	15.2	16.6	17.6	27.1	28.3	30.0	50 15.25	0.13	27.48	12 49 47.64	1.09
	θ Virginis	36	27.1	29.0	30.3	39.9	40.9	42.0	43.2	44.6	54.1	55.3	56.8	3 42.14	0.18	27.47	13 3 14.49	— 1.14
	Polaris	37	. .	. .	. .	. .	34.0	27.0	14.0	. .	. .	. .	. .	11 25.00	22.06	27.47	. . . .	+ 42.27
25	α Hydræ	38	24.1	26.2	27.3	36.7	37.9	39.0	40.3	41.5	50.9	51.9	54.0	21 39.07	0.18	26.70	9 21 12.19	— 0.23
	B. A. C. 3345	39	45.9	47.6	48.9	58.6	59.7	0.9	2.1	3.5	13.1	14.4	15.8	41 0.95	0.06	26.72	9 40 34.17	0.28
	*−38° 45′	40	25.0	27.1	28.7	40.7	42.7	43.7	45.3	46.8	59.2	0.6	2.5	57 43.85	0.44	26.73	9 57 16.68	0.70
	O. Arg. S. 10488	41	2.3	. .	5.8	16.6	18.0	19.6	20.9	22.3	33.3	. .	36.5	10 19.70	0.35	26.74	10 9 52.61	0.68
	B. A. C. 3649	42	6.1	7.8	9.1	18.7	19.8	20.9	22.1	23.5	33.0	34.2	35.8	33 21.00	0.07	26.76	10 32 54.17	0.55
	l Leonis	43	37.8	39.5	40.7	50.2	51.3	52.7	54.0	55.9	4.9	6.0	7.5	42 52.77	0.06	26.77	10 42 25.94	0.60
	Lacaille 5066	44	2.9	4.5	5.7	17.9	19.2	20.5	22.2	23.5	34.8	36.2	38.2	7 20.51	0.38	26.84	12 6 53.29	1.31
	β Corvi	45	45.9	48.2	49.3	59.6	0.9	2.1	3.4	4.5	15.0	16.3	17.9	28 2.10	0.29	26.85	12 27 34.96	1.22
	Weisse 764	46	1.6	3.6	4.9	13.9	15.1	16.3	17.5	18.6	28.3	29.7	31.3	46 16.44	0.12	26.87	12 45 49.45	1.08
	Weisse 857	47	19.8	21.9	23.2	32.6	33.9	34.9	36.3	37.5	47.3	48.8	50.3	51 35.14	0.22	26.87	12 51 8.05	1.18
	θ Virginis	48	26.7	28.0	29.4	39.2	40.2	41.4	42.5	43.8	53.5	54.5	56.3	3 41.41	0.10	26.88	13 3 14.43	— 1.14
	Polaris, S. P.	49	. .	. .	. .	39.0	26.0	20.0	5.0	39.0	. .	. .	. .	11 13.80	10.95	26.89	. . . .	+ 41.65
	Weisse 318	50	36.9	38.9	39.9	49.5	50.7	51.9	53.1	54.1	3.5	4.5	6.3	21 51.75	— 0.13	−26.90	13 21 24.72	— 1.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
h.	s.	s.	s.	s.
April 22, 11.5	— 27.55	+ 0.049	+ 0.59	— 0.13
25, 11.4	— 26.80	— 0.049	+ 0.34	— 0.13

March 11. Image east 0ʳ.08. Clamp west.
Image east 0ʳ.12. Clamp east.
34. Minutes not recorded.

*Sk. Mr. A. N. Skinner.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
1870.														m. s.	m. s.	s.	h. m. s.	s.
Apr. 25 Sk.	B. A. C. 4560	1	17.6	19.4	20.5	30.3	31.2	32.4	34.0	35.2	44.6	45.6	47.4	34 32.56	− 0.21	−26.91	13 34 5.44	− 1.25
27	β Leonis	2	38.2	40.1	41.3	51.2	52.3	53.5	54.8	56.1	5.9	7.1	8.7	42 53.56	+ 0.06	27.15	. . . .	0.83
	o Virginis	3	48.3	50.2	51.3	0.9	2.0	3.0	4.4	5.6	15.5	16.7	18.3	59 3.29	− 0.02	27.15	. . . .	0.90
	Lacaille 5066	4	3.4	5.6	7.0	18.2	19.7	20.9	22.6	23.9	35.2	36.7	38.6	7 21.07	− 0.61	27.15	12 6 53.31	1.31
	3 Canum Venat.	5	28.8	31.6	33.3	48.0	49.7	51.6	53.6	55.3	10.1	11.8	14.7	13 51.68	+ 0.63	27.15	12 13 25.16	1.28
	*+5° 27	6	. .	. .	. .	9.2	10.2	11.4	12.7	13.9	. .	. .	. .	25 11.48	− 0.02	27.15	12 24 44.31	1.00
	8 Draconis	7	8.9	13.6	16.1	39.6	42.5	45.2	48.5	51.2	14.9	17.7	21.6	50 45.44	+ 1.26	27.15	12 50 19.55	− 2.29
	Polaris, S. P.	†8	. .	. .	. .	53.0	38.0	. .	21.0	4.0	. .	. .	. .	11 29.00	− 25.27	27.15	. . . .	+ 41.08
30	l Leonis	9	36.8	38.5	39.8	49.3	50.6	51.5	52.8	54.0	3.8	5.0	6.7	42 51.71	− 0.02	25.82	. . . .	− 0.54
	B. A. C. 4010	10	36.4	38.4	40.0	52.1	53.6	54.9	56.8	58.0	10.3	11.8	13.9	45 55.11	+ 0.27	25.78	11 45 29.60	0.92
	Lacaille 5073	11	2.2	4.3	5.8	16.8	18.2	19.6	21.0	22.6	34.0	35.5	37.2	7 19.75	− 0.51	25.77	12 6 53.47	1.28
	Weisse 857	12	18.9	20.7	21.9	31.7	32.8	34.1	35.5	36.4	46.4	47.5	49.1	51 34.09	0.27	25.75	12 51 8.07	− 1.17
	Polaris	13	. .	. .	. .	43.0	34.0	26.0	14.0	59.0	. .	. .	. .	11 23.20	2.29	25.74	. . . .	+ 39.80
	B. A. C. 4560	14	16.7	18.4	19.7	29.2	30.4	31.5	32.8	33.9	43.7	44.9	46.5	34 31.61	− 0.25	25.73	13 34 5.63	− 1.26
	α Bootis	†15	55.7	57.2	58.3	8.4	9.6	10.7	11.8	13.4	23.4	24.3	26.2	10 10.82	+ 0.06	25.71	. . . .	1.23
May 4	γ^1 Leonis	16	. .	. .	. .	11.8	13.2	14.3	15.6	17.1	. .	. .	. .	13 14.40	0.13	26.05	. . . .	0.33
	Weisse (2) 373	17	2.5	4.3	5.6	15.3	16.5	17.6	18.9	20.4	30.3	31.6	33.2	20 17.84	+ 0.04	26.05	10 19 51.83	0.36
	B. A. C. 3649	18	5.2	6.9	7.9	17.7	18.8	20.0	21.2	22.5	32.0	33.3	34.9	33 20.04	− 0.03	26.05	10 32 53.96	0.45
	Weisse 803	19	12.0	13.9	15.0	24.8	26.0	27.2	28.4	29.5	39.4	40.6	42.5	46 27.21	0.01	26.05	10 46 1.15	0.51
	*+9° 22′	†20	46.0	48.0	49.3	58.9	60.0	1.0	2.3	3.6	13.0	14.4	16.0	56 1.14	− 0.03	26.05	10 55 35.06	0.56
	δ Leonis	21	22.2	24.0	25.6	35.7	36.8	38.0	39.4	40.6	50.8	52.0	53.9	7 38.09	+ 0.09	26.05	. . . .	0.61
	*+38° 17′	†22	43.9	45.9	47.4	59.6	1.0	2.4	4.0	5.5	17.6	19.2	21.4	15 2.54	0.30	26.05	11 14 36.79	0.69
	*+37° 35′	23	. .	. .	. .	55.7	57.3	58.8	0.1	1.7	. .	. .	. .	26 58.72	0.36	26.05	11 26 33.03	0.75
	Lalande 21947	24	9.4	11.6	12.9	. .	. .	. .	. .	. .	42.9	44.5	46.4	27 27.95	0.23	26.05	11 27 2.13	0.76
11	α Ursæ Majoris	25	34.2	37.9	40.3	1.0	3.3	6.6	9.0	11.2	31.5	34.3	38.2	56 6.14	0.85	25.64	10 55 41.35	0.62
	δ Leonis	26	21.9	23.3	24.6	35.1	36.3	37.6	38.8	40.0	50.1	51.3	53.2	7 37.47	0.23	25.64	. . . .	0.53
	Lalande 21947	27	8.6	10.4	12.0	24.0	25.4	27.2	28.5	30.0	41.8	43.2	45.4	27 26.96	0.38	25.64	11 27 1.70	0.66
	B. A. C. 4010	28	35.9	38.0	39.5	51.8	53.1	54.7	56.2	57.7	9.9	11.3	13.8	45 54.72	0.39	25.63	11 45 29.48	0.78
	o Virginis	29	46.7	48.2	49.4	59.3	0.5	1.5	2.8	3.9	13.3	14.5	16.2	59 1.48	0.15	25.63	. . . .	0.80
	Lacaille 5073	30	1.3	3.3	4.7	16.2	17.5	19.0	20.4	21.7	32.9	34.3	36.4	7 18.88	0.07	25.62	12 6 53.33	1.18
	3 Canum Venat.	31	27.3	29.6	31.7	46.5	48.4	50.0	52.0	53.7	8.3	10.0	12.9	13 50.04	0.54	25.62	12 13 24.96	1.08
	*+5° 27′	32	54.9	56.6	57.7	7.4	8.7	9.9	10.9	12.2	21.8	22.7	24.5	25 9.75	0.12	25.62	12 24 44.25	0.93
	*+0° 57′	33	24.2	26.0	27.0	36.6	37.3	38.9	40.0	41.2	50.5	51.7	53.5	45 38.81	0.10	25.62	12 45 13.29	1.03
	Weisse 857	34	18.5	20.0	21.5	31.2	32.4	33.9	35.0	36.0	46.0	47.0	48.9	51 33.67	0.01	25.62	12 51 8.06	1.14
	θ Virginis	35	25.2	26.8	27.9	37.7	38.8	40.0	41.2	43.6	51.7	53.0	54.8	3 40.06	+ 0.06	25.62	. . . .	− 1.12
	Polaris, S. P.	36	. .	. .	. .	51.0	34.5	20.0	14.5	0.0	. .	. .	. .	11 24.00	− 15.32	25.61	. . . .	+ 34.77
	θ Bootis	37	48.7	51.3	53.5	9.4	11.3	13.3	15.3	17.0	32.4	33.9	37.0	21 13.01	+ 0.58	25.60	. . . .	− 1.83
21	υ Leonis	38	19.0	20.5	21.8	31.2	32.4	33.7	34.9	36.0	45.3	46.5	48.2	30 33.59	0.07	15.36	. . . .	0.59
	Weisse (2) 812	39	17.7	19.5	20.7	30.4	31.8	32.9	34.3	35.5	45.2	46.4	48.3	42 32.97	0.11	15.36	11 42 17.72	0.61
	B. A. C. 4010	40	25.3	27.5	29.0	41.3	42.8	44.6	45.8	47.4	59.5	0.9	3.2	45 44.30	0.42	15.36	11 45 29.36	0.63
	o Virginis	41	36.0	37.8	39.0	48.7	49.9	51.2	52.4	53.6	2.9	4.2	6.0	58 51.06	0.14	15.36	. . . .	0.71
	3 Canum Venat.	42	16.6	18.9	21.0	36.0	37.7	39.5	41.5	43.1	57.7	59.5	2.0	13 39.41	+ 0.59	15.36	12 13 24.64	− 0.90
June 17	Polaris, S. P.	43	. .	. .	. .	58.0	44.0	32.0	24.0	9.0	. .	. .	. .	33 40.0	− 19.05	4.57	. . . .	+ 7.65
	ζ Virginis	44	55.2	56.7	57.8	7.6	8.6	9.9	10.9	12.0	21.6	22.6	24.5	28 9.76	+ 0.06	4.56	13 28 9.76	− 0.99
	Weisse 866	45	38.4	40.5	42.2	54.2	55.8	57.7	58.9	0.4	12.4	13.8	16.0	41 57.30	0.44	4.55	13 41 53.19	1.01
	ι Virginis	46	3.2	4.6	6.0	15.7	16.8	18.0	19.0	20.2	30.0	31.0	32.7	9 17.93	0.02	4.54	14 9 13.41	1.24
	Weisse 314	47	56.6	58.4	59.7	9.1	10.3	11.8	12.8	14.1	23.4	24.5	26.4	18 11.55	0.08	4.53	14 18 7.10	1.23
	ε Bootis	48	7.6	9.4	10.5	21.4	22.7	24.2	25.4	26.6	37.3	38.7	40.7	39 24.05	0.31	4.52	14 39 19.84	1.31
	O. Arg. N. 14975	49	17.2	19.7	21.6	36.7	38.8	40.4	42.4	44.2	59.2	0.8	3.8	51 40.44	+ 0.64	4.51	14 51 36.57	1.57
	*−26° 17′	50	59.0	1.1	2.5	13.0	14.3	15.7	17.0	18.3	28.8	29.9	32.0	58 15.60	− 0.16	− 4.50	14 58 10.94	− 1.69

8. Thick clouds.
15. Faint.
20. Rather faint.
22. Faint.
May 5. Image west 0r.53. Clamp east.
Image west 0r.48. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Apr. 27, 11.8	− 27.15	0.000	+ 0.70	− 0.13
30, 12.5	− 25.76	+ 0.031	+ 0.55	− 0.13
May 4, 10.6	− 26.05	. . .	+ 0.55	− 0.13
11, 12.6	− 25.62	+ 0.014	+ 0.34	+ 0.09
21, 11.8	− 15.36	. . .	+ 0.40	+ 0.07
June 17, 14.8	− 4.51	+ 0.037	+ 0.46	+ 0.06

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
														m. s.	m. s.	s.	h. m. s.	s.
1870. June 17 Sk.	Lacaille 6337 . .	1	39.4	41.5	43.0	55.0	56.5	57.9	59.4	0.8	12.8	14.2	16.4	13 57.90	− 0.26	− 4.49	15 13 53.15	− 1 98
	μ^1 Bootis	2	. .	. .	. .	37.5	39.0	40.8	41.9	43.2	. .	. .	. .	19 40.48	+ 0.37	4.49	15 19 36.36	1.55
	*−25° 32′ . . .	3	. .	5.4	6.8	17.3	18.8	20.0	21.3	22.6	34.6	36.3	. .	39 20.34	− 0.16	4.48	15 39 15.70	1.83
	ε Coronæ Borealis .	4	1.8	3.2	4.9	15.6	17.0	18.4	19.7	21.0	31.6	32.8	35.0	52 18.27	+ 0.30	4.47	15 52 14.10	1.61
	B. A. C. 5333 . .	5	43.8	45.6	46.9	57.0	58.2	59.6	0.8	1.9	12.2	13.1	15.2	57 59.48	− 0.10	4.47	15 57 54.91	− 1.80
20	Polaris, S. P. . .	6	32.0	43.0	33.0	58.0	46.0	32.0	25.0	14.0	50.0	38.0	46.0	11 37.91	− 21.34	4.35	. . . .	+ 5.37
	η Bootis	7	19.2	21.0	22.4	32.4	33.6	35.0	36.4	37.5	47.2	48.5	50.4	48 34.87	+ 0.22	4.37	13 48 30.72	− 1.00
	Weisse (2) 1167 .	8	. .	. .	. .	41.0	42.4	43.6	44.9	46.2	56.2	57.8	59.5	53 48.95	− 5.14	4.37	13 53 39.44	1.03
	Weisse 314 . .	9	. .	. .	. .	8.8	9.9	11.2	12.4	13.3	. .	. .	. .	18 11.12	− 0.06	4.38	14 18 6.68	1.21
	ε Bootis	10	7.3	9.3	10.7	21.3	22.6	24.2	25.3	26.4	37.2	38.5	40.5	39 23.94	+ 0.31	4.39	14 39 19.86	1.28
	*−26° 17′ . . .	†11	59.3	1.1	2.5	13.0	14.3	15.8	17.0	18.4	28.9	30.3	32.2	59 15.71	− 0.16	4.40	14 59 11.15	1.68
	*−25° 5′ . . .	†12	. .	. .	. .	8.0	9.3	10.7	11.8	13.4	. .	. .	. .	5 10.64	0.21	4.40	15 5 6.03	1.69
	*−36° 6′ . . .	13	47.2	. .	50.7	2.7	3.6	5.7	7.3	8.7	20.2	. .	24.0	18 5.57	− 0.28	4.41	15 18 0.88	1.96
	Weisse (2) 845. .	14	49.0	51.5	54.0	6.3	7.8	9.6	11.0	12.6	25.5	27.0	29.4	35 9.43	+ 0.52	4.42	15 35 5.53	1.68
	ε Serpentis . . .	15	11.5	13.0	14.2	23.8	24.9	26.2	27.4	28.5	37.9	39.2	41.0	44 26.15	0.10	4.42	15 44 21.83	1.57
	Weisse 1081 . .	16	11.4	13.0	14.0	23.6	24.8	26.2	27.2	28.2	. .	. .	. .	56 21.05	5.07	4.43	15 56 21.69	1.60
	η Ursæ Minoris. .	17	25.0	31.9	36.8	16.9	22.3	26.5	31.2	36.7	15.2	20.3	27.6	21 26.40	2.10	4.44	16 21 24.06	4.47
	Weisse (2) 1075 .	18	25.3	27.4	29.4	41.4	43.0	44.6	46.0	47.4	59.4	0.9	3.2	34 44.36	0.45	4.45	16 34 40.36	1.86
	d Herculis . . .	19	36.7	38.6	39.9	51.4	52.8	54.3	55.8	57.2	8.3	9.7	11.9	56 54.24	+ 0.38	4.46	16 56 50.16	− 1.85
22	Polaris, S. P. . .	†20	19.0	25.0	14.0	52.0	37.0	30.0	17.0	3.0	31.0	18.0	33.0	11 25.36	− 6.91	4.42	. . . .	+ 3.64
	η Ursæ Majoris . .	21	7.3	10.0	11.7	26.8	28.3	29.9	31.9	33.9	48.9	50.5	53.2	42 30.22	+ 0.17	4.44	. . . .	− 0.97
	η Bootis	22	19.7	21.6	22.8	32.6	33.8	35.0	36.5	37.5	47.6	48.8	50.6	48 35.14	0.00	4.44	. . . .	0.98
	δ Libræ	23	53.0	54.8	55.9	5.7	6.7	7.8	9.0	10.0	20.0	21.1	22.8	54 7.89	− 0.13	4.47	14 54 3.29	1.44
	*−36° 56′ . . .	24	47.2	49.8	51.0	3.0	4.5	5.8	7.3	8.9	20.8	22.3	24.3	2 5.90	0.32	4.48	15 2 1.10	1.90
	*−37° 6′ . . .	25	47.4	49.4	50.9	1.8	3.0	4.5	6.0	7.5	19.4	21.0	23.2	13 4.92	0.32	4.48	15 13 0.12	1.96
	*−31° 49′ . . .	26	11.0	13.0	14.8	25.7	27.0	28.3	30.0	31.1	42.6	44.0	45.9	22 28.49	0.28	4.49	15 22 23.72	1.88
	O. Arg. S. 14669 .	27	40.7	42.7	44.0	54.7	55.9	57.0	58.8	59.9	10.7	12.0	13.7	27 57.28	− 0.24	4.49	15 27 52.55	1.82
	Weisse (2) 822 .	28	13.3	15.5	17.0	30.2	31.8	33.5	34.8	36.5	49.6	51.2	53.4	34 33.35	+ 0.12	4.49	15 34 28.98	1.66
	O. Arg. S. 14861 .	29	49.9	51.8	53.2	3.7	4.9	6.0	7.6	8.8	19.4	20.6	22.6	39 6.23	− 0.23	4.50	15 39 1.50	1.83
	O. Arg. S. 15199 .	30	54.9	56.7	58.0	8.0	9.3	10.5	11.7	13.0	23.5	24.7	26.5	58 10.62	0.20	4.51	15 58 5.91	1.83
	α Scorpii	31	16.6	18.6	20.2	30.4	31.8	32.9	34.5	35.7	46.5	47.8	49.5	21 33.14	− 0.24	4.52	16 21 28.38	1.97
	*−26° 11′ . . .	†32	8.4	10.7	12.3	22.7	23.8	25.1	26.3	28.0	. .	39.9	41.7	31 23.89	+ 1.09	4.52	16 31 20.46	2.00
	Weisse 794 . .	33	0.6	2.2	3.6	13.2	14.4	15.5	16.9	18.2	28.0	28.9	30.8	42 15.66	− 0.03	4.53	16 42 11.10	1.71
	κ Ophiuchi . . .	34	. .	24.0	25.2	35.0	35.9	37.2	38.3	39.6	49.3	50.5	52.3	51 38.73	1.54	4.53	16 51 32.66	1.72
	Weisse 107 . .	35	43.9	45.8	46.9	56.7	57.9	59.0	0.0	1.6	11.4	12.6	14.3	7 59.10	0.03	4.54	17 7 54.53	1.77
	Weisse (2) 486 .	36	6.5	7.7	9.1	10.6	12.6	. .	15.2	17.9	19.2	20.5	21.8	17 44.11	0.29	4.55	17 17 39.27	1.79
	*+17° 1′ . . .	37	33.8	35.6	36.8	46.9	47.8	49.0	50.4	51.4	1.7	3.0	4.0	17 49.13	0.02	4.55	17 17 44.56	1.79
	α Ophiuchi . . .	38	45.2	47.0	48.2	58.0	59.1	0.3	1.7	2.7	12.6	13.9	15.4	29 0.37	0.04	4.57	17 28 55.76	− 1.79
24	Polaris, S. P. . .	39	19.5	27.5	17.5	52.0	39.0	33.0	20.5	4.0	33.0	21.0	35.5	11 27.59	− 8.41	3.32	. . . .	+ 1.74
	η Bootis	40	18.5	20.3	21.5	31.6	32.6	33.9	35.2	36.4	46.6	47.8	49.5	48 33.99	+ 0.01	3.32	. . . .	− 0.96
	β Bootis	41	47.6	50.5	51.9	4.5	5.9	7.5	9.0	10.5	23.3	24.9	27.0	57 7.51	+ 0.14	3.30	. . . .	1.39
	*−37° 1′ . . .	42	. .	. .	. .	44.9	46.7	48.6	8.0	10.9	12.6	13.8	15.7	5 2.65	− 32.86	3.30	15 4 26.49	1.90
	*−37° 1′ . . .	43	. .	. .	. .	50.3	51.7	53.7	13.0	16.0	17.6	19.3	20.9	5 8.94	32.83	3.30	15 4 32.81	1.90
	*−32° 43′ . . .	44	0.2	2.6	3.7	15.0	16.3	17.9	19.3	20.6	32.0	33.2	35.2	24 17.82	0.29	3.30	15 24 14.23	1.90
	O. Arg. S. 15199 .	45	53.5	55.5	56.8	6.9	8.0	9.1	10.5	11.3	21.8	23.3	25.2	58 9.26	0.21	3.29	15 58 5.76	1.83
	*−33° 10′ . . .	46	31.3	33.6	34.8	46.3	47.6	48.8	50.4	51.6	3.2	4.7	6.6	23 48.99	0.30	3.29	16 23 45.40	2.13
	ζ Ophiuchi . . .	47	50.4	52.0	53.5	3.0	4.0	5.3	6.4	7.8	17.5	18.7	20.3	30 5.35	0.14	3.29	. . . .	1.79
	*−19° 19′ . . .	48	30.5	32.5	33.8	43.8	45.0	46.2	47.7	48.8	58.9	0.0	2.0	47 46.29	0.20	3.28	16 47 42.81	1.93
	*−19° 19′ . . .	49	. .	. .	. .	3.8	5.0	7.0	23.3	25.8	27.2	28.5	29.8	48 18.80	− 27.70	− 3.28	16 47 47.82	− 1.93

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
h.	s.	s.	s.	s.
June 20, 15.3	− 4.41	− 0.030	+ 0.46	+ 0.06
22, 16.1	− 4.51	− 0.030	+ 0.26	− 0.09
24, 15.1	− 3.30	+ 0.010	+ 0.29	− 0.09

11. Very faint.
12. Very faint.
20. Very steady.
June 21, 5ʰ. Image west 0ʳ.60. Clamp west.
Image west 0ʳ.75. Clamp east.
32. Very faint.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
June 28 Sk.	δ Ophiuchi	1	20.7	22.5	23.7	33.2	34.3	35.4	36.5	37.6	47.4	48.7	50.3	7 35.48	− 0.11	− 1.65	. . . .	− 1.67
	19 Scorpii	2	. .	. .	. .	50.2	51.5	52.6	53.9	55.3	. .	. .	. .	12 52.70	0.17	1.65	16 12 50.88	1.91
	ζ Ophiuchi	3	48.8	50.5	51.7	1.4	2.6	3.7	5.0	6.1	15.6	16.9	18.8	30 3.74	0.14	1.65	. . . .	1.80
	B.A.C. 5700, (1st *)	4	13.6	15.5	16.9	26.8	27.9	29.3	30.4	31.9	41.8	43.1	44.8	49 29.27	0.20	1.65	16 49 27.42	1.95
	B.A.C. 5700, (2d *)	5	. .	. .	. .	. .	. .	. .	1.5	4.1	5.6	6.9	8.2	50 5.26	− 35.78	− 1.65	16 49 27.83	1.93
July 8	α Coronæ Borealis	6	49.4	51.5	52.7	3.3	4.6	5.8	7.2	8.2	19.4	20.5	22.5	29 5.92	+ 0.03	+ 6.49	15 29 12.44	1.36
	α Serpentis	7	32.2	34.0	35.2	44.5	45.6	46.9	48.2	49.2	58.9	0.1	1.8	37 46.96	− 0.03	6.49	15 37 53.42	1.45
	19 Scorpii	8	28.3	30.3	31.5	42.0	43.3	44.5	45.8	47.2	57.3	58.8	0.4	12 44.49	0.25	6.52	16 12 50.76	1.89
	*−33° 10′	9	21.5	23.6	25.3	36.0	37.9	39.2	40.4	41.8	53.5	55.0	56.7	23 39.17	0.33	6.53	16 23 45.37	2.11
	ζ Ophiuchi	10	40.6	42.3	43.6	53.2	54.2	55.4	56.7	57.9	7.3	8.8	10.5	29 55.50	. .	. .	16 30 1.87	1.78
	B.A.C. 5992	11	13.5	15.5	16.9	26.9	28.1	29.3	30.5	32.0	42.2	43.6	45.3	36 29.44	0.24	6.59	17 36 35.79	2.12
	B.A.C. 6026, (1st *)	12	29.3	31.3	32.8	43.6	45.0	46.3	47.9	49.1	0.1	1.4	3.4	42 46.38	0.31	6.59	17 42 52.66	2.28
	B.A.C. 6026, (2d *)	13	5.1	6.2	7.9	9.4	11.9	. .	21.2	24.3	25.6	27.1	28.7	42 46.74	0.61	6.59	17 42 52.72	2.28
	B.A.C. 6071	14	36.6	38.2	39.6	49.0	50.2	51.3	52.7	53.9	3.4	4.6	6.1	49 51.42	0.13	6.60	17 49 57.89	1.94
	*−37° 29′	15	49.8	52.1	53.4	5.3	6.7	8.3	9.7	11.2	23.3	24.7	26.9	57 8.31	0.37	6.61	17 57 14.55	2.49
	*−37° 29′	16	30.9	32.8	34.4	36.2	38.7	. .	54.4	57.4	58.9	0.6	2.1	57 46.64	0.69	6.61	17 57 52.56	2.49
	μ^1 Sagittarii	17	39.2	41.2	42.3	52.7	53.8	55.0	56.4	57.6	7.8	9.0	10.9	5 55.08	0.24	6.62	18 6 1.46	2.14
	1 Aquilæ	18	48.7	50.3	51.4	1.0	2.3	3.4	4.7	5.9	15.3	16.7	18.4	28 3.46	− 0.15	+ 6.62	18 28 9.93	2.02
13	α Coronæ Borealis	19	21.2	23.2	24.5	35.0	36.1	. .	39.0	40.2	51.0	52.4	54.3	29 37.69	+ 0.02	−25.37	. . . .	1.30
	α Serpentis	20	3.9	5.7	6.9	16.6	17.5	18.8	20.0	21.2	30.8	32.0	33.6	38 18.82	− 0.08	25.37	. . . .	1.41
	Lacaille 6686	21	13.1	15.2	16.8	28.5	30.0	31.4	32.8	34.2	46.2	47.6	49.6	58 31.40	− 0.36	25.38	15 58 5.66	2.03
16	α Coronæ Borealis	22	20.3	22.3	23.6	34.1	35.6	37.0	38.4	39.5	50.3	51.6	53.4	29 36.92	+ 0.03	24.61	. . . .	1.27
	α Serpentis	23	3.2	4.9	6.2	15.8	16.8	18.0	19.0	20.2	29.9	31.2	32.8	38 18.00	− 0.08	24.62	. . . .	1.39
	B. A. C. 5630	24	22.4	24.5	26.0	37.0	38.4	39.6	41.1	42.5	53.8	55.2	57.1	41 39.78	0.31	24.62	16 41 14.85	2.10
	*−35° 12′	25	2.4	4.8	6.2	17.7	19.2	20.4	22.0	23.6	35.4	36.8	38.7	14 20.65	0.35	24.65	17 13 55.65	2.32
	*−32° 26′	26	. .	39.0	40.5	42.0	44.7	. .	55.7	58.6	0.2	1.3	. .	26 20.25	0.63	24.65	17 25 54.97	2.29
	*−32° 26′	27	5.2	7.2	8.7	19.9	21.2	22.6	24.1	25.4	36.9	38.2	40.0	26 22.67	0.32	24.65	17 25 57.70	2.29
	*−32° 26′ ±	28	18.0	19.2	20.8	22.3	25.0	. .	35.7	38.6	40.0	41.3	42.9	(27) 0.38	0.63	24.65	17 (26) 35.10	2.30
	*−32° 26′	29	52.6	54.7	56.0	7.2	8.4	9.8	11.4	12.7	24.0	25.2	27.4	(27) 9.95	0.32	24.65	17 (26) 44.98	2.30
	B.A.C. 6026, (1st *)	30	0.6	2.7	3.9	14.9	16.1	17.6	19.0	20.4	31.6	32.8	34.8	43 17.67	0.31	24.66	17 42 52.70	2.30
	B.A.C. 6026, (2d *)	31	. .	37.7	39.3	40.7	43.2	. .	52.8	55.6	57.0	58.4	. .	43 18.09	0.60	24.66	17 42 52.83	2.30
	B. A. C. 6071	32	7.9	9.7	10.8	20.3	21.4	22.6	24.0	25.0	34.6	35.8	37.4	50 22.68	0.13	24.66	17 49 57.89	1.96
	*+ 2° 32′	33	1.0	2.6	3.8	13.3	14.5	15.6	17.0	18.2	27.4	28.7	30.5	1 15.69	0.10	24.66	18 0 50.93	1.94
	*−18° 40′	34	4.0	5.9	7.1	17.0	18.2	19.5	20.8	22.1	32.0	33.3	35.2	8 19.55	− 0.22	24.67	18 7 54.66	2.15
	δ Ursæ Minoris	35	. .	. .	. .	15.5	. .	53.0	. .	34.5	. .	. .	. .	14 54.33	+ 4.24	24.67	. . . .	17.14
	*−31° 9′	36	. .	48.2	49.7	0.7	2.0	3.5	4.8	6.2	17.3	18.7	. .	43 3.46	− 0.31	24.68	18 42 38.47	2.45
	δ Aquilæ	37	8.9	10.4	11.6	. .	22.1	23.2	24.6	25.8	35.4	36.5	38.2	19 23.67	0.34	24.69	. . . .	2.05
18	ε Serpentis	38	31.5	33.3	34.5	44.0	45.1	46.2	47.5	48.7	58.2	59.3	1.1	44 46.31	0.09	24.56	15 44 21.66	1.42
	Lacaille 6686	39	12.2	14.4	15.8	27.8	29.0	30.5	32.0	33.4	45.4	46.8	49.0	58 30.57	0.36	24.56	15 58 5.65	1.98
	δ Ophiuchi	40	43.6	45.4	46.5	56.0	57.1	58.3	59.6	0.8	10.3	11.5	13.0	7 58.37	0.13	24.57	16 7 33.67	1.58
	ζ Ophiuchi	41	11.6	13.4	14.7	24.2	25.1	26.4	27.7	29.0	38.8	39.9	41.5	30 26.57	0.16	24.57	16 30 1.84	1.74
	*+2° 32′	42	. .	40.9	42.3	43.6	45.6	. .	45.8	48.3	49.6	50.7	. .	1 15.85	− 0.38	24.60	18 0 50.87	1.94
	*+2° 32′	43	1.0	2.8	3.9	13.3	14.4	15.6	17.0	18.1	. .	. .	. .	1 10.76	+ 4.87	24.60	18 0 51.03	1.94
	μ^1 Sagittarii	44	10.4	. .	13.8	23.7	25.0	26.3	27.6	28.8	39.1	40.3	42.2	6 27.72	− 1.61	24.60	18 6 1.51	2.18
	δ Ursæ Minoris	45	. .	. .	. .	14.0	. .	52.5	. .	33.5	. .	. .	. .	14 53.33	+ 4.24	24.61	. . . .	16.80
	β Lyræ	46	25.9	28.0	29.4	40.5	41.8	43.4	45.0	46.3	57.8	59.2	1.1	45 43.49	+ 0.07	24.62	. . . .	2.12
Aug. 2 Y.	ζ Ophiuchi	47	7.8	. .	10.8	20.5	21.6	22.7	23.9	25.0	34.8	36.1	37.7	30 24.09	− 1.48	20.91	16 30 1.70	1.61
	κ Ophiuchi	48	38.6	40.4	41.6	51.2	52.3	53.5	54.8	55.8	5.6	6.8	8.5	51 53.55	0.08	20.91	16 51 32.56	1.55
	O. Arg. S. 16834	49	. .	. .	. .	. .	. .	. .	. .	. .	9.8	10.9	12.6	22 11.10	− 13.96	−20.92	17 21 36.22	− 1.95

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
June 28, 16.3	− 1.65	+ 0.010	+ 0.29	− 0.09
July 8, 16.8	+ 6.55	+ 0.050	+ 0.30	− 0.11
13, 15.6	− 25.37	− 0.020	+ 0.30	− 0.11
16, 16.8	− 24.64	− 0.020	+ 0.30	− 0.11
18, 16.8	− 24.58	− 0.020	+ 0.30	− 0.11

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
1870.														m. s.	m. s.	s.	h. m. s.	s.
Aug. 2 Y.	μ Herculis . . .	1	28.0	30.2	31.5	42.1	43.4	44.8	46.2	47.6	58.4	59.7	1.6	40 44.86	0.00	−20.92	17 40 23.94	− 1.74
	Weisse 929 . . .	2	33.6	35.5	36.6	46.2	47.4	48.6	49.7	50.9	0.5	1.7	3.4	46 48.55	− 0.09	20.92	17 46 27.54	1.80
	Weisse(2)1601,(1st*)	3	49.5	51.5	52.7	. .	. .	. .	. .	. .	17.6	18.8	20.6	51 5.12	− 0.09	20.92	17 50 44.11	1.80
	Weisse(2)1601,(2d*)	4	. .	. .	. .	2.8	3.9	5.0	6.4	7.6	. .	. .	. .	51 5.14	+ 0.02	20.92	17 50 44.24	1.80
	*+2° 32′ . . .	5	45.0	46.9	48.0	. .	. .	. .	. .	. .	11.7	12.9	14.6	(1) 59.85	− 0.16	20.92	18 (1) 38.77	1.89
	*+2° 33′ . . .	6	. .	. .	. .	54.8	55.9	57.2	58.5	59.6	. .	. .	. .	(1) 57.20	0.05	20.92	18 (1) 36.23	1.89
	μ Sagittarii . . .	7	6.7	8.8	10.0	20.1	21.3	22.5	23.8	25.1	35.3	36.7	38.4	6 22.61	0.23	20.92	18 6 1.46	2.14
	*−18° 40′ . . .	8	0.1	1.9	3.3	13.2	14.4	15.5	16.9	18.2	28.3	29.5	31.2	8 15.68	− 0.21	20.92	18 7 54.55	2.11
	δ Ursæ Minoris . .	9	. .	. .	. .	7.5	26.5	46.5	8.5	26.0	. .	. .	. .	14 47.00	+ 3.43	20.92	. . . .	13.09
	O. Arg. S. 18489 .	10	51.0	53.0	54.2	4.3	5.4	6.5	7.8	9.0	19.2	20.4	22.0	31 6.62	− 0.21	20.93	18 30 45.48	2.18
	O. Arg. S. 18587 .	11	54.9	56.8	58.2	8.3	9.4	10.8	12.0	13.1	23.5	24.8	26.5	36 10.75	0.23	20.93	18 35 49.59	2.23
	*−31° 9′ . . .	12	10.0	12.0	13.5	24.6	25.6	27.1	28.7	29.9	41.2	42.5	44.5	44 27.24	0.30	20.93	18 44 6.01	2.44
	*− 8° 47′ . . .	13	11.1	12.8	14.0	. .	. .	. .	. .	. .	38.0	39.2	40.8	57 25.98	0.21	20.93	18 57 4.84	2.13
	Weisse 1430 . .	14	. .	. .	. .	28.3	29.3	30.5	31.6	32.8	42.5	43.8	45.4	57 35.52	5.15	20.93	18 57 9.44	2.13
	24 Aquilæ . . .	15	20.1	22.0	23.2	32.6	33.8	34.9	36.2	37.3	46.8	48.1	49.8	12 34.98	0.12	20.93	19 12 13.93	2.10
	δ Aquilæ	16	4.9	6.9	7.9	17.4	18.4	19.6	20.9	22.1	31.6	32.9	34.5	19 19.74	0.11	20.93	19 18 58.70	2.11
	*−27° 21′ . . .	17	53.9	56.0	57.1	. .	. .	. .	. .	. .	23.7	25.2	27.0	26 10.48	0.32	20.93	19 25 49.23	2.43
	*−27° 21′ . . .	18	. .	. .	. .	9.3	10.6	11.8	13.1	14.5	. .	. .	. .	26 11.86	0.21	20.93	19 25 50.72	2.43
6	κ Ophiuchi . . .	19	37.8	39.7	40.9	50.3	51.4	52.6	53.9	55.0	4.8	6.0	7.7	51 52.74	0.06	20.26	. . . .	1.50
	*−28° 43′ . . .	20	41.2	43.2	44.5	55.3	56.4	57.7	59.1	0.5	11.4	12.6	14.6	56 57.86	0.32	20.26	16 56 37.28	1.93
	B. A. C. 5782 . .	21	21.3	23.7	25.2	37.4	38.9	40.4	41.9	43.2	55.8	57.4	59.6	3 40.44	0.43	20.26	17 3 19.75	2.20
	δ Ursæ Minoris . .	22	. .	. .	. .	. .	. .	. .	. .	. .	6.5	26.0	51.5	18 28.00	3 40.03	20.26	. . . .	11.89
	1 Aquilæ	23	15.6	17.4	18.5	28.0	29.0	30.2	31.4	32.6	42.4	43.6	45.2	28 30.35	0.17	20.26	. . . .	2.04
8	κ Ophiuchi . . .	24	37.5	39.4	40.6	50.0	51.0	52.4	53.6	54.9	4.4	5.6	7.4	51 52.44	0.06	20.00	. . . .	1.48
	*−28° 43′ . . .	25	40.8	43.1	44.0	54.9	56.2	57.3	58.8	0.0	11.0	12.4	14.4	56 57.54	0.32	20.00	16 56 37.22	1.91
	B. A. C. 5782 . .	26	21.0	23.4	24.9	37.0	38.3	39.8	41.5	42.9	55.5	57.0	59.0	3 40.03	0.44	20.00	17 3 19.59	2.16
	Weisse 107. . .	27	59.0	0.9	2.0	11.7	12.9	14.0	15.4	16.6	26.6	27.7	29.6	8 14.22	0.03	20.00	17 7 54.19	1.54
	α^1 Herculis . . .	28	49.5	51.5	52.6	2.3	3.6	4.7	6.0	7.3	17.0	18.4	19.9	9 4.80	− 0.03	20.00	. . . .	1.55
	δ Ursæ Minoris. .	29	. .	. .	. .	4.0	23.0	42.0	4.5	23.0	. .	. .	. .	14 43.30	+ 4.76	20.00	. . . .	11.21
17 Sk.	κ Ophiuchi . . .	30	35.0	36.8	37.9	47.5	48.6	49.8	51.0	52.1	2.0	3.1	4.6	51 49.85	− 0.07	17.51	16 51 32.27	1.35
	d Herculis . . .	31	49.4	51.6	53.0	4.4	5.7	7.2	8.6	9.9	21.5	22.9	24.9	57 7.19	+ 0.07	17.51	16 56 49.75	1.25
	α^1 Herculis . . .	32	47.0	48.8	50.0	59.7	0.8	2.0	3.5	4.5	14.4	15.7	17.3	9 2.15	− 0.04	17.51	17 8 44.60	1.42
	Lalande 31543. .	33	5.6	7.4	8.5	18.6	19.6	20.8	22.2	23.4	33.6	34.8	36.2	15 20.97	0.24	17.52	17 15 3.21	1.73
	*−32° 4′ . . .	34	. .	11.9	13.2	14.8	17.4	. .	28.1	31.0	32.6	34.0	. .	31 52.88	0.66	17.52	17 31 34.70	2.03
	*−32° 4′ . . .	35	45.0	47.2	48.7	59.7	0.9	2.5	4.0	5.4	15.4	17.3	20.0	32 2.37	0.37	17.52	17 31 44.48	2.03
	B. A. C. 5992 . .	36	37.4	39.3	40.6	50.8	51.9	53.2	54.6	55.7	6.3	7.6	9.4	36 53.35	0.28	17.52	17 36 35.55	1.89
	B. A. C. 6163 . .	37	28.0	30.0	31.3	42.1	43.2	44.5	46.0	47.2	58.0	59.4	1.5	4 44.65	0.33	17.53	18 4 26.79	2.12
	δ Ursæ Minoris . .	38	. .	. .	. .	. .	17.0	37.0	58.5	17.5	. .	. .	. .	14 47.50	5.29	17.54	. . . .	8.33
	1 Aquilæ	39	12.8	14.5	15.6	25.2	26.2	27.5	28.8	29.8	39.5	40.9	42.5	28 27.57	− 0.18	17.54	18 28 9.85	1.96
	β Lyræ . . .	40	18.5	20.6	22.1	33.4	34.7	36.0	37.5	39.0	50.3	51.8	53.8	45 36.15	+ 0.07	17.55	18 45 18.67	1.89
	24 Aquilæ	41	16.9	18.6	19.8	29.3	30.3	31.5	32.8	33.9	43.5	44.8	46.3	12 31.61	− 0.13	17.56	19 12 13.92	2.04
	δ Aquilæ	42	1.5	3.4	4.5	14.0	15.1	16.2	17.5	18.7	28.1	29.4	31.1	19 16.32	− 0.11	17.56	19 18 58.65	2.06
	β Aquilæ	43	0.6	2.3	3.5	13.1	14.2	15.4	16.6	. .	27.4	28.6	30.2	49 15.19	+ 0.14	17.57	19 48 57.76	2.11
18 Y.	κ Ophiuchi . . .	44	34.8	36.6	38.0	47.4	48.6	49.7	51.0	52.2	1.9	3.2	4.8	51 49.84	− 0.07	17.51	16 51 32.26	1.34
	α^1 Herculis . . .	45	46.9	48.7	49.9	59.7	0.8	2.0	3.4	4.6	14.3	15.7	17.5	9 2.14	0.04	17.50	17 8 44.60	1.41
	Lalande 31543 .	46	5.4	7.4	8.7	18.4	19.6	20.9	22.1	23.4	33.5	34.6	36.4	15 20.95	0.24	17.50	17 15 3.21	1.71
	*−31° 31′ . . .	47	15.1	17.0	18.4	29.4	30.5	31.9	33.5	34.6	46.1	47.4	49.4	18 32.12	0.37	17.50	17 18 14.25	1.93
	O. Arg. S. 16842 .	48	4.8	6.8	8.0	17.8	18.9	20.1	21.4	22.5	32.8	33.8	35.5	22 20.22	0.23	17.50	17 22 2.49	1.72
	O. Arg. S. 16908 .	49	55.6	57.6	58.7	8.5	9.6	10.9	12.1	13.4	23.3	24.6	26.3	25 10.96	0.23	17.50	17 24 53.23	1.74
	*−37° 19′ . . .	50	7.0	9.4	10.8	22.7	24.0	25.7	27.0	28.5	40.8	42.1	44.3	29 25.66	− 0.42	−17.50	17 29 7.74	− 2.11

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Aug. 2, 17.7	− 20.92	− 0.008	+ 0.26	− 0.12
6, 17.7	− 20.26	. .	+ 0.34	− 0.12
8, 17.0	− 20.00	. .	+ 0.34	− 0.12
17, 18.4	− 17.54	− 0.020	+ 0.34	− 0.13

August 6. Battery works very badly.
8. Battery breaks down.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h. m. s.	s.
1870. Aug. 18 Y.	B. A. C. 5960 . .	1	. .	. .	. .	49.9	51.2	52.5	53.8	55.3	6.7	8.0	10.0	31 58.42	— 6.19	−17.50	17 31 34.73	— 2.02
	*−32° 4′ . . .	2	. .	. .	. .	. .	. .	. .	29.5	32.5	33.9	35.4	36.8	32 33.62	39.99	17.50	17 31 36.13	2.02
	*−32° 4′ . . .	†3	. .	. .	. .	49.0	50.6	52.4	10.7	13.6	15.0	16.4	17.9	33 5.69	30.99	17.50	17 32 17.20	2.02
	*−23° 36′ . . .	4	56.9	58.8	0.2	10.5	11.7	12.9	14.3	15.5	26.1	27.2	29.0	57 13.01	0.29	17.49	17 56 55.23	2.00
	*−28° 16′ . . .	5	21.6	23.8	25.0	35.8	36.8	38.2	39.7	40.9	51.9	53.3	55.1	4 38.37	0.34	17.48	18 4 20.55	2.11
	B. A. C. 6163 . .	6	27.8	29.9	31.2	42.0	43.2	44.5	45.8	47.2	58.0	59.4	1.3	4 44.57	0.34	17.48	18 4 26.75	2.11
	*−18° 59′ . . .	†7	50.1	52.1	53.3	3.3	4.4	5.8	7.0	8.2	18.3	19.5	20.3	7 5.66	0.25	17.48	18 6 47.93	1.98
	*−28° 46′ . . .	8	10.0	12.0	13.2	24.0	25.4	26.7	28.1	29.3	40.4	41.6	43.5	10 26.75	0.34	17.48	18 10 8.93	2.15
	*−29° 36′ . . .	9	10.3	12.4	13.6	. .	. .	. .	. .	. .	40.9	42.2	44.2	16 27.27	0.40	17.48	18 16 9.39	2.19
	*−29° 36′ . . .	10	. .	. .	. .	26.0	27.4	28.6	30.1	31.5	. .	. .	. .	16 28.72	0.29	17.48	18 16 10.95	2.19
	B. A. C. 6219 . .	11	22.4	24.5	25.8	36.8	38.1	39.4	40.8	42.1	53.3	54.5	56.6	18 39.48	0.35	17.48	18 18 21.65	2.22
	(*18) Washington.	12	24.6	26.7	28.0	38.3	39.4	40.6	41.9	43.2	53.7	54.9	56.7	20 40.73	0.21	17.48	18 20 23.04	2.09
	1 Aquilæ	13	. .	25.1	26.3	27.5	28.7	29.9	57.9	0.4	1.7	3.0	4.2	28 44.47	17.13	17.48	18 28 9.86	— 1.95
	51 Cephei, S. P. .	14	. .	. .	. .	7.0	29.5	56.5	20.0	42.0	. .	. .	. .	38 55.00	5.50	17.47	. . . .	+ 10.19
	δ Aquilæ	15	1.4	3.3	4.5	13.8	14.9	16.0	17.4	18.6	28.1	29.2	30.9	19 16.19	0.11	17.46	19 18 58.62	— 2.05
	*−27° 24′ . . .	16	47.4	49.1	50.4	1.2	2.4	3.6	5.0	6.4	17.6	18.6	20.0	29 3.79	0.30	17.46	19 28 46.03	2.40
	*−39° 45′ . . .	17	43.4	45.7	47.4	59.8	1.1	2.6	4.2	5.9	18.3	19.7	21.9	38 2.73	0.45	17.45	19 37 44.83	2.72
	γ Aquilæ	18	9.3	11.2	12.3	21.9	23.1	24.2	25.5	26.7	36.4	37.6	39.3	40 24.32	0.07	17.45	19 40 6.80	2.08
19 Sk.	α^1 Herculis . . .	19	46.4	48.3	49.4	59.2	0.3	1.5	3.0	4.3	14.0	15.3	17.0	9 1.70	0.04	17.01	17 8 44.65	1.39
	b Ophiuchi . . .	20	28.8	30.8	32.0	42.4	43.6	44.8	46.2	47.4	58.1	59.3	1.1	18 44.95	0.30	17.01	17 18 27.64	1.81
	B. A. C. 5919 . .	21	54.2	56.0	57.1	6.6	7.7	8.9	10.1	11.2	20.9	22.0	23.6	25 8.94	0.11	17.00	17 24 51.83	1.55
	*−37° 40′ . . .	22	32.6	35.0	36.4	48.5	49.8	51.3	52.9	54.2	6.5	7.9	10.0	3 51.37	0.44	16.99	18 3 33.94	2.29
	*−28° 45′ . . .	23	46.1	48.2	49.6	0.4	1.6	2.9	4.4	5.7	16.6	17.9	19.8	40 3.02	0.34	16.96	19 39 45.72	2.45
	β Aquilæ	24	0.0	1.6	3.0	12.7	13.5	14.7	16.0	17.1	26.6	28.0	29.6	49 14.80	0.09	16.96	19 48 57.75	2.10
	λ Ursæ Minoris . .	25	. .	. .	. .	5.0	0.0	2.0	11.0	11.0	. .	. .	. .	55 5.80	8.22	16.95	. . . .	46.44
	α^2 Capricorni. . .	26	54.8	56.6	57.8	7.4	8.5	9.7	11.2	12.1	22.0	23.2	24.8	11 9.83	0.21	16.95	20 10 52.67	2.29
	*+14° 14′ . . .	27	58.3	0.2	1.4	11.0	12.1	13.4	14.6	16.0	25.7	27.0	28.6	28 13.48	0.05	16.94	20 27 56.49	2.20
24	ζ Aquilæ	28	30.7	32.5	33.8	43.5	44.7	45.8	47.2	48.3	58.2	59.2	1.0	59 45.90	0.05	17.93	. . . .	1.87
	δ Aquilæ	29	1.8	3.6	4.7	14.0	15.2	16.6	17.9	18.9	28.6	29.8	31.4	19 16.59	0.11	17.93	. . . .	2.01
	λ Ursæ Minoris. .	30	. .	. .	. .	3.0	0.0	57.0	8.0	7.0	. .	. .	. .	55 3.00	8.22	17.93	. . . .	41.85
25 Y.	α^1 Herculis . . .	31	46.4	48.3	49.5	59.0	0.3	1.5	2.9	4.0	13.9	15.0	16.8	9 1.60	0.07	17.02	. . . .	1.29
	θ Ophiuchi . . .	32	4.3	6.4	7.6	18.0	19.2	20.5	21.8	23.1	33.7	35.0	36.8	14 20.58	0.26	17.02	17 14 3.30	1 69
	O. Arg. S. 17466 .	33	57.5	59.5	0.7	11.0	12.3	13.6	14.9	16.2	26.8	28.0	29.9	53 13.67	0.25	17.02	17 52 56.40	1.89
	O. Arg. S. 17467 .	34	. .	. .	. .	35.6	36.9	38.5	55.6	58.3	59.7	1.1	2.4	53 51.01	28.70	17.02	17 53 5.29	1.89
	O. S. 17539. . .	35	. .	. .	. .	10.7	11.8	13.0	14.4	15.7	26.2	27.5	29.2	56 18.56	5.67	17.02	17 55 55.87	1.91
	O. S. 17540. . .	36	. .	. .	. .	. .	. .	. .	50.8	53.5	54.8	56.2	57.5	56 54.56	37.10	17.02	17 56 0.44	1.91
	*−37° 40′ . . .	37	17.0	19.4	20.7	32.7	34.0	35.5	37.1	38.7	50.8	52.4	54.4	5 35.70	0.35	17.02	18 5 18.33	2.21
	*−37° 42′ . . .	38	. .	. .	. .	8.6	10.2	12.1	21.7	24.9	26.3	28.0	29.6	6 20.18	33.14	17.02	18 5 30.02	2.21
	η Serpentis . . .	39	39.1	40.9	42.0	51.4	52.6	53.7	55.0	56.2	5.7	7.0	8.6	14 53.84	— 0.14	17.02	. . . .	0.32
	B. A. C. 6219 . .	40	21.7	23.8	25.2	36.1	37.4	38.7	40.1	41.5	. .	. .	. .	18 33.06	+ 5.47	17.02	18 18 21.51	2.12
	*−33° 2′ . . .	41	53.8	55.9	57.3	8.5	9.9	11.3	12.9	14.2	25.7	27.0	29.0	24 11.41	— 0.31	17.02	18 23 54.08	2.21
	O. Arg. S. 18489 .	42	46.9	49.0	50.1	59.9	1.1	2.3	3.7	4.9	15.0	16.2	18.1	31 2.47	0.22	17.02	18 30 45.23	1.99
	O. Arg. S. 18587 .	43	50.8	52.7	54.0	4.1	. .	6.4	7.9	9.1	19.4	20.6	22.4	36 6.74	0.36	17.02	18 35 49.36	— 2.05
	51 Cephei, S. P. .	44	. .	. .	. .	. .	. .	. .	. .	. .	59.0	23.0	0.5	42 7.38	3 14.36	17.03	. . . .	+ 6.88
	b Ophiuchi . . .	45	28.8	30.8	32.1	42.2	43.5	44.7	46.0	47.2	57.8	59.0	0.9	18 44.82	0.25	17.11	17 18 27.46	— 1.69
	B. A. C. 5919 . .	46	54.2	55.8	57.2	6.5	7.6	8.8	10.0	11.2	20.7	21.9	23.6	25 8.86	0.12	17.11	17 24 51.63	1.45
	*−22° 52′ . . .	†47	29.4	31.7	32.2	42.7	44.1	45.4	46.7	47.7	58.3	59.6	1.7	41 45.41	— 0.24	17.11	17 41 28.06	1.80
	*−31° 13′ . . .	48	. .	7.3	8.9	10.3	12.9	23.9	25.6	27.2	. .	. .	. .	51 16.59	+ 27.94	17.11	17 51 27.42	1.98
	δ Ursæ Minoris . .	49	. .	57.0	17.5	. .	. .	. .	. .	. .	. .	. .	. .	11 7.25	+ 3 30.89	17.11	. . . .	4.91
	(*18) Washington.	50	24.5	26.3	27.5	37.8	39.0	40.0	41.6	42.7	53.2	54.5	56.2	20 40.30	— 0.24	−17.11	18 20 22.95	— 1.99

3. Minute uncertain.
7. Faint.
August 18, 8h. Image west or.23. Clamp east.
Image west or.27. Clamp west.
47. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Aug. 18. 18.3	− 17.48	+ 0.020	+ 0.34	− 0.13
19, 18.6	− 16.98	+ 0.020	+ 0.34	− 0.13
24, 19.1	− 17.93	+ 0.020	+ 0.24	− 0.13
25, 17.6	− 17.02	− 0.005	+ 0.24	− 0.13

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h. m. s.	s.
1870. Aug. 26 Sk.	ι Aquilæ. . . .	1	12.0	13.9	15.2	24.6	25.8	26.8	28.1	29.2	39.2	40.3	42.1	28 27.02	− 0.17	−17.11	18 28 9.74	− 1.85
	β Lyræ	2	17.9	20.2	21.3	32.9	34.2	35.5	37.2	38.5	50.0	51.4	53.2	45 35.66	0.00	17.12	18 45 18.54	1.74
	ζ Aquilæ. . . .	3	29.8	32.0	33.0	42.6	43.9	45.0	46.4	47.4	57.2	58.5	0.3	59 45.10	0.08	17.12	18 59 27.90	1.84
	*−40° 3′ . . .	4	. .	. .	. .	. .	. .	. .	18.3	21.8	23.1	24.9	26.5	29 22.92	44.22	17.12	19 28 21.58	2.64
	γ Aquilæ. . . .	5	8.9	10.9	12.0	21.6	22.7	23.8	25.1	26.3	36.2	37.3	39.1	40 23.99	− 0.09	17.12	19 40 6.78	2.03
	λ Ursæ Minoris. .	6	. .	. .	. .	11.0	3.0	0.0	11.0	10.0	. .	. .	. .	55 7.00	+ 8.80	17.12	. . . .	40.08
	*−0° 3′. . . .	7	43.2	45.0	46.3	55.7	56.8	57.9	59.3	0.4	10.0	11.0	12.7	27 58.03	− 0.13	17.12	20 27 40.78	2.23
	*−0° 3′. . . .	8	46.8	48.8	49.9	59.3	0.3	1.5	2.8	3.9	13.4	14.6	16.2	28 1.59	0.13	17.12	20 27 44.34	2.23
	Weisse 851 . .	9	11.9	13.7	14.9	24.4	25.5	26.6	27.8	29.2	38.8	40.1	41.5	34 26.76	0.17	17.12	20 34 9.47	2.26
	μ Aquarii . . .	10	43.0	44.8	46.0	55.8	56.9	58.0	59.1	0.4	10.0	11.2	12.9	45 58.01	0.18	17.13	20 45 40.70	2.29
	Weisse 1269 . .	11	36.1	37.8	38.9	48.5	49.6	50.7	52.0	53.2	2.7	3.8	5.5	50 50.80	− 0.13	17.13	20 50 33.54	2.25
	61¹ Cygni	12	5.2	6.6	9.1	21.0	22.4	24.0	25.8	27.0	39.3	40.7	42.9	1 24.00	+ 0.02	17.13	21 1 6.89	2.43
	ξ Aquarii . . .	13	54.5	56.3	57.0	7.0	8.1	9.3	10.6	11.8	21.5	22.5	24.2	31 9.35	− 0.17	17.13	21 30 52.05	2.34
Sept. 3 Y.	Weisse(2)1601,(1st*)	14	46.0	48.0	49.2	. .	. .	. .	. .	. .	14.2	15.4	17.2	51 1.67	0.12	17.98	17 50 43.57	1.35
	Weisse(2)1601,(2d*)	15	. .	. .	. .	59.3	0.4	1.6	3.0	4.3	. .	. .	. .	51 1.72	0.01	17.98	17 50 43.73	− 1.35
	Moon I.	16	18.6	20.5	21.9	32.3	33.5	34.9	36.3	37.5	48.3	49.6	51.7	57 35.01	0.25	17.98	17 57 16.78	
	51 Cephei, S. P. . .	17	. .	. .	. .	13.0	37.0	2.0	26.0	49.0	. .	. .	. .	39 1.40	− 3.28	17.96	. . . .	+ 2.83
	β Lyræ	18	18.6	. .	22.3	33.4	34.8	36.1	37.7	39.2	50.7	. .	53.9	45 36.30	+ 0.01	17.95	18 45 18.36	− 1.60
	κ Aquilæ. . . .	19	59.1	. .	2.2	11.6	12.6	13.8	15.1	16.3	26.0	. .	28.8	30 13.94	− 0.15	17.93	19 29 55.86	2.01
	*−39° 7′ . . .	20	23.0	25.1	26.3	38.8	40.1	41.6	43.2	44.8	57.2	59.0	0.9	0 41.82	0.37	17.91	20 0 23.54	2.63
	α² Capricorni. . .	21	55.6	. .	58.7	8.2	9.4	10.5	11.8	13.0	22.8	. .	25.8	11 10.64	− 0.18	17.91	20 10 52.55	2.20
	*−0° 3′. . . .	22	44.0	45.6	46.9	56.2	57.3	58.5	59.8	0.8	. .	. .	. .	26 53.64	+ 4.82	17.90	20 26 40.56	2.15
	O. Arg. S. 20654 .	23	7.4	9.2	10.4	20.8	21.7	23.0	24.4	25.8	35.9	37.0	39.0	30 23.15	− 0.25	17.90	20 30 5.00	2.36
	Weisse 851 . .	24	12.1	14.4	15.5	25.1	26.2	27.4	28.6	29.8	39.5	40.6	42.4	34 27.42	0.17	17.90	20 34 9.35	2.22
	*+36° 8′ . . .	25	59.4	1.5	3.0	14.7	16.1	17.6	19.0	20.6	32.3	33.9	35.9	20 17.64	0.00	17.87	21 19 59.77	2.42
	*+36° 8′ . . .	26	. .	. .	. .	45.6	47.0	48.6	50.0	51.4	3.5	4.8	7.0	20 54.74	6.12	17.87	21 20 30.75	2.42
	ξ Aquarii . . .	27	55.2	. .	58.2	7.7	8.8	10.0	11.3	12.4	22.2	. .	25.0	31 10.09	0.16	17.86	21 30 52.07	2.34
	*−35° 39′ . . .	28	7.9	10.2	11.3	23.1	24.3	26.0	27.3	28.8	40.6	41.9	43.7	44 25.92	0.35	17.86	21 44 7.71	2.71
	*−6° 1′ . . .	29	. .	. .	. .	. .	. .	. .	2.8	6.0	7.5	9.0	10.7	45 7.20	33.93	17.86	21 44 15.41	2.34
	*−5° 25′ . . .	30	38.3	40.0	41.4	50.8	52.0	53.2	54.4	55.5	5.2	6.3	8.0	49 53.19	0.16	17.85	21 49 35.18	2.35
	α Aquarii . . .	31	11.9	. .	15.0	24.3	25.5	26.7	27.9	29.0	38.5	. .	41.5	59 26.70	0.12	17.85	21 59 8.73	2.34
5 Sk.	*−38° 39′ . . .	32	36.6	38.5	40.3	52.0	53.7	55.0	56.7	58.2	10.7	11.9	14.1	15 55.25	0.37	17.69	18 15 37.19	2.09
	−38 39′ . . .	33	. .	. .	. .	. .	. .	. .	58.4	1.5	3.2	5.3	6.9	17 3.06	43.36	17.69	18 16 2.01	2.09
	ζ Aquilæ. . . .	34	30.3	32.1	33.5	43.2	44.3	45.4	46.7	47.9	57.8	58.9	0.4	59 45.50	0.09	17.67	18 59 27.74	1.71
	κ. Aquilæ. . . .	35	58.9	0.5	1.7	11.2	12.5	13.5	15.0	16.0	25.8	26.9	28.5	30 13.68	− 0.17	17.66	19 29 55.85	1.98
	λ Ursæ Minoris. .	36	. .	33.0	33.0	. .	. .	. .	. .	. .	33.0	38.0	. .	55 4.25	+ 1.59	17.65	. . . .	30.78
	Moon I.	37	21.5	23.0	24.2	34.9	35.9	37.3	38.7	40.0	50.8	52.0	54.0	58 37.48	− 0.25	17.65	19 58 19.58	
	α² Capricorni . .	38	55.2	57.0	58.3	7.9	9.0	10.3	11.6	12.9	22.5	23.9	25.7	11 10.39	0.20	17.65	20 10 52.54	2.19
	*+14° 14′ . . .	39	59.0	0.9	2.1	11.7	12.8	13.8	15.5	16.7	26.5	27.5	29.5	28 14.16	0.09	17.64	20 27 56.43	2.10
	μ Aquarii. . . .	40	43.4	45.4	46.7	56.1	57.2	58.4	59.8	1.1	10.7	11.9	12.6	45 58.48	− 0.18	17.64	20 45 40.66	2.24
	ν Cygni	41	20.3	22.6	24.0	36.5	38.0	39.8	41.2	42.8	55.2	56.9	59.1	52 39.67	+ 0.02	17.63	20 52 22.06	2.33
	*−12° 23′ . . .	42	20.8	22.5	23.7	33.5	34.5	35.7	37.1	38.2	47.9	48.9	50.9	5 35.79	− 0.20	17.63	21 5 17.96	2.32
	*+36° 7′ . . .	43	59.4	1.6	2.8	. .	. .	. .	. .	. .	32.0	33.8	35.9	20 17.58	− 0.05	17.62	21 19 59.91	2.40
	*+36° 7′ . . .	44	. .	. .	. .	19.1	20.8	22.4	23.4	24.8	. .	. .	. .	20 22.10	+ 0.07	17.62	21 20 4.55	2.40
	*+36° 7′ . . .	45	. .	. .	. .	45.7	47.0	48.5	50.2	51.3	. .	. .	. .	20 48.54	+ 0.07	17.62	21 20 30.99	2.41
	*+36° 7′ . . .	46	55.0	57.7	58.7	10.5	11.7	13.1	14.8	16.3	28.0	29.6	31.6	21 13.36	0.00	17.62	21 20 55.74	2.41
	ε Pegasi	47	52.9	54.7	56.0	5.7	6.8	7.9	9.2	10.3	20.2	21.2	23.0	38 7.99	− 0.11	17.62	21 37 50.26	2.30
	*−6° 1′. . . .	48	53.2	55.0	56.1	5.7	6.8	8.0	9.2	10.4	20.0	21.0	22.6	46 8.00	0.17	17.61	21 45 50.22	2.34
	α Aquarii. . . .	49	11.6	13.5	14.6	24.2	25.2	26.3	27.6	28.8	38.4	39.5	41.2	59 26.45	− 0.14	−17.61	21 59 8.70	− 2.34

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Aug. 26, 19.6	− 17.12	− 0.005	+ 0.24	− 0.13
Sept. 3, 20.4	− 17.90	+ 0.032	+ 0.24	− 0.14
5, 20.5	− 17.64	+ 0.020	+ 0.24	− 0.14
6, 20.5	− 17.70	− 0.030	+ 0.24	− 0.14

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
1870.														m. s.	m. s.	s.	h. m. s.	s.
Sept. 6	ι Aquilæ	1	12.4	14.3	15.5	25.0	26.2	27.3	28.6	29.8	39.4	40.6	42.3	28 27.40	− 0.19	−17.64	18 28 9.57	− 1.70
Y.	51 Cephei, S. P. . .	2	59.0	33.0	56.0	15.0	41.0	6.5	30.0	52.0	7.0	31.5	9.0	39 3.64	4.14	17.64	. . . .	+ 1.21
	*−8° 52′ . . .	3	. .	. .	. .	. .	. .	. .	12.3	15.0	16.2	17.5	18.7	10 15.94	34.17	17.66	19 9 24.11	− 1.90
	τ Aquilæ	4	52.2	54.1	55.3	4.7	5.8	6.9	8.2	9.4	19.1	20.2	21.9	58 7.07	0.10	17.68	19 57 49.29	1.99
	B. A. C. 6907 . .	5	13.7	15.7	16.9	26.6	27.7	28.9	30.2	31.4	41.4	42.5	44.4	1 29.04	0.24	17.69	20 1 11.11	2.17
	*−12° 23′ . . .	6	20.7	22.5	23.8	33.4	34.5	35.8	37.0	38.2	48.1	49.3	50.9	5 35.84	− 0.22	17.72	21 5 17.90	2.32
	*+36° 8′ . . .	7	59.2	1.5	2.8	14.6	15.9	17.4	18.8	20.4	32.2	33.6	35.7	20 17.46	+ 0.07	17.72	21 19 59.81	2.40
	*+36° 4′ . . .	8	. .	. .	. .	. .	. .	. .	59.7	2.8	4.2	5.7	7.3	21 3.94	− 41.57	17.72	21 20 4.65	2.40
	β Aquarii. . . .	9	. .	50.1	51.2	0.7	. .	3.1	. .	5.5	15.0	16.2	. .	25 3.11	0.19	17.73	21 24 45.19	2.31
	Weisse 1063 . .	10	53.1	55.0	56.2	5.6	6.8	7.9	9.0	10.3	19.9	21.0	22.7	46 7.95	0.18	17.74	21 45 50.03	2.34
	Weisse 1139 . .	11	38.3	40.2	41.4	50.7	51.9	53.1	54.3	55.6	5.0	6.3	8.0	49 53.16	0.17	17.74	21 49 35.25	2.34
	α Aquarii. . . .	12	11.7	13.7	14.9	24.2	25.4	26.5	27.8	29.0	38.5	39.7	41.4	59 26.62	0.15	17.74	21 59 8.73	2.34
9	μ¹ Sagittarii . . .	13	4.2	6.2	7.4	17.5	18.5	19.8	21.2	22.5	32.8	34.1	35.8	6 20.00	− 0.24	18.68	18 6 1.08	1.68
Sk.	*−38° 39′ . . .	14	. .	12.1	13.6	15.3	18.0	53.5	54.7	56.0	58.0	59.3	. .	15 37.83	+ 18.11	18.68	18 15 37.26	2.01
	*−38° 39′ . . .	15	2.0	4.5	5.8	17.9	19.5	20.9	22.5	24.0	36.2	37.7	39.9	16 20.99	− 0.37	18.68	18 16 1.94	2.01
	51 Cephei, S. P. . .	16	. .	. .	. .	16.0	40.0	6.0	30.5	53.0	. .	. .	. .	39 5.10	3.12	18.67	. . . .	0.27
	β Lyræ	17	19.3	21.3	22.8	34.0	35.4	36.8	38.4	39.7	51.2	52.5	54.5	45 36.90	0.01	18.67	18 45 18.22	1.48
	β Aquarii. . . .	18	49.4	50.9	52.1	1.7	2.6	3.9	5.1	6.5	15.9	17.2	18.8	25 4.01	0.17	18.64	21 24 45.20	2.30
	ξ Aquarii. . . .	19	56.0	57.7	59.0	8.6	9.6	10.9	12.1	13.2	22.9	24.0	25.7	31 10.88	0.18	18.63	21 30 52.07	2.32
	*−35° 39′ . . .	20	8.7	11.0	12.5	24.0	25.3	26.8	28.2	29.9	41.5	43.0	45.2	44 26.92	0.35	18.63	21 44 7.94	2.70
	α Aquarii . . .	21	12.4	14.7	15.7	25.3	26.3	27.4	28.6	29.8	39.3	40.5	41.9	59 27.45	− 0.14	18.63	21 59 8.68	− 2.34
12	δ Ursæ Minoris. .	22	. .	. .	. .	51.0	10.5	30.0	50.5	10.0	. .	. .	. .	14 30.40	+ 3.71	19.52	. . . .	+ 1.78
	β Aquarii. . . .	23	50.0	51.6	52.9	2.5	3.6	4.7	5.9	7.1	16.8	17.8	19.7	25 4.78	− 0.17	19.52	. . . .	− 2.28
	ξ Aquarii. . . .	24	57.0	58.8	59.9	9.4	10.5	11.8	12.9	14.1	23.9	25.0	26.6	31 11.81	0.19	19.52	. . . .	2.31
13	κ Aquilæ	25	0.5	2.3	3.6	12.9	14.1	15.2	16.5	17.8	27.5	28.6	30.3	30 15.39	0.18	19.64	. . . .	1.88
Y.	γ Aquilæ	26	11.2	13.1	14.3	24.0	25.2	26.3	27.6	28.8	38.4	39.7	41.3	40 26.35	− 0.10	19.64	. . . .	1.81
	λ Ursæ Minoris. .	27	. .	. .	. .	46.0	48.0	49.0	53.0	54.0	. .	. .	. .	54 50.00	+ 9.39	19.64	. . . .	− 22.47
14	δ Ursæ Minoris . .	28	. .	. .	. .	52.0	9.5	29.5	50.5	9.5	. .	. .	. .	14 30.20	+ 3.37	19.79	. . . .	+ 2.59
Sk.	ι Pegasi	29	10.9	12.8	14.0	24.1	25.4	26.4	27.8	29.1	39.1	40.2	42.0	16 26.53	− 0.04	19.79	. . . .	− 2.20
	β Aquarii. . . .	30	50.2	52.1	53.2	2.7	3.8	4.9	6.3	7.4	17.1	18.2	19.8	25 5.06	0.17	19.79	. . . .	2.27
	ξ Aquarii. . . .	31	57.1	58.9	0.2	9.7	10.8	11.9	13.3	14.5	24.1	25.3	27.1	31 12.08	0.18	19.79	. . . .	2.30
	*−35° 39′ . . .	32	9.8	12.2	13.5	24.8	26.3	27.8	29.2	30.7	42.6	44.2	46.2	44 27.94	− 0.38	19.79	21 44 7.77	2.68
	*+38° 39′ . . .	33	15.2	17.4	18.9	31.1	32.4	33.9	35.7	37.3	49.3	50.8	53.0	47 34.09	+ 0.04	19.79	21 47 14.34	2.48
	B. A. C. 7742 . .	34	41.6	43.4	44.7	54.5	55.5	56.7	58.1	59.2	9.3	10.5	12.2	5 56.88	− 0.07	19.79	22 5 37.02	2.34
	*−32° 33′ . . .	35	32.6	34.9	36.2	47.5	48.8	50.1	51.6	52.9	4.3	5.8	7.7	8 50.22	0.34	19.79	22 8 30.09	2.64
	π Aquarii. . . .	36	45.7	47.6	48.7	58.1	59.2	0.3	1.6	2.8	12.3	13.4	15.3	19 0.45	− 0.14	19.79	22 18 40.52	− 2.35
16	δ Ursæ Minoris . .	37	. .	. .	. .	50.0	9.5	27.5	49.0	8.0	. .	. .	. .	14 28.80	+ 2.79	18.38	. . . .	+ 3.46
	β Aquarii. . . .	38	48.7	50.5	51.7	1.3	2.2	3.3	4.7	5.8	15.5	16.8	18.3	25 3.53	− 0.17	18.32	21 24 45.04	− 2.26
	ξ Aquarii. . . .	39	55.5	57.4	58.6	8.2	9.3	10.6	11.8	12.9	22.7	24.0	25.4	31 10.58	0.18	18.32	21 30 52.08	2.29
	O. Arg. S. 21923 .	40	. .	35.4	37.0	38.4	40.6	. .	44.0	46.6	47.9	49.1	. .	2 12.38	0.50	18.31	22 1 53.57	2.44
	*−19° 10′ . . .		3.5	5.2	6.5	16.6	17.8	19.0	20.5	21.5	31.8	32.9	34.5	2 19.07	0.24	18.31	22 2 0.52	2.44
	B. A. C. 7742 . .	41	40.1	41.9	43.3	52.9	54.1	55.3	56.7	57.8	7.7	9.0	10.7	5 55.41	0.08	18.31	22 5 37.02	2.34
	π Aquarii. . . .	42	44.3	46.1	47.4	56.7	57.9	59.0	0.2	1.5	11.0	12.1	13.7	18 59.08	0.14	18.30	22 18 40.64	2.35
	η Aquarii. . . .	43	46.6	48.4	49.6	58.8	0.0	1.1	2.5	3.6	13.3	14.5	16.1	29 1.32	− 0.14	18.30	22 28 42.88	− 2.37
19	δ Ursæ Minoris . .	44	. .	. .	. .	46.5	6.0	23.5	47.0	5.0	. .	. .	. .	14 25.60	+ 2.79	16.01	. . . .	+ 4.83
	O. Arg. S. 21922 .	45	. .	33.0	34.5	35.7	38.0	. .	41.6	44.1	45.2	46.6	. .	2 9.84	− 0.50	15.93	22 1 53.41	− 2.43
	O. Arg. S. 21923 .	46	1.0	. .	4.1	14.4	15.3	16.6	18.0	19.3	29.3	. .	32.2	2 16.69	0.22	15.93	22 2 0.54	2.43
	*−21° 59′ . . .	47	53.7	. .	57.1	7.2	8.4	9.8	11.0	12.4	22.2	. .	25.5	9 9.70	0.24	15.93	22 8 53.53	2.47
	π Aquarii. . . .	48	41.9	. .	44.7	54.2	55.5	56.5	57.7	58.9	8.7	. .	11.4	18 56.61	0.12	15.93	. . . .	2.34
	O. Arg. S. 22294 .	49	8.4	. .	11.9	22.5	23.6	24.7	26.6	27.9	38.8	. .	42.1	27 25.17	0.27	15.92	22 27 8.98	2.57
	α Piscis Australis .	50	29.4	. .	32.8	43.7	45.0	46.4	48.0	49.2	0.2	. .	3.5	50 47.58	− 0.29	−15.92	. . . .	− 2.63

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Sept. 9, 20.4	− 18.65	+ 0.014	+ 0.24	− 0.14
12, 21.5	− 19.52	0.000	+ 0.30	− 0.14
13, 19.6	− 19.64	0.000	+ 0.26	− 0.14
14, 21.4	− 19.79	0.000	+ 0.28	− 0.14
16, 21.9	− 18.31	+ 0.020	+ 0.25	− 0.14
19, 22.6	− 15.92	+ 0.020	+ 0.25	− 0.14

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
1870.														m. s.	m. s.	s.	h. m. s.	s.
Sept. 21	δ Ursæ Minoris . .	1	. .	. .	. .	44.0	2.5	22.5	44.0	2.5	. .	. .	. .	14 23.10	+ 2.79	−15.12	. . . .	+ 5.72
Sk.	ξ Aquarii . . .	2	52.5	54.1	55.3	4.9	6.1	7.2	8.5	9.7	19.4	20.4	22.2	30 7.30	− 0.18	15.05	21 29 52.07	− 2.25
	*+38° 39′ . . .	3	10.3	12.2	14.4	26.4	27.6	29.1	30.8	32.1	44.5	46.3	48.1	47 29.25	+ 0.02	15.05	21 47 14.22	2.41
	O. Arg. S. 21922 .	4	. .	31.8	33.5	34.8	36.9	. .	40.6	43.2	44.5	45.9	. .	2 8.90	− 0.50	15.04	22 1 53.36	2.41
	O. Arg. S. 21923 .	5	0.0	2.0	3.1	13.3	14.4	15.5	16.9	18.0	28.3	29.4	31.4	2 15.66	0.24	15.04	22 2 0.38	2.41
	*−21° 59′ . . .	6	. .	. .	. .	6.5	7.6	8.5	10.0	11.1	21.5	22.8	24.5	9 14.06	5.58	15.04	22 8 53.44	2.46
	π Aquarii . . .	7	40.8	42.7	43.9	53.2	54.4	55.5	56.8	57.9	7.4	8.8	10.5	18 55.63	0.14	15.04	22 18 40.45	2.34
	σ¹ Gruis	8	. .	. .	. .	8.3	9.3	11.1	12.8	14.3	. .	. .	. .	29 11.16	0.33	15.03	22 28 55.80	2.82
	σ² Gruis	9	21.7	24.0	25.6	38.0	39.5	41.0	42.8	44.2	57.2	58.8	0.8	29 41.24	0.40	15.03	22 29 25.81	2.81
	ζ Pegasi	10	1.4	3.0	4.2	13.9	14.9	16.2	17.4	18.7	28.3	29.5	31.2	35 16.25	0.10	15.03	22 35 1.12	2.38
	h⁴ Aquarii. . . .	11	28.8	30.6	31.8	41.4	42.4	43.6	44.7	46.0	55.8	56.8	58.4	0 43.66	− 0.18	15.02	23 0 28.46	2.43
	*+66° 18′ . . .	12	40.1	44.9	47.9	11.2	14.3	17.1	20.1	22.8	47.0	49.7	54.3	17 17.22	+ 0.22	15.02	23 17 2.42	4.32
	θ Piscium . . .	13	25.3	27.0	28.3	37.8	38.8	39.9	41.2	42.3	51.9	53.2	54.9	21 40.05	− 0.12	15.02	23 21 24.91	2.43
	ι Piscium . . .	14	18.6	20.5	21.7	31.1	32.2	33.4	34.6	35.7	45.3	46.6	48.1	33 33.44	0.12	15.01	23 33 18.31	2.47
	B. A. C. 8269 . .	15	. .	49.1	50.6	52.0	54.0	. .	54.0	56.4	57.7	58.9	. .	42 24.09	0.38	15.01	23 42 8.70	2.45
	B. A. C. 8270 . .	16	13.5	15.3	16.4	26.1	27.0	28.2	29.5	30.5	40.1	41.3	42.7	42 28.24	− 0.13	15.01	23 42 13.10	− 2.45
Oct. 3	γ² Ursæ Minoris. .	17	14.1	19.6	23.4	54.5	58.0	1.9	6.3	10.1	41.4	45.4	50.6	21 2.30	+ 0.32	8.70	15 20 53.92	+ 3.51
Y.	α Coronæ Borealis .	18	3.1	5.2	6.5	17.0	18.4	19.7	21.1	22.4	33.1	34.5	36.3	29 19.75	− 0.03	8.70	. . . .	+ 0.06
	α Serpentis . . .	19	46.1	48.0	49.2	58.6	59.7	1.0	2.2	3.4	12.9	14.2	15.9	38 1.02	− 0.11	8.70	. . . .	− 0.28
4	δ Ursæ Minoris. .	20	. .	. .	. .	32.0	51.0	10.0	32.0	51.5	. .	. .	. .	14 11.30	+ 2.79	8.81	. . . .	+ 11.30
Sk.	1 Aquilæ. . . .	21	3.3	5.0	6.2	15.8	16.8	18.0	19.2	20.3	30.2	31.3	32.9	28 18.09	− 0.18	8.81	18 28 9.10	− 1.23
	β Aquarii . . .	22	39.1	41.0	42.2	51.7	52.7	53.8	55.2	56.4	6.0	7.2	8.8	24 54.01	0.17	8.87	21 24 44.97	2.08
	Moon I. . . .	23	56.1	57.8	59.0	9.2	10.7	11.8	13.0	14.3	24.7	26.1	27.5	34 11.84	0.23	8.88	21 34 2.73	
	ε Pegasi	24	44.3	46.2	47.2	56.8	57.9	59.0	0.4	1.5	11.2	12.3	14.0	37 59.16	0.10	8.88	21 37 50.18	2.08
	μ Capricorni. . .	25	8.4	10.5	11.6	21.2	22.4	23.5	24.7	26.1	36.1	37.1	38.8	46 23.67	0.21	8.88	21 46 14.58	2.23
5	γ Aquilæ. . . .	26	0.8	. .	3.7	13.3	14.5	15.7	17.1	18.1	27.8	. .	30.8	40 15.76	0.08	9.51	19 40 6.17	1.45
	α Aquilæ. . . .	27	22.5	. .	25.6	34.9	36.1	37.4	38.7	39.8	49.6	. .	52.4	44 37.44	− 0.09	9.51	19 44 27.84	− 1.50
	λ Ursæ Minoris .	28	. .	. .	. .	11.0	10.0	9.0	. .	. .	. .	. .	. .	53 10.00	+ 1 12.40	9.52	. . . .	+ 4.78
	Moon I. . . .	29	4.6	. .	7.6	17.5	18.5	19.7	21.2	22.5	32.5	. .	35.5	26 19.96	− 0.19	9.58	22 26 10.19	
	ζ Pegasi	30	55.7	. .	58.9	8.3	9.4	10.7	11.9	13.1	22.7	. .	25.7	35 10.71	0.08	9.58	22 35 1.05	− 2.30
	λ Aquarii . . .	31	47.0	. .	50.0	59.5	0.6	1.9	3.0	4.2	14.1	. .	16.9	46 1.91	0.16	9.59	22 45 52.16	2.35
8	Moon I. . . .	32	14.5	. .	17.5	27.4	28.4	29.4	30.8	31.8	41.9	. .	44.7	49 29.60	0.12	10.44	0 49 19.04	
St.	ε Piscium . . .	33	. .	. .	. .	22.5	23.7	25.0	26.1	27.4	37.2	38.2	39.6	56 29.96	− 5.08	10.44	. . . .	2.58
	Polaris	34	. .	. .	. .	55.0	40.0	. .	24.0	10.0	. .	. .	. .	12 32.25	+ 6.13	10.44	. . . .	65.12
	Neptune . . .	35	25.8	. .	28.8	38.3	39.4	40.5	41.8	43.0	52.4	. .	55.3	18 40.59	− 0.10	10.44	1 18 30.05	
	η Piscium . . .	36	29.9	. .	32.6	42.5	43.6	44.9	46.2	47.3	57.2	. .	0.2	24 44.93	− 0.06	10.44	. . . .	− 2.67
13	λ Ursæ Minoris. .	37	. .	. .	. .	59.5	0.0	2.0	11.0	12.0	. .	. .	. .	54 4.90	+ 8.81	10.30	. . . .	+ 14.78
Sk.	α² Capricorni. .	38	47.5	. .	50.5	0.2	1.3	2.5	3.8	5.0	14.8	. .	17.6	10 2.58	− 0.18	10.31	20 9 52.09	− 1.66
	ε Pegasi	39	45.5	. .	48.5	58.2	59.4	0.4	1.6	2.8	12.4	. .	15.4	38 0.47	0.08	10.34	21 37 50.05	1.97
	μ Capricorni. .	40	9.8	. .	12.7	22.7	23.8	24.9	26.2	27.4	37.4	. .	40.2	46 25.01	0.19	10.35	21 46 14.47	2.13
	α Aquarii. . . .	41	4.2	. .	7.2	16.5	17.7	18.8	20.1	21.2	30.7	. .	33.7	59 18.90	0.12	10.36	21 59 8.42	2.10
	*−32° 33′ . . .	42	23.1	. .	26.6	37.8	39.2	40.4	42.2	43.4	54.6	. .	58.0	8 40.62	0.30	10.36	22 8 29.96	2.39
	π Aquarii. . . .	43	36.0	. .	39.1	48.6	49.7	50.9	52.2	53.2	2.9	. .	5.7	18 50.93	0.12	10.36	22 18 40.45	2.17
	α Tauri	44	25.3	. .	28.6	38.5	39.6	40.8	42.0	43.1	53.2	. .	56.1	28 40.80	0.05	10.54	4 28 30.21	2.44
	Moon II . . .	45	6.9	. .	10.2	20.2	21.7	22.8	24.2	25.6	35.7	. .	38.8	48 22.90	0.04	10.55	4 48 12.31	
	β Geminorum . .	46	17.0	. .	20.4	31.3	32.3	33.5	35.0	36.2	47.2	. .	50.4	37 33.70	0.01	10.63	7 37 23.06	1.50
	φ Geminorum . .	47	28.2	. .	31.2	41.8	43.0	44.3	45.7	47.0	57.8	. .	1.0	45 44.44	0.01	10.63	7 45 33.80	1.46
15	γ Aquilæ. . . .	48	2.0	4.0	5.1	14.8	15.8	16.9	18.2	19.4	29.1	30.3	32.1	40 17.06	0.10	10.97	19 40 5.99	1.27
	α Aquilæ. . . .	49	23.9	25.6	27.0	36.5	37.5	38 6	40.0	41.1	50.9	52.1	53.5	44 38.79	− 0.11	10.97	19 44 27.71	− 1.33
	λ Ursæ Minoris. .	50	. .	. .	. .	58.0	1.0	57.0	5.0	5.0	. .	. .	. .	54 1.20	+ 8.81	−10.96	. . . .	+ 17.64

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1870. h.	s.	s.	s.	s.
Sept. 21, 22.7	− 15.03	+ 0.020	+ 0.25	− 0.14
Oct. 3, 15.6	− 8.70	− 0.010	+ 0.25	− 0.15
4, 20.8	− 8.86	− 0.020	+ 0.25	− 0.15
5, 21.2	− 9.55	− 0.024	+ 0.25	− 0.14
8, 1.2	− 10.44	. .	+ 0.25	− 0.14
13, 1.0	− 10.44	− 0.028	+ 0.25	− 0.14

October 3, 13ʰ. Image 0ʳ.00. Clamp east.
Image 0ʳ.00. Clamp west.
32. Mr. Ormond Stone.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
														m. s.	m. s.	s.	h. m. s.	s.
1870. Oct. 15	μ Capricorni. . .	1	10.5	12.3	13.5	23.2	24.4	25.6	26.9	28.0	37.8	39.0	40.7	(46) 25.63	− 0.21	−10.94	21 (46) 14.48	− 2.10
S.	α Aquarii. . . .	2	4.8	6.4	7.6	17.2	18.1	19.3	20.6	21.9	31.5	32.6	34.3	59 19.48	0.14	10.93	21 59 8.41	2.07
	*−32° 33′ . . .	3	23.6	25.8	27.2	38.2	39.7	41.2	42.8	44.0	55.5	56.7	58.7	8 41.22	0.32	10.93	22 8 29.97	2.36
	π Aquarii. . . .	4	36.9	38.5	39.7	48.9	50.3	51.4	52.7	53.7	3.5	4.6	6.2	18 51.49	0.14	10.93	22 18 40.42	2.16
	h⁴ Aquarii. . . .	5	24.8	26.7	27.8	37.3	38.5	39.7	40.9	42.2	51.8	53.0	54.6	0 39.75	− 0.18	10.92	23 0 28.65	2.33
	*+37° 8′ . . .	6	4.9	7.2	8.4	20.3	21.8	23.1	24.9	26.4	38.4	39.7	41.9	5 23.36	+ 0.02	10.92	23 5 12.46	2.57
	ι Piscium . . .	7	14.4	16.4	17.7	27.1	28.3	29.1	30.4	31.5	41.4	42.5	44.2	33 29.36	− 0.12	10.91	23 33 18.33	2.44
18	ε Piscium . . .	8	5.7	7.7	8.9	18.2	19.4	20.5	21.7	23.1	32.6	33.9	35.4	56 20.65	0.11	6.09	0 56 14.45	2.63
St.	Lacaille 210 . .	9	. .	. .	. .	0.5	1.7	2.9	4.4	5.9	. .	. .	. .	1 3.08	0.20	6.09	1 0 56.79	2.60
	*+ 0° 35′ . . .	10	. .	. .	. .	52.8	53.9	55.0	56.2	57.3	. .	. .	. .	3 55.04	0.08	6.09	1 3 48.87	2.60
	*+14° 59′ . . .	11	. .	. .	. .	59.9	1.4	2.4	3.7	4.8	. .	. .	. .	27 2.44	0.02	6.11	1 26 56.31	2.75
	o Piscium . . .	12	26.0	. .	29.0	38.5	39.6	40.7	42.0	43.2	52.7	. .	55.6	38 40.81	0.09	6.12	1 38 34.60	2.69
	Vesta	13	24.6	26.5	27.6	. .	38.2	39.2	40.6	. .	51.3	52.5	54.0	49 39.39	0.16	6.13	1 49 33.10	
	ξ¹ Ceti	14	0.9	2.6	3.5	13.2	14.5	15.4	17.0	17.8	27.9	29.0	30.6	6 15.67	0.11	6.14	2 6 9.42	2.70
	Moon II . . .	15	11.9	. .	15.0	25.1	26.2	27.5	28.7	29.9	40.2	. .	43.4	22 27.54	− 0.05	6.46	9 22 21.03	
	ε Leonis	16	. .	. .	. .	33.0	34.1	35.2	36.8	37.9	. .	. .	. .	38 35.40	+ 0.02	6.47	9 38 28.95	0.84
	α Leonis	17	. .	. .	. .	31.6	32.9	34.0	35.3	36.4	. .	. .	. .	1 34.04	− 0.03	6.49	10 1 27.52	− 0.69
21	λ Ursæ Minoris . .	18	. .	. .	. .	53.0	52.0	53.0	2.0	56.0	. .	. .	. .	53 55.20	+ 2.42	6.81	. . . .	+ 26.03
Sk.	α² Capricorni. . .	19	43.8	45.6	46.8	56.5	57.6	58.8	0.1	1.3	11.0	12.3	14.0	10 58.89	− 0.17	6.81	20 10 51.91	− 1.53
	π Aquarii. . . .	20	32.5	34.3	35.3	44.9	46.0	47.3	48.4	49.6	59.3	0.3	1.9	18 47.25	0.14	6.83	22 18 40.28	2.10
Y.	η Aquarii. . . .	21	34.9	36.8	37.8	47.2	48.3	49.6	50.9	52.0	1.5	2.8	4.5	28 49.66	0.14	6.83	22 28 42.69	2.14
Sk.	*+57° 47′ . . .	22	55.4	58.6	1.0	. .	. .	. .	. .	. .	45.3	47.4	50.3	40 23.00	− 0.15	6.83	22 40 16.02	2.75
	*+57° 47′ . . .	23	. .	. .	. .	26.8	28.6	30.9	. .	35.7	. .	. .	. .	40 30.50	+ 0.62	6.83	22 40 24.29	2.75
	*+37° 8′ . . .	24	0.4	2.7	4.3	16.0	17.3	18.9	20.2	21.9	33.9	35.4	37.4	5 18.95	− 0.08	6.84	23 5 12.03	2.50
	*+54° 1′ . . .	25	51.9	55.0	57.0	13.0	15.1	17.0	19.0	21.0	37.4	39.2	42.1	21 17.06	0.06	6.84	23 21 10.16	3.06
	ι Piscium . . .	26	10.6	12.2	13.6	23.0	24.2	25.2	26.3	27.4	37.2	38.4	39.9	33 25.27	0.13	6.84	23 33 18.30	2.41
	*−35° 23′ . . .	27	12.3	14.3	15.9	. .	. .	. .	7.3	10.2	11.9	13.4	14.9	56 50.02	19.97	6.84	23 56 23.21	2.70
	*−35° 23′ . . .	28	. .	. .	. .	46.8	48.2	. .	51.0	52.6	. .	. .	. .	56 49.65	0.21	6.84	23 56 42.60	2.70
	γ Pegasi	29	27.0	28.6	29.8	39.7	40.8	42.0	43.4	44.6	54.6	55.8	57.3	6 42.15	− 0.11	6.84	0 6 35.20	2.56
24	Polaris	30	. .	. .	. .	53.0	40.0	26.0	17.0	2.0	. .	. .	. .	12 27.60	+ 1.89	6.57	. . . .	65.14
St.	Neptune . . .	31	. .	. .	. .	9.4	10.6	12.6	. .	30.3	31.4	32.7	34.1	17 23.01	− 25.63	6.56	1 16 50.82	
	η Piscium . . .	32	. .	. .	. .	38.9	39.8	41.1	42.4	43.9	. .	. .	. .	24 41.22	0.05	6.56	1 24 34.61	2.77
	o Piscium . . .	33	. .	. .	. .	38.9	39.8	41.1	42.4	43.6	. .	. .	. .	38 41.16	0.06	6.55	1 38 34.55	2.73
	Vesta	34	. .	. .	. .	49.4	50.6	51.8	52.9	54.1	. .	. .	. .	43 51.76	0.08	6.55	1 43 45.13	
	β Arietis	35	21.4	. .	24.8	34.6	35.9	37.2	38.4	39.6	50.0	. .	52.7	47 37.18	0.08	6.55	1 47 30.55	2.90
	α Arietis	36	44.6	. .	47.8	58.0	59.2	0.5	1.9	3.2	13.4	. .	16.5	0 0.57	0.07	6.54	1 59 53.96	2.96
	ξ¹ Ceti	37	1.2	. .	4.3	13.8	14.7	15.9	17.3	18.4	28.2	. .	31.0	6 16.09	0.10	6.54	2 6 9.45	2.75
25.	α¹ Herculis . . .	38	. .	. .	. .	47.1	48.4	49.6	50.8	52.1	. .	. .	. .	8 49.60	0.05	6.07	. . . .	0.27
Y.	η Aquarii. . . .	39	. .	. .	. .	46.4	47.4	48.6	49.8	50.9	0.6	1.7	3.4	28 53.60	5.07	5.92	. . . .	2.09
	ζ Pegasi	40	51.8	53.7	54.9	4.5	5.5	6.8	8.0	9.2	18.8	20.1	21.8	35 6.83	0.12	5.92	. . . .	2.11
Sk.	α Andromedæ . .	41	32.1	. .	35.5	46.1	47.5	48.8	50.2	51.5	2.5	. .	5.7	2 48.88	− 0.07	5.87	. . . .	2.69
	Lalande 221 . .	42	46.8	. .	50.6	. .	. .	. .	. .	. .	. .	. .	. .	9 48.70	+ 16.27	5.87	0 9 59.10	2.85
	*+35° 50′ . . .	43	10.1	. .	13.9	25.5	26.9	28.3	29.8	31.3	43.2	. .	46.6	10 28.40	− 0.06	5.87	0 10 22.47	2.85
	*+35° 50′ . . .	44	. .	. .	. .	51.3	52.8	54.3	55.7	57.3	. .	. .	. .	10 54.28	0.02	5.87	0 10 48.39	2.86
	*+3° 9′. . . .	45	48.3	49.7	50.9	53.3	. .	. .	. .	56.6	57.8	59.1	0.4	19 24.51	0.38	5.86	0 19 18.27	2.53
	*+3° 9′. . . .	46	15.0	. .	17.8	27.3	28.5	29.5	30.8	32.0	41.4	. .	44.5	19 29.64	0.11	5.86	0 19 23.67	2.53
	*−3° 9′. . . .	47	. .	. .	. .	. .	. .	. .	14.5	17.1	18.2	19.4	20.8	20 18.00	33.77	5.86	0 19 38.37	2.53
	β Ceti.	48	56.6	. .	59.9	9.9	11.1	12.2	13.6	14.9	24.9	. .	27.7	37 12.31	− 0.17	5.85	. . . .	2.56
	Polaris	49	. .	. .	. .	50.0	36.0	26.0	16.0	1.0	. .	. .	. .	12 25.80	+ 1.89	5.83	. . . .	− 65.12
St.	Neptune . . .	50	35.9	37.4	39.1	48.2	49.3	50.5	51.8	52.9	2.7	3.9	5.4	16 50.65	− 0.13	− 5.83	1 16 44.69	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Oct. 15, 21.5	− 10.94	+ 0.015	+ 0.25	− 0.14
18, 4.8	− 6.26	− 0.044	+ 0.25	− 0.14
21, 22.5	− 6.83	− 0.008	+ 0.13	− 0.14
24, 1.8	− 6.55	+ 0.030	+ 0.13	− 0.14
25, 1.3	− 5.83	+ 0.029	+ 0.13	− 0.14

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Oct. 25	η Piscium . . .	1	25.2	27.3	28.4	38.1	39.2	40.4	41.7	43.0	52.7	54.1	55.5	24 40.51	— 0.11	— 5.83	1 24 34.57	— 2.78
St.	Vesta	2	39.2	41.0	42.2	51.5	52.7	53.7	55.2	56.2	5.9	6.9	8.5	42 53.91	0.14	5.82	1 42 47.95	
	β Arietis	3	20.8	22.6	23.9	. .	35.3	36.5	38.0	39.2	49.1	50.4	52.2	47 36.80	0.35	5.82	1 47 30.63	2.90
	α Arietis	4	44.0	45.9	47.1	57.3	58.6	59.7	1.2	2.3	12.6	14.1	15.8	59 59.87	0.09	5.81	1 59 53.97	2.97
	ξ¹ Ceti	5	0.4	1.2	3.4	13.0	14.1	15.2	16.5	17.8	27.5	28.7	30.3	6 15.28	0.12	5.81	2 6 9.35	2.76
28	γ² Sagittarii . . .	6	16.1	18.2	19.6	30.5	31.8	33.1	34.6	35.9	46.9	48.4	50.6	57 33.25	0.24	4.78	. . . .	— 0.86
Y.	Moon I. . . .	7	21.0	22.9	24.2	34.8	36.0	37.3	38.6	39.9	50.8	52.1	53.9	16 37.41	0.21	4.78	18 16 32.42	
	δ Ursæ Minoris . .	8	. .	. .	. .	. .	. .	. .	30.0	12.0	32.5	53.0	14.5	23 28.40	9 28.37	4.78	. . . .	+ 21.06
	1 Aquilæ	9	. .	. .	. .	25.7	27.0	28.7	44.2	46.7	48.0	49.2	50.5	28 40.00	26.38	4.78	. . . .	— 0.85
	α Lyræ	10	18.3	20.6	. .	34.2	35.6	37.2	38.8	40.2	52.4	54.0	56.1	32 38.74	1.59	4.78	. . . .	0.15
31	ε Delphini . . .	11	52.6	. .	55.5	5.3	6.4	7.7	8.9	10.2	19.7	. .	22.5	27 7.64	0.10	6.21	20 27 1.33	1.27
Sk.	μ Aquarii. . . .	12	31.3	. .	34.3	43.9	(45.1)	46.3	47.6	48.6	58.3	. .	1.1	45 46.28	0.16	6.22	20 45 39.90	1.52
	Moon I. . . .	13	16.1	. .	19.2	28.5	30.4	31.9	33.4	34.6	45.1	. .	48.2	17 31.93	0.17	6.22	21 17 25.54	
	β Aquarii. . . .	14	36.0	. .	39.1	48.5	49.7	50.9	52.1	53.2	2.8	. .	5.7	24 50.89	0.13	6.23	21 24 44.53	1.71
	ξ Aquarii. . . .	15	43.0	. .	46.0	55.6	56.7	57.8	59.2	0.3	9.9	. .	12.8	30 57.92	0.14	6.23	21 30 51.55	1.76
	69 Pegasi	16	5.5	. .	9.0	19.5	20.6	21.7	22.9	24.2	35.0	. .	37.9	21 21.81	— 0.07	6.28	23 21 15.46	2.36
St.	Polaris	17	. .	. .	. .	49.0	35.0	23.0	19.0	2.0	. .	. .	. .	12 25.60	+ 2.54	6.27	. . . .	63.23
	Neptune . . .	18	. .	. .	. .	. .	. .	. .	45.1	48.0	49.5	50.6	51.8	17 49.06	— 33.90	6.28	1 17 8.88	
	η Piscium . . .	19	. .	. .	. .	. .	. .	. .	12.0	14.7	15.9	17.1	18.5	25 15.64	34.82	6.28	1 24 34.54	2.79
	Vesta	20	7.7	9.6	10.7	20.0	21.3	22.3	23.6	24.6	34.2	35.4	37.0	·37 22.40	0.14	6.29	1 37 15.97	
	β Arietis	21	21.2	23.1	24.6	34.4	35.8	36.9	38.3	39.6	49.5	51.0	52.4	47 36.98	0.10	6.29	1 47 30.59	2.94
	α Arietis	22	44.2	46.3	47.6	57.9	59.0	0.1	1.7	3.0	13.1	14.6	16.3	0 0.35	0.10	6.29	1 59 53.96	3.01
	ξ¹ Ceti.	23	1.0	2.8	4.0	13.5	14.7	15.7	17.2	18.2	28.0	29.1	31.0	6 15.93	0.12	6.30	2 6 9.51	2.80
Nov. 1	Moon I. . . .	24	36.1	. .	39.3	49.4	50.7	51.7	53.2	54.4	4.4	. .	7.5	10 51.86	0.18	6.86	22 10 44.82	
	ρ Aquarii. . . .	25	15.4	. .	18.4	28.0	29.1	30.1	31.4	32.6	42.3	. .	45.0	13 30.26	0.15	6.86	22 13 23.25	1.96
	γ Aquarii. . . .	26	. .	. .	. .	. .	. .	. .	35.5	38.0	39.3	40.4	41.6	15 38.96	33.74	6.86	22 14 58.36	1.94
	π Aquarii. . . .	27	32.4	. .	35.3	44.8	45.8	47.0	48.3	49.5	59.0	. .	1.9	18 47.11	0.11	6.86	22 18 40.14	1.96
	η Aquarii. . . .	28	34.6	. .	37.6	47.3	48.2	49.4	50.7	51.8	1.3	. .	4.2	28 49.46	0.11	6.85	22 28 42.50	2.01
	ζ Pegasi	29	52.8	. .	55.7	5.3	6.5	7.6	8.9	10.1	19.8	. .	22.6	35 7.70	0.07	6.85	22 35 0.78	2.03
	λ Aquarii. . . .	30	44.1	. .	47.0	56.5	57.7	58.9	0.2	1.3	11.0	. .	13.7	45 58.93	0.15	6.84	22 45 51.94	2.10
12	Polaris	31	. .	. .	. .	. .	. .	. .	. .	. .	39.0	. .	35.0	21 37.00	9 8.52	6.79	. . . .	63.88
	χ Ceti	32	6.5	. .	9.5	19.3	20.2	21.3	22.8	23.9	33.8	. .	36.7	43 21.56	0.17	6.79	1 43 14.60	2.65
	α Arietis	33	44.8	. .	48.0	58.2	59.2	0.7	2.1	3.3	13.6	. .	16.7	0 0.73	0.02	6.75	. . . .	3.02
	B. A. C. 728 . .	34	10.8	. .	13.7	23.3	24.4	25.6	26.9	28.1	37.9	. .	40.7	16 25.71	0.07	6.74	2 16 18.90	2.84
3	γ Piscium . . .	35	20.1	. .	23.0	32.4	33.4	34.6	36.0	37.2	46.5	. .	49.5	10 34.74	0.10	6.93	23 10 27.71	2.19
	ι Piscium . . .	36	10.3	. .	13.4	22.8	24.0	25.2	26.4	27.6	37.1	. .	40.0	33 25.20	0.09	6.93	23 33 18.18	2.33
	Moon I. . . .	37	25.6	. .	28.5	38.3	39.3	40.3	41.6	42.8	52.8	. .	55.7	48 40.54	0.14	6.94	23 48 33.46	
	ω Piscium . . .	38	32.8	. .	35.8	45.3	46.4	47.5	48.9	49.9	59.5	. .	2.3	52 47.60	0.09	6.94	23 52 40.57	2.40
	Weisse 337 . .	39	57.2	. .	0.1	9.7	10.8	12.0	13.2	14.3	24.0	. .	26.9	21 12.02	0.09	6.94	0 21 4.99	2.50
	i Piscium, (1st *) .	40	47.6	. .	51.0	. .	. .	. .	. .	. .	17.8	19.1	20.8	43 7.26	— 2.98	6.94	0 42 57.34	2.82
	i Piscium, (2d *) .	41	. .	. .	. .	1.9	3.0	4.2	5.7	7.1	. .	. .	. .	43 4.38	+ 0.04	6.94	0 42 57.48	2.82
	ε Piscium . . .	42	6.5	. .	9.8	19.0	20.3	21.4	22.8	24.0	33.5	. .	36.5	56 21.53	— 0.08	6.94	0 56 14.51	2.63
	Lacaille 310 . .	43	47.7	. .	51.1	1.5	2.8	4.0	5.4	6.7	16.9	. .	20.2	1 4.03	0.24	6.94	1 0 56.85	2.59
	Polaris	44	. .	. .	. .	. .	. .	. .	. .	. .	39.0	29.0	38.0	21 35.33	9 5.53	6.95	. . . .	63.20
	Neptune . . .	45	44.0	. .	46.7	56.3	57.6	58.6	0.0	1.2	10.7	. .	13.4	15 58.72	.0.09	6.95	1 15 51.68	
	η Piscium . . .	46	. .	. .	. .	. .	. .	. .	12.7	15.4	16.6	17.9	19.2	25 16.36	34.78	6.95	1 24 34.63	2.80
Y.	ο Piscium . . .	47	26.7	28.7	29.8	39.3	40.4	41.6	42.8	44.0	53.6	54.8	56.5	38 41.65	0.10	6.85	. . . .	2.77
	β Arietis	48	21.8	23.9	25.0	35.0	36.1	37.3	38.7	40.0	50.3	51.6	53.3	47 37.55	0.05	6.85	. . . .	2.95
4	69 Pegasi	49	6.2	. .	9.6	20.0	21.3	22.4	23.8	25.2	35.7	. .	38.6	21 22.53	0.01	7.13	23 21 15.39	2.32
Sk.	ω Piscium . . .	50	. .	. .	. .	. .	46.5	47.6	48.9	50.1	22.0	23.2	24.3	53 3.23	— 15.52	— 7.13	23 52 40.58	— 2.39

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Oct. 28, 18.3	— 4.78	. .	+ 0.13	— 0.14
31, 21.0	— 6.22	— 0.025	+ 0.13	— 0.14
31, 1.8	— 6.29	— 0.025	+ 0.13	— 0.14
Nov. 1, 23.2	— 6.83	+ 0.030	+ 0.24	— 0.13
3, 0.4	— 6.94	— 0.008	+ 0.24	— 0.13

October 25, 13ʰ. Image east 0ʳ.22. Clamp east.
Image east 0ʳ.20. Clamp west.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Nov. 4	α Andromedæ . .	1	33.2	. .	36.7	47.5	48.7	49.9	51.3	52.6	3.6	. .	6.9	1 50.04	0.00	− 7.13	0 1 42.91	− 2.62
Sk.	γ Pegasi	2	26.9	. .	30.0	40.0	41.2	42.2	43.4	44.8	54.5	. .	57.6	6 42.29	− 0.05	7.13	0 6 35.11	2.50
	Moon I. . . .	3	32.5	. .	35.6	45.3	46.3	47.6	48.8	49.8	59.6	. .	2.5	34 47.55	0.12	7.13	0 34 40.30	
	i Piscium, (1st *) .	4	. .	. .	51.5	. .	. .	. .	. .	. .	17.9	19.0	20.9	43 12.32	7.85	7.13	0 42 57.34	2.81
	i Piscium, (2d *) .	5	. .	. .	. .	2.2	3.5	4.6	6.0	7.3	. .	. .	. .	43 4.72	0.00	7.13	0 42 57.59	2.81
	ε Piscium . . .	6	7.0	. .	9.8	19.3	20.5	21.7	23.0	23.9	33.9	. .	36.7	56 21.75	− 0.08	7.13	0 56 14.54	2.63
	Polaris	7	. .	. .	. .	50.5	34.0	22.0	12.5	58.0	. .	. .	. .	12 23.40	+ 6.87	7.13	. . . .	62.89
Y. 5	ε Piscium . . .	8	. .	. .	. .	33.7	35.0	36.6	52.2	54.7	56.0	57.1	58.4	56 47.96	− 26.26	7.19	. . . .	2.63
St.	ζ Piscium . . .	9	51.6	. .	54.6	5.4	6.5	7.8	9.0	10.2	18.3	. .	21.3	7 7.19	0.08	7.22	. . . .	2.67
	Polaris	10	. .	. .	. .	45.0	32.0	. .	. .	. .	. .	. .	30.0	14 55.67	2 29.17	7.22	. . . .	62.61
	Neptune . . .	11	32.6	35.7	. .	45.1	46.2	47.3	48.4	49.6	59.3	. .	2.2	15 47.38	0.09	7.22	1 15 40.07	
	Vesta	12	6.3	7.4	8.5	9.8	10.9	. .	38.6	41.1	42.3	43.6	44.8	33 25.33	16.91	7.22	1 33 1.20	
	Weisse 753. . .	13	. .	. .	. .	8.0	9.2	10.3	11.7	12.8	. .	. .	. .	43 10.40	0.17	7.22	1 43 3.01	2.67
	β Arietis	14	. .	. .	. .	. .	. .	. .	9.8	12.4	14.0	15.3	15.6	48 13.62	35.78	7.22	. . . .	2.96
	α Arietis	15	. .	. .	. .	58.7	0.0	1.2	2.6	3.9	14.2	15.4	17.3	0 6.66	5.39	7.22	. . . .	3.04
7	λ Aquarii. . . .	16	. .	. .	. .	10.8	11.9	13.5	29.2	31.7	33.0	34.0	35.4	46 24.94	26.39	6.60	22 45 51.95	2.04
	ι Piscium . . .	17	10.0	. .	12.9	22.4	23.4	24.5	26.1	27.2	36.7	. .	39.4	33 24.73	0.09	6.60	23 33 18.04	2.29
	Lalande 221 . .	18	. .	. .	. .	2.8	4.1	5.5	7.2	8.4	20.5	21.8	24.0	10 11.79	6.08	6.59	0 9 59.12	2.75
	Weisse 337 . .	19	57.0	. .	0.0	9.3	10.4	11.5	13.0	14.1	23.6	. .	26.5	21 11.71	0.09	6.59	0 21 5.03	2.48
	ε Piscium . . .	20	6.3	. .	9.4	18.9	19.8	21.1	22.3	23.4	33.2	. .	35.9	56 21.14	0.08	6.59	0 56 14.47	2.62
	Lacaille 310 . .	21	47.6	. .	50.7	1.3	2.5	3.7	5.3	6.4	17.1	18.3	20.1	1 5.30	1.68	6.59	1 0 57.03	2.58
	Polaris	22	. .	. .	. .	. .	. .	. .	. .	. .	37.0	23.0	32.0	21 30.67	9 5.73	6.59	. . . .	62.15
	Neptune . . .	23	20.9	. .	24.0	33.5	34.7	35.6	36.9	38.1	48.0	. .	50.5	15 35.80	0.09	6.59	1 15 29.12	
	θ Ceti	24	. .	. .	. .	38.5	39.5	40.8	42.1	43.3	. .	. .	. .	17 40.84	0.11	6.59	1 17 34.14	2.61
	η Piscium . . .	25	. .	. .	. .	53.6	54.6	56.6	12.5	14.9	16.5	17.5	18.8	25 8.12	26.89	6.59	1 24 34.64	2.80
	Vesta	26	18.3	. .	21.5	31.0	32.1	33.4	34.4	35.6	45.1	. .	48.2	31 33.29	0.12	6.59	1 31 26.58	
	ξ^1 Ceti	27	. .	. .	. .	13.9	14.9	16.1	17.5	18.5	. .	. .	. .	6 16.18	0.04	6.58	2 6 9.56	2.84
	γ Ceti	28	28.6	. .	31.6	41.2	42.2	43.3	44.6	45.8	55.0	. .	58.2	36 43.39	0.10	6.58	2 36 36.71	2.81
	Moon I. . . .	29	45.6	. .	48.5	. .	. .	1.0	2.2	3.3	13.4	14.5	16.4	52 3.11	2.23	6.58	2 51 54.30	
8	θ Aquarii. . . .	30	51.8	. .	54.8	4.3	5.5	6.5	7.8	8.9	18.8	. .	21.6	10 6.67	0.15	6.29	22 10 0.23	1.85
Sk.	Weisse 449 . .	31	43.6	44.9	46.2	48.3	. .	. .	. .	49.4	50.9	53.3	54.4	22 18.88	0.43	6.29	22 22 12.16	1.94
	*—10° 49′ . .	32	4.5	. .	7.6	17.4	18.6	19.6	21.0	22.0	31.7	. .	34.8	22 19.69	0.16	6.29	22 22 13.24	1.94
	λ Aquarii. . . .	33	43.4	. .	46.4	56.0	57.0	58.2	59.5	0.6	10.3	. .	13.0	45 58.27	0.15	6.29	22 45 51.83	2.03
	α Pegasi	34	10.4	. .	13.6	23.2	24.4	25.7	26.9	28.1	38.0	. .	40.8	58 25.68	0.05	6.28	22 58 19.35	2.09
	ι Piscium . . .	35	9.7	. .	12.7	22.2	23.3	24.4	25.8	26.8	36.5	. .	39.4	33 24.53	0.09	6.28	23 33 18.16	2.28
	Weisse 377. . .	36	46.0	. .	49.0	58.4	59.5	0.7	2.2	3.3	12.7	. .	15.7	24 0.83	0.12	6.27	0 23 54.44	2.46
	Weisse 574. . .	37	16.2	. .	19.4	29.0	30.0	31.3	32.6	33.8	43.6	. .	46.3	34 31.36	0.06	6.27	0 34 25.03	2.57
	Weisse 878. . .	38	7.4	. .	10.3	19.8	20.9	22.6	23.4	24.5	34.0	. .	36.8	51 22.12	− 0.08	6.26	0 51 15.78	2.61
	Polaris	39	. .	. .	. .	40.5	27.0	16.0	8.5	. .	. .	. .	. .	11 53.00	+ 31.38	6.26	. . . .	1.92
	Neptune . . .	40	. .	. .	. .	42.0	43.2	44.9	0.4	2.8	4.1	5.3	6.5	15 56.15	− 26.21	6.26	1 15 23.68	
	Weisse 753. . .	41	34.0	35.5	36.8	38.9	. .	. .	. .	40.0	42.5	43.9	45.1	43 9.59	0.44	6.25	1 43 2.90	2.66
	χ Ceti	42	6.0	. .	9.0	18.5	19.7	20.9	22.2	23.4	33.1	. .	35.9	43 20.97	0.17	6.25	1 43 14.55	2.66
	O. Arg. S. 1388 .	43	7.3	. .	10.3	. .	. .	. .	. .	. .	37.7	38.8	41.0	6 27.02	3.33	6.25	2 6 17.44	2.69
	B. A. C. 728 . .	44	10.4	. .	13.5	23.0	24.0	25.3	26.5	27.5	37.6	. .	40.2	16 25.33	0.07	6.25	2 16 19.01	2.88
	γ Ceti	45	28.4	. .	31.4	40.8	41.9	43.0	44.4	45.3	55.2	. .	57.8	36 43.13	0.10	6.24	2 36 36.79	2.82
	α Ceti	46	23.6	. .	26.7	36.0	37.1	38.2	39.4	40.6	50.2	. .	52.9	55 38.30	0.10	6.24	2 55 31.96	2.84
	Moon II . . .	47	35.7	. .	38.8	48.7	49.8	51.2	52.5	53.8	3.9	. .	6.9	41 51.26	− 0.05	6.23	3 41 44.98	
	ζ Persei	48	50.3	. .	53.8	4.8	6.2	7.5	8.8	10.4	21.5	. .	24.8	46 7.57	+ 0.02	6.23	3 46 1.36	3.42
9	λ Aquarii. . . .	49	42.6	. .	45.7	55.1	56.2	57.5	58.8	0.0	9.7	. .	12.5	45 57.57	− 0.15	5.59	22 45 51.83	2.01
St.	α Pegasi	50	9.7	. .	12.7	22.3	23.5	24.7	26.1	27.2	37.2	. .	40.0	58 24.82	− 0.05	− 5.59	22 58 19.18	− 2.07

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Nov. 4, 0.2	− 7.13	− 0.004	+ 0.24	− 0.13
5, 1.9	− 7.22	0.000	+ 0.24	− 0.13
7, 0.9	− 6.59	+ 0.007	+ 0.24	− 0.13
8, 1.0	− 6.26	+ 0.012	+ 0.24	− 0.13

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Nov. 9 St.	*+54° 4′ . . .	1	50.0	. .	55.0	. .	. .	. .	. .	. .	35.4	. .	40.3	20 15.18	+ 0.05	— 5.58	23 20 9.65	— 2.67
	*+54° 1′ . . .	2	18.4	20.7	24.4	. .	. .	. .	. .	. .	14.8	18.8	21.0	21 19.68	— 0.34	5.58	23 21 13.76	2.68
	ι Piscium . . .	3	9.0	. .	12.0	21.5	22.7	23.7	25.0	26.1	35.7	. .	38.5	33 23.80	0.09	5.57	23 33 18.14	2.27
	*+35° 46′ . . .	4	. .	. .	. .	8.4	9.8	11.7	31.0	33.7	35.3	37.0	38.6	11 25.69	31.97	5.55	0 10 48.17	2.74
	*+ 2° 5′ . . .	5	17.9	. .	20.8	30.1	31.3	32.5	33.7	34.9	44.5	. .	47.3	35 32.56	0.10	5.54	0 35 26.92	2.52
	*+1° 38′ . . .	6	. .	. .	. .	. .	. .	. .	. .	. .	29.5	30.7	32.0	35 30.72	— 35.18	5.54	0 34 50.00	2.51
	Polaris	7	. .	. .	. .	42.0	26.0	13.0	10.0	. .	. .	. .	. .	11 52.75	+ 31.38	5.52	. . . .	61.69
	Neptune . . .	8	. .	. .	. .	21.6	22.7	23.9	25.1	26.2	. .	. .	. .	15 23.90	— 0.05	5.52	1 15 18.33	
	Lalande 2559 . .	9	43.9	45.2	47.1	48.8	51.4	. .	5.2	8.2	9.7	11.1	12.7	18 28.33	0.31	5.52	1 18 22.50	3.16
	γ Tauri	10	17.9	. .	20.1	29.9	31.0	32.2	33.5	34.8	44.7	. .	47.6	12 32.31	0.05	5.43	4 12 26.83	3.03
	*+17° 52′ . . .	11	. .	. .	. .	. .	. .	. .	33.4	36.0	37.4	38.6	40.0	13 37.08	35.33	5.43	4 12 56.32	3.08
	ε Tauri	12	7.6	9.0	10.2	11.6	13.0	. .	42.2	44.8	46.0	47.3	48.7	21 28.04	17.77	5.42	4 21 4.85	3.08
	Moon II . . .	13	9.9	11.6	13.0	23.2	24.2	25.4	26.8	28.3	38.4	39.5	41.6	31 25.63	0.05	5.42	4.31 20.16	
12 Sk.	θ Aquarii. . . .	14	51.6	. .	54.7	4.0	5.2	6.3	7.7	8.9	18.5	. .	21.4	10 6.48	0.15	6.25	22 10 0.08	1.80
	Weisse 449, (1st *)	15	. .	43.5	44.9	46.2	48.3	. .	49.4	51.8	53.3	54.5	. .	22 18.99	0.43	6.25	22 22 12.31	1.88
	Weisse 449, (2d *)	16	4.6	. .	7.9	17.3	18.5	19.6	20.8	22.0	31.9	. .	34.7	22 19.70	0.16	6.25	22 22 13.29	1.88
	*+57° 47′ . . .	17	. .	. .	. .	. .	. .	. .	. .	. .	0.5	2.5	5.7	41 2.90	24.70	6.25	22 40 31.95	2.12
	*+57° 47′ . . .	18	. .	. .	. .	. .	. .	. .	34.7	39.7	41.6	43.9	46.4	41 41.26	1 2.85	6.25	22 40 32.16	2.12
	λ Aquarii. . . .	19	43.4	. .	46.3	56.0	57.0	58.2	59.5	0.6	10.4	. .	13.1	45 58.28	— 0.15	6.25	22 45 51.88	1.98
	*+54° 1′ . . .	20	50.6	. .	55.8	11.9	13.5	15.7	17.9	19.8	35.9	. .	41.0	21 15.79	+ 0.13	6.25	23 21 9.67	2.61
	*+53° 59′ . . .	21	. .	. .	. .	30.9	32.9	34.9	37.2	39.1	. .	. .	. .	22 35.00	0.19	6.25	23 22 28.94	2.62
	Groombridge 34 .	22	47.4	. .	51.2	4.2	5.8	7.2	8.9	10.6	24.3	. .	27.7	11 7.48	+ 0.08	6.26	0 11 1.30	2.86
	Weisse 306. . .	23	9.8	. .	12.7	22.2	23.3	24.6	25.8	27.0	36.7	. .	39.4	19 24.61	— 0.16	6.26	0 19 18.19	2.40
	*+2° 5′. . . .	24	18.7	. .	21.7	31.0	32.1	33.2	34.6	35.5	45.4	. .	47.9	35 33.35	0.10	6.26	0 35 26.99	2.50
	ε Piscium . . .	25	6.0	. .	9.0	18.5	19.5	20.5	22.0	23.2	32.7	. .	35.7	56 20.79	— 0.08	6.26	0 56 14.45	2.61
	Polaris	26	10.0	. .	4.0	. .	. .	. .	. .	. .	. .	. .	. .	3 7.00	+ 9 15.53	6.27	. . . .	60.72
	Neptune . . I	27	54.0	. .	57.0	6.4	7.4	8.6	9.8	11.0	20.6	. .	23.6	15 8.71	— 0.09	6.27	1 15 2.35	
	Lalande 2559 . .	28	10.5	. .	14.0	26.0	27.1	28.5	30.2	31.7	43.5	. .	46.9	18 28.71	+ 0.03	6.27	1 18 22.47	2.93
	β Arietis	29	21.2	. .	24.6	34.6	35.8	37.2	38.4	39.9	49.8	. .	52.9	47 37.16	— 0.03	6.27	1 47 30.86	2.97
	50 Cassiopeæ . . .	30	48.7	. .	57.8	28.3	32.4	35.3	39.0	42.9	13.6	. .	23.0	52 35.67	+ 0.37	6.27	1 52 29.77	6.70
	α Arietis	31	44.1	. .	47.5	57.4	58.6	0.2	1.6	2.9	12.9	. .	16.3	0 0.17	— 0.02	6.27	. . . .	3.06
14	θ Aquarii. . . .	32	52.7	54.6	55.9	5.3	6.4	7.6	8.7	10.0	19.6	20.9	22.6	10 7.66	0.17	7.39	. . . .	1.78
	η Aquarii. . . .	33	. .	. .	. .	47.4	48.7	49.8	51.2	52.2	. .	. .	. .	28 49.86	0.07	7.40	. . . .	1.85
	α Arietis	34	45.6	47.5	48.7	59.0	0.2	1.4	2.9	4.1	14.5	15.8	17.4	0 1.55	0.04	7.48	. . . .	3.07
	*—29° 39′ . . .	35	43.9	45.3	46.9	48.2	50.6	. .	59.5	2.5	4.0	5.3	6.9	6 25.31	0.59	7.49	2 6 17.23	2.69
	*—29° 39′ . . .	36	. .	19.0	20.5	. .	. .	. .	. .	. .	51.0	53.2	. .	6 35.92	0.37	7.49	2 6 28.06	2.69
Y.	Polaris, S. P. . .	†37	. .	. .	. .	. .	40.0	33.0	20.0	4.0	. .	. .	. .	12 54.25	22.26	7.67	. . . .	59.51
	α Virginis . . .	†38	. .	. .	. .	41.4	42.5	44.3	59.8	2.3	3.6	4.9	6.2	18 55.62	26.57	7.67	. . . .	0.54
15 St.	λ Aquarii. . . .	39	45.4	47.1	48.3	57.8	59.0	0.0	1.4	2.5	12.2	13.3	15.0	46 0.18	0.15	8.17	. . . .	1.94
	*—35° 53′ . . .	40	. .	. .	. .	39.6	40.9	42.3	44.2	45.3	. .	. .	. .	21 42.46	0.15	8.18	23 21 34.13	2.23
	ι Piscium . . .	41	11.6	13.3	14.5	23.9	25.0	26.1	27.4	28.7	38.5	39.6	41.2	33 26.35	0.13	8.18	. . . .	2.22
	*+35° 46′ . . .	42	12.5	14.4	15.9	27.6	29.0	. .	32.1	33.4	45.3	46.6	48.7	10 30.55	0.11	8.20	0 10 22.24	2.67
	*+35° 46′ . . .	43	38.1	40.4	41.9	53.5	54.8	56.3	57.8	59.3	11.2	12.5	14.5	10 56.39	— 0.10	8.20	0 10 48.09	2.67
	Polaris	44	. .	. .	. .	49.0	36.0	21.0	16.0	. .	. .	. .	. .	12 0.50	+ 24.74	8.22	. . . .	— 59.24
16 Sk.	ρ Leonis	45	53.4	. .	56.3	6.0	7.0	8.1	9.4	10.6	20.1	. .	23.3	26 8.24	— 0.10	8.82	. . . .	+ 1.40
	Moon II . . .	46	3.0	. .	6.1	16.0	17.0	18.2	19.7	20.9	31.1	. .	33.9	50 18.43	0.14	8.83	10 50 9.46	
	δ Leonis	47	5.9	. .	9.0	19.2	20.2	21.7	22.8	24.2	34.2	. .	37.4	7 21.62	0.09	8.83	. . . .	— 1.13
	δ Crateris . . .	48	45.5	. .	48.4	58.3	59.4	0.5	1.9	3.0	12.9	. .	15.8	13 0.63	0.14	8.83	. . . .	1.09
18	π Aquarii. . . .	49	34.6	. .	37.6	46.9	48.2	49.2	50.4	51.6	1.2	. .	4.1	18 49.31	0.11	9.25	22 18 39.95	1.74
	*—21° 40′ . . .	50	. .	. .	. .	58.9	0.2	1.8	18.7	21.2	22.5	23.8	25.3	36 14.05	— 28.09	— 9.25	22 35 36.71	— 1.90

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
h.	s.	s.	s.	s.
Nov. 9, 1.2	— 5.52	+ 0.031	+ 0.24	— 0.13
12, 0.3	— 6.26	— 0.006	+ 0.24	— 0.13
14, 23.6	— 7.43	— 0.023	+ 0.24	— 0.13
15, 23.2	— 8.18	— 0.019	+ 0.08	— 0.13
16, 10.9	— 8.83	— 0.015	+ 0.08	— 0.13

37. Through clouds.
38. Through clouds.
Image east 0ʳ.34. Clamp east.
Image east 0ʳ.28. Clamp west.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	CORRECTIONS. Clock.	Observed Right Ascension.	Reduction to 1870.0.
														m. s.	m. s.	s.	h. m. s.	s.
1870. Nov. 18 Sk.	λ Aquarii	1	46.2	. .	49.3	58.8	0.0	0.9	2.2	3.5	13.3	. .	16.1	46 1.14	− 0.13	− 9.26	22 45 51.75	− 1.91
	α Pegasi	2	13.1	. .	16.4	26.1	27.1	28.3	29.8	30.9	40.8	. .	43.6	58 28.46	0.09	9.26	22 58 19.11	1.97
	*−35° 53′	3	25.5	. .	28.8	40.6	42.0	43.6	45.1	46.5	58.2	. .	1.7	22 43.56	0.20	9.26	23 22 34.10	2.19
	α Andromedæ	4	35.3	. .	38.6	49.6	50.7	52.0	53.6	54.8	5.7	. .	9.0	1 52.14	0.08	9.27	0 1 42.79	2.49
	γ Pegasi	5	29.3	. .	32.3	41.9	43.2	44.2	45.6	46.9	56.7	. .	59.7	6 44.42	0.09	9.27	0 6 35.06	2.38
	*+35° 46′	6	. .	. .	. .	. .	. .	. .	8.8	11.8	13.4	15.1	16.6	11 13.14	41.48	9.27	0 10 22.39	2.64
	*+35° 46′	7	. .	. .	. .	. .	. .	. .	. .	37.5	39.1	40.6	42.3	11 39.88	42.54	9.27	0 10 48.07	2.64
	B. A. C. 167	8	22.9	. .	25.7	. .	36.2	37.3	38.6	. .	49.7	. .	52.4	32 37.54	0.12	9.27	0 32 28.15	2.45
	Weisse 648	9	22.2	. .	25.0	34.6	35.6	36.8	38.1	39.2	49.0	. .	51.7	38 36.91	0.11	9.27	0 38 27.53	2.47
	Weisse 677	10	. .	. .	. .	27.3	28.6	30.2	45.6	48.1	49.4	50.6	52.0	40 41.48	26.20	9.27	0 40 6.01	2.46
	Weisse 878	11	9.9	11.8	13.2	22.7	24.0	25.0	26.3	27.5	37.1	38.4	40.0	51 25.08	− 0.12	9.28	0 51 15.68	2.57
	Polaris	12	12.0	34.0	12.5	. .	. .	. .	. .	. .	. .	. .	. .	3 19.50	+ 9 4.74	9.28	. . . .	57.67
	Neptune	13	27.3	. .	30.1	39.8	40.9	42.0	43.2	44.4	54.0	. .	56.9	14 42.07	− 0.10	9.28	1 14 32.69	
	Lalande 2612	14	. .	24.0	25.4	26.2	28.4	. .	28.4	31.0	32.2	33.2	. .	19 58.60	0.38	9.28	1 19 48.94	2.63
	B. A. C. 433	15	45.6	. .	48.4	57.8	59.0	0.1	1.3	2.7	12.2	. .	14.9	20 0.22	− 0.11	9.28	1 19 50.83	2.63
	*+14° 59′	16	16.1	17.3	19.0	. .	. .	. .	. .	. .	. .	. .	. .	25 17.47	+ 13.49	9.28	1 25 21.68	2.80
	*+14° 59′	17	. .	. .	. .	15.5	16.6	17.7	18.9	20.4	. .	. .	. .	26 17.82	− 0.05	9.28	1 26 8.49	2.80
	*+14° 59′	18	. .	38.7	40.2	41.6	43.7	. .	. .	. .	. .	. .	. .	26 41.05	+ 33.44	9.28	1 27 5.21	2.80
	*+14° 59′	19	. .	. .	. .	22.2	23.5	24.9	26.2	. .	. .	. .	. .	27 24.20	+ 0.56	9.28	1 27 15.48	2.81
	Weisse 147	20	13.7	. .	16.9	26.4	27.4	28.4	29.8	31.0	40.5	. .	43.2	11 28.59	− 0.11	9.29	2 11 19.19	2.81
	Weisse 464	21	. .	. .	. .	7.3	8.4	9.6	10.7	12.0	21.6	22.8	24.5	29 14.61	5.08	9.29	2 29 0.24	2.90
	Weisse (2) 718	22	. .	. .	. .	59.2	0.5	1.9	3.3	4.6	15.6	17.1	19.0	31 7.65	5.84	9.29	2 30 52.52	3.35
	γ Ceti	23	31.5	. .	34.5	43.9	45.2	46.2	47.4	48.7	58.1	. .	1.0	36 46.28	0.11	9.29	2 36 36.88	2.87
	Lalande 5490	24	16.4	. .	22.4	42.2	44.5	46.8	49.4	52.0	11.8	. .	17.0	53 46.94	0.09	9.30	2 53 37.55	5.32
	α Ceti	25	26.7	. .	29.6	38.9	40.2	41.5	42.8	43.8	53.3	. .	56.2	55 41.44	0.11	9.30	2 55 32.03	2.92
24 Y.	ε Piscium	26	22.0	23.1	24.4	25.6	26.8	. .	54.9	57.3	58.6	59.7	1.0	56 41.34	− 17.01	9.95	. . . .	2.55
	Polaris	27	. .	. .	. .	47.0	34.0	21.0	10.0	54.0	. .	. .	. .	12 21.20	+ 0.23	9.95	. . . .	55.08
	θ Ceti	28	29.3	31.1	32.3	41.7	42.9	44.2	45.4	46.4	56.4	57.6	59.3	17 44.24	− 0.15	9.95	. . . .	− 2.55
26 Sk.	α Lyræ	29	23.0	25.4	27.0	38.8	40.2	41.9	43.4	44.8	57.0	58.5	0.7	32 41.88	0.10	9.94	18 32 31.84	+ 0.33
	α Aquilæ	30	22.3	24.0	25.4	34.8	35.9	37.1	38.4	39.6	49.2	50.5	52.1	44 37.21	0.12	9.94	19 44 27.15	− 0.74
	Moon I.	31	45.6	47.4	48.8	59.6	0.7	1.9	3.4	4.7	15.5	16.6	18.6	55 2.07	0.18	9.94	19 54 51.95	
	π Aquarii	32	35.3	37.0	38.1	47.5	48.8	49.8	51.0	52.2	1.8	3.0	4.7	18 49.93	0.13	9.94	22 18 39.86	1.64
	*−21° 40′	33	31.0	32.9	34.0	44.2	45.5	46.7	48.2	49.3	59.6	0.9	2.6	35 46.81	0.17	9.94	22 35 36.70	1.79
	λ Aquarii	34	46.9	48.8	50.0	59.6	0.6	1.6	3.0	4.2	13.7	14.9	16.7	46 1.82	0.15	9.94	22 45 51.73	1.81
	ι Piscium	35	13.2	15.1	16.2	25.7	26.7	27.8	29.2	30.4	39.9	41.2	42.8	33 28.02	0.13	9.94	23 33 17.95	2.10
	Weisse 306	36	13.0	14.9	16.0	25.8	26.8	27.9	29.4	30.4	40.0	41.3	42.8	19 28.03	0.15	9.94	0 19 17.94	2.29
	B. A. C. 167	37	23.4	25.1	26.3	35.8	36.9	38.1	39.3	40.5	50.1	51.3	52.9	32 38.15	0.13	9.94	0 32 28.08	2.39
	Weisse 648	38	22.8	24.6	25.8	35.2	36.3	37.4	38.7	39.9	49.4	50.7	52.3	38 37.55	0.13	9.94	0 38 27.48	2.42
	Weisse 677	39	. .	. .	. .	27.9	29.1	30.8	46.4	48.9	50.1	51.2	52.4	40 42.10	26.19	9.94	0 40 5.97	2.40
	Neptune	40	53.1	55.0	56.0	5.6	6.7	7.8	9.1	10.3	19.9	21.2	22.8	14 7.95	0.12	9.94	1 13 57.89	
	*+14° 59′	41	2.9	4.8	6.1	16.0	17.1	18.2	19.6	20.8	30.7	31.8	33.6	26 18.33	0.11	9.94	1 26 8.28	2.77
	*+14° 59′	42	. .	. .	. .	. .	. .	. .	46.7	49.2	50.5	51.7	53.0	27 50.22	34.89	9.94	1 27 5.39	2.77
	Polaris	43	. .	. .	. .	. .	. .	. .	. .	. .	51.0	42.0	34.0	36 42.33	24 20.60	9.94	. . . .	53.95
	β Arietis	44	25.0	27.0	28.2	38.2	39.4	40.5	42.0	43.2	53.4	54.8	56.4	47 40.74	0.11	9.94	1 47 30.69	2.96
	Weisse 1075	45	56.7	58.4	59.6	8.9	9.9	11.0	12.3	13.5	23.0	24.2	25.8	1 11.21	− 0.13	9.94	2 1 1.14	2.75
	*−29° 39′	46	10.5	12.4	13.7	24.5	26.0	27.5	28.8	30.1	. .	. .	. .	6 21.69	+ 5.51	9.94	2 6 17.26	2.66
	*−29° 39′	47	. .	. .	. .	36.1	. .	38.6	. .	41.2	52.1	53.6	55.7	6 46.22	− 7.71	9.94	2 6 28.57	2.66
	Weisse 147	48	14.4	16.2	17.4	26.7	27.9	29.0	30.2	31.4	41.2	42.3	44.0	11 29.15	0.13	9.94	2 11 19.08	2.81
	Weisse 464	49	55.6	57.4	58.7	7.9	9.2	10.3	11.6	12.6	22.4	23.6	25.3	29 10.42	0.12	9.94	2 29 0.36	2.92
	Weisse (2) 718	50	. .	. .	. .	59.9	1.2	2.5	4.1	5.1	. .	. .	. .	31 2.56	− 0.04	− 9.94	2 30 52.58	− 3.37

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Nov. 18, 0.2	− 9.27	− 0.010	+ 0.08	− 0.13
24, 1.1	− 9.95	. . .	+ 0.08	− 0.13
26, 22.8	− 9.94	− 0.002	+ 0.08	− 0.13

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	CORRECTIONS. Inst.	Clock.	Observed Right Ascension.	Reduction to 1870.0.
1870.														m. s.	m. s.	s.	h. m. s.	s.
Nov. 26 Sk.	γ Ceti.	1	32.2	34.0	35.2	44.7	45.9	46.8	47.9	49.3	58.7	0.0	1.8	36 46.95	— 0.13	— 9.94	2 36 36.88	— 2.89
28 F.	Moon I. . . .	2	46.3	48.2	49.5	59.5	0.8	1.9	3.4	4.6	14.8	16.0	17.8	52 2.07	0.20	9.67	21 51 52.20	
	α Aquarii . . .	3	3.0	4.6	5.9	15.3	16.5	17.6	18.8	19.9	29.5	30.8	32.4	59 17.66	0.13	9.67	21 59 7.86	1.50
	θ Aquarii . . .	4	54.9	56.7	57.9	7.4	8.5	9.7	11.1	12.0	21.8	23.0	24.7	10 9.79	0.15	9.67	22 9 59.97	1.60
	π Aquarii . . .	5	35.0	36.6	37.9	47.2	48.4	49.5	50.9	52.0	1.4	2.6	4.4	18 49.63	0.13	9.67	22 18 39.83	1.62
	η Aquarii . . .	6	. .	39.0	40.3	49.7	50.8	51.9	53.1	54.3	4.0	5.1	. .	28 52.02	— 0.13	9.67	22 28 42.22	1.68
	Lalande 1966 . .	7	6.0	10.0	12.3	32.0	34.0	36.7	39.3	41.6	1.4	3.8	7.0	1 36.74	+ 0.07	9.67	1 1 27.14	3.96
	Polaris	8	. .	. .	. .	39.0	26.0	13.0	7.0	. .	. .	. .	. .	11 51.25	+ 29.34	9.67	. . . .	52.62
	Neptune . . .	9	. .	. .	. .	57.3	58.5	59.7	0.9	2.0	11.7	12.9	14.6	14 4.70	— 5.08	9.67	1 13 49.95	
	θ Ceti.	10	28.9	30.8	32.0	41.5	42.7	43.8	45.0	46.2	56.0	57.2	58.8	17 43.90	— 0.15	9.67	1 17 34.08	2.53
	Lalande 2751 . .	11	48.1	52.9	56.2	22.2	24.6	27.5	31.1	34.4	. .	. .	. .	25 14.62	+ 13.53	9.67	1 25 18.48	5.19
	12-year cat. 150 .	12	. .	. .	. .	31.6	34.1	36.7	39.5	41.9	. .	. .	. .	38 36.76	+ 0.21	9.67	1 38 27.30	4.72
	β Arietis	13	. .	26.6	27.9	37.9	39.1	40.3	41.7	42.9	53.0	54.3	. .	47 40.41	— 0.07	9.67	1 47 30.67	2.95
	α Arietis	14	47.8	49.8	51.0	1.1	2.4	3.6	4.9	6.2	16.7	17.9	19.8	0 3.75	0.06	9.67	1 59 54.02	3.06
	Weisse 1075 . .	15	56.2	57.8	59.1	8.6	9.7	10.7	12.0	13.2	22.9	23.8	25.6	1 10.87	— 0.13	9.67	2 1 1.07	2.75
	Lalande 3987 . .	16	44.2	48.5	51.9	15.8	19.0	21.9	25.1	28.2	52.7	55.4	0.1	5 22.07	+ 0.12	9.67	2 5 12.52	5.65
Sk. 29 Y.	Moon I. . . .	17	47.2	. .	43.0	. .	. .	18.4	. .	. .	34.0	. .	50.0	44 18.52	— 0.27	8.90	22 44 9.35	
	Polaris	†18	. .	. .	. .	38.0	26.0	11.0	6.0	. .	. .	. .	. .	11 50.25	+ 31.14	8.81	. . . .	51.92
	α Pegasi	19	57.1	. .	13.8	. .	. .	28.0	. .	. .	43.0	. .	59.0	58 28.18	— 0.19	8.89	. . . .	1.82
	ι Piscium . . .	20	57.0	. .	12.0	. .	. .	26.8	. .	. .	42.2	. .	57.0	33 27.00	0.21	8.87	. . . .	2.06
	ω Piscium . . .	21	19.3	. .	34.4	. .	. .	49.0	. .	. .	4.2	. .	20.0	52 49.38	0.20	8.86	. . . .	2.17
Dec. 1 Sk.	ι Piscium . . .	22	11.9	13.7	15.0	24.4	25.5	26.6	28.0	29.0	38.7	39.8	41.4	33 26.73	0.12	8.65	23 33 17.96	2.04
	ω Piscium . . .	23	34.3	36.0	37.2	46.6	47.9	49.0	50.2	51.4	1.0	2.3	3.8	52 49.06	0.11	8.65	23 52 40.30	2.15
	α Andromedæ . .	24	34.4	36.4	37.9	48.6	50.0	51.1	52.6	53.9	4.9	6.3	8.0	1 51.28	0.05	8.65	1 1 42.58	2.34
	Groombridge 34 .	25	49.6	52.0	53.4	6.5	8.0	9.5	11.4	13.1	26.1	27.5	30.0	11 9.74	0.00	8.65	0 11 1.09	2.58
	Moon I. . . .	26	49.8	51.5	52.8	2.5	3.6	4.6	6.0	7.1	16.9	18.2	19.8	20 4.80	0.14	8.65	0 19 56.01	
	β Ceti.	27	59.5	1.1	2.5	12.3	13.5	14.7	16.0	17.4	27.7	28.7	30.4	37 14.89	— 0.20	8.65	0 37 6.04	2.33
	Polaris	28	10.0	11.0	2.0	30.0	. .	. .	. .	. .	. .	. .	. .	49 43.25	+22 33.72	8.65	. . . .	50.53
	ε Piscium . . .	29	8.3	10.1	11.3	20.8	21.8	23.0	24.3	25.5	35.1	36.3	37.9	56 23.13	— 0.11	8.65	0 56 14.37	2.50
	Lalande 1966 . .	30	5.8	8.9	11.2	31.2	33.0	35.5	38.3	40.2	0.1	2.6	5.9	1 35.70	+ 0.07	8.65	1 1 27.12	3.89
	Neptune . . .	31	33.0	34.9	35.9	45.6	46.6	47.8	49.0	50.2	59.9	1.0	2.6	13 47.86	— 0.11	8.65	1 13 39.10	
	*+ 5° 57′ . . .	32	. .	. .	. .	4.8	6.0	7.2	8.3	9.6	. .	. .	. .	14 7.18	— 0.05	8.65	1 13 58.48	2.59
	Lalande 2751 . .	33	47.2	51.8	54.9	20.2	23.4	26.5	30.2	33.2	59.2	2.5	7.0	25 26.92	+ 0.12	8.65	1 25 18.39	5.11
	B. A. C. 472 . .	34	3.4	5.3	6.5	15.8	16.9	18.2	19.5	20.5	30.2	31.2	32.9	28 18.22	— 0.13	8.65	1 28 9.44	2.61
	Lalande 2966 . .	35	35.5	39.9	42.5	6.9	9.2	11.6	15.3	17.6	41.9	44.7	49.1	32 12.20	+ 0.10	8.65	1 32 3.65	4.94
	12-year cat. 150 .	36	. .	. .	. .	30.4	33.2	35.5	38.2	41.2	. .	. .	. .	38 35.70	+ 0.20	8.65	1 38 27.25	4.67
	β Arietis	37	23.9	25.7	27.0	36.9	38.1	39.2	40.8	42.0	52.2	53.4	55.2	47 39.49	— 0.07	8.65	1 47 30.77	2.94
	Lalande 5490 . .	38	15.9	19.4	22.1	41.8	43.9	46.2	49.0	51.5	. .	. .	. .	53 36.22	+ 10.38	8.65	2 53 37.95	5.35
	ζ Arietis	39	22.2	24.1	25.3	35.5	36.7	38.0	39.4	40.3	50.6	51.6	53.9	7 37.96	— 0.07	8.64	3 7 29.25	3.28
2 F.	ι Piscium . . .	40	11.8	13.7	14.9	24.3	25.5	26.6	27.9	29.0	38.7	39.8	41.5	33 26.70	0.11	8.71	23 33 17.88	2.03
	Groombridge 34 .	41	49.6	52.0	53.8	6.6	8.2	9.7	11.5	13.1	26.2	27.7	29.9	11 9.85	0.00	8.72	0 11 1.13	2.57
	ε Piscium . . .	42	8.3	10.0	11.4	20.8	22.0	23.0	24.5	25.6	35.1	36.5	38.1	56 23.21	0.11	8.72	0 56 14.38	2.49
	Moon I. . . .	43	19.6	21.5	22.6	32.3	33.4	34.4	35.8	37.0	46.7	48.0	49.5	5 34.62	0.13	8.72	1 5 25.77	
	Polaris	44	. .	. .	. .	35.0	20.0	9.0	. .	. .	. .	. .	. .	11 21.33	54.49	8.72	. . . .	49.86
	η Piscium . . .	45	28.2	29.9	31.2	41.1	42.1	43.2	44.6	45.7	55.4	56.7	58.7	24 43.35	0.09	8.73	1 24 34.53	2.72
	Anonymous . .	46	. .	3.5	4.8	14.7	15.8	17.0	18.3	19.5	29.4	30.5	. .	26 17.06	0.09	8.73	1 26 8.24	2.74
	Anonymous . .	47	. .	. .	. .	9.9	11.1	12.8	30.3	32.9	34.2	35.6	37.2	40 25.50	— 29.37	8.73	1 39 47.40	2.54
	Lalande 3987 . .	48	43.3	47.6	50.8	15.1	17.8	20.8	24.1	27.0	51.4	54.7	58.9	5 21.05	+ 0.12	8.73	2 5 12.44	5.60
	12 Eridani. . . .	49	27.9	29.7	30.2	41.9	43.0	44.2	45.8	47.3	58.5	59.5	1.4	6 44.49	— 0.26	8.74	3 6 35.49	2.77
	Carrington 491 .	50	. .	. .	. .	13.7	32.1	48.0	7.7	25.9	. .	. .	. .	24 49.48	+ 1.74	— 8.74	3 24 42.48	— 31.32

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Nov. 28, 23.7	— 9.67	0.000	+ 0.19	— 0.13
29, 23.5	— 8.87	+ 0.034	+ 0.19	— 0.13
Dec. 1, 0.8	— 8.65	+ 0.003	+ 0.19	— 0.13
2, 2.0	— 8.73	— 0.007	+ 0.19	— 0.13

18. Cloudy.

17, 21. Observations made with eye and ear.

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
														m. s.	m. s.	s.	h. m. s.	s.
1870. Dec. 2 F.	B. A. C. 1111 . .	1	. .	40.1	42.7	3.6	5.6	8.4	11.4	13.6	34.5	36.9	. .	31 8.53	+ 0.09	− 8.74	3 30 59.88	− 5.88
	Lalande 6888 . .	2	3.0	. .	6.9	19.4	20.9	22.4	24.1	25.7	38.4	. .	42.0	38 22.53	0.03	8.74	3 38 13.82	4.06
	Lalande 6889 . .	3	3.4	. .	7.4	19.9	21.5	22.9	24.8	26.2	39.0	. .	43.6	38 23.19	0.03	8.74	3 38 14.48	4.06
	Groombridge 745.	4	55.2	2.4	6.9	45.1	49.7	54.2	59.7	4.4	43.8	48.3	55.2	44 54.99	+ 0.22	8.74	3 44 46.47	9.85
	γ^1 Eridani. . . .	5	. .	56.4	57.7	7.2	8.3	9.5	10.8	12.1	22.0	23.1	. .	52 9.68	− 0.18	8.74	3 52 0.76	2.92
	Weisse (2) 1151 .	6	11.5	13.8	15.2	26.4	28.0	29.2	30.5	32.0	43.9	45.0	47.3	54 29.35	0.03	8.74	3 54 20.58	3.85
	ψ Tauri	7	54.1	56.0	57.4	8.2	9.5	10.8	12.3	13.5	24.5	25.6	27.7	59 10.87	0.05	8.74	3 59 2.08	3.64
	ε Tauri	8	. .	0.1	1.5	11.4	12.5	13.8	15.2	16.4	26.4	27.8	. .	21 13.90	− 0.07	8.75	4 21 5.08	3.42
6 Sk.	Carrington 491 .	9	. .	. .	. .	15.7	32.1	49.7	9.1	27.2	. .	. .	. .	24 50.76	+ 0.54	9.18	3 24 42.12	31.12
	B. A. C. 1111 . .	10	36.9	40.7	43.4	3.9	6.5	9.0	11.5	14.2	34.7	37.8	41.4	31 9.09	− 0.09	9.18	3 30 59.82	5.88
	Lalande 6888 . .	11	4.1	6.2	7.7	. .	. .	. .	. .	. .	39.2	40.8	43.1	38 23.52	0.13	9.18	3 38 14.21	4.08
	Lalande 6889 . .	12	. .	. .	. .	20.7	22.3	23.7	25.6	27.1	. .	. .	. .	38 23.88	0.00	9.18	3 38 14.70	4.08
	Weisse (2) 1151 .	13	11.8	13.9	15.6	. .	. .	. .	6.5	9.5	11.2	12.6	13.9	54 49.38	19.64	9.19	3 54 20.55	3.88
	*+41° 49′ . . .	14	. .	. .	. .	42.3	43.5	44.7	46.3	47.7	59.7	1.0	3.1	54 51.04	6.07	9.19	3 54 35.78	3.88
	ψ Tauri	15	54.8	56.6	58.2	8.9	10.1	11.4	12.8	14.1	25.1	26.4	28.2	59 11.51	0.08	9.19	3 59 2.24	3.67
	Moon I. . . .	16	22.7	24.7	26.0	36.2	37.4	38.4	40.1	41.2	51.5	52.7	54.4	12 38.66	0.09	9.19	4 12 29.38	
	ε Tauri	17	59.0	0.7	2.1	12.2	13.1	14.3	15.9	16.9	27.0	28.2	29.9	21 14.48	0.09	9.19	. . . .	3.46
	Lalande 9012 . .	18	3.0	5.6	7.2	20.8	22.5	24.0	26.0	27.3	41.2	42.6	44.9	42 24.10	0.07	9.20	4 42 14.83	4.51
	ι Aurigæ. . . .	19	27.5	29.5	31.2	42.1	43.5	44.9	46.3	47.8	59.0	0.5	2.3	48 44.96	0.08	9.20	. . . .	3.90
	β Orionis. . . .	20	15.0	16.8	17.9	27.4	28.5	29.5	30.9	32.1	42.0	43.0	44.6	8 29.79	− 0.14	9.20	. . . .	3.03
	Lalande 9884 . .	21	. .	. .	. .	37.2	42.2	47.8	54.7	0.1	. .	. .	. .	17 48.40	+ 0.16	9.21	5 17 39.35	12.28
	Groombridge 966.	22	43.7	. .	55.4	31.6	35.5	40.1	45.4	49.2	26.6	. .	37.4	22 40.54	− 0.06	9.21	5 22 31.27	9.93
7 St.	γ Tauri	23	21.4	23.2	24.4	34.4	35.5	36.8	38.1	39.2	49.2	50.5	52.1	12 36.80	0.11	9.58	. . . .	3.37
	ε Tauri	24	59.2	1.1	2.3	12.4	13.5	14.7	16.2	17.2	27.5	28.6	30.4	21 14.83	0.11	9.58	. . . .	3.47
	τ Tauri	25	. .	. .	. .	37.3	38.6	39.8	41.2	42.5	. .	. .	. .	34 39.88	0.05	9.58	4 34 30.25	3.58
	ι Tauri	26	17.0	18.9	20.3	30.4	31.6	32.8	34.2	35.5	45.6	46.9	48.6	55 32.89	0.11	9.58	4 55 23.20	3.56
	Moon I. . . .	27	27.4	29.4	30.6	40.8	42.2	43.3	44.6	46.1	56.5	57.7	58.6	3 43.38	0.13	9.58	5 3 33.67	
	Moon II . . .	28	38.6	40.6	42.0	52.1	53.4	54.5	56.1	57.2	7.8	9.1	11.0	5 54.76	0.11	9.58	5 5 45.07	
	β Tauri	29	. .	. .	. .	15.3	16.6	18.1	19.3	20.7	. .	. .	. .	18 18.00	0.05	9.59	. . . .	3.77
8 Sk.	Lalande 10797. .	30	1.1	3.2	4.8	16.4	17.8	19.1	20.8	22.1	34.4	35.9	37.6	37 19.38	0.11	9.61	5 37 9.66	4.11
	α Orionis. . . .	31	. .	8.1	9.2	18.7	19.8	21.0	22.2	23.4	33.1	34.2	. .	48 21.08	0.11	9.61	5 48 11.36	3.26
	O. Arg. S. 4457 .	32	. .	. .	. .	2.8	4.2	6.1	23.9	26.7	28.2	29.4	31.1	51 19.05	29.88	9.61	5 50 39.56	2.90
	*−27° 43′ . . .	33	. .	6.1	7.6	9.2	11.4	. .	19.4	21.9	23.6	24.9	. .	7 45.51	− 0.48	9.61	6 7 35.42	2.88
	*−27° 43′ . . .	34	30.0	32.2	33.5	. .	. .	. .	. .	. .	. .	. .	3.4	7 39.78	+ 6.82	9.61	6 7 36.99	2.88
	*−27° 43′ . . .	35	. .	. .	. .	56.6	57.8	59.3	0.8	2.1	. .	. .	. .	7 59.32	− 0.14	9.61	6 7 49.57	− 2.88
	δ Ursæ Minoris, S.P.	36	. .	. .	. .	12.5	31.5	52.5	12.0	30.5	. .	. .	. .	13 51.80	+ 0.25	9.61	. . . .	+ 33.37
	28 Geminorum . .	37	27.8	29.9	31.2	41.9	43.2	44.5	46.0	47.2	58.4	59.6	1.4	36 44.65	− 0.11	9.61	6 36 34.93	− 3.68
	α Canis Majoris. .	38	. .	. .	. .	35.1	36.3	37.4	38.8	40.0	. .	. .	. .	39 37.52	0.08	9.61	6 39 27.83	2.77
	ε Canis Majoris. .	39	26.9	29.0	30.2	41.0	42.4	43.5	45.0	46.2	57.3	58.5	0.5	53 43.68	0.16	9.61	6 53 33.91	2.81
	δ Canis Majoris. .	40	2.5	4.5	5.9	16.3	17.5	18.9	20.3	21.5	32.2	33.6	35.4	3 18.96	0.16	9.61	7 3 9.19	2.79
9 Y.	ε Tauri	41	59.7	. .	2.8	12.6	13.7	14.9	16.2	17.5	27.6	. .	30.5	21 15.06	0.09	9.81	. . . .	3.48
	11 Orionis. . . .	42	6.6	. .	9.8	19.5	20.6	21.7	23.1	24.3	34.2	. .	37.1	57 21.88	0.09	9.81	. . . .	3.44
	Jupiter I . . .	43	. .	. .	. .	57.3	58.4	0.3	17.2	19.8	21.0	22.2	23.7	25 12.48	28.24	9.81	5 24 34.43	
	Jupiter II . . .	44	. .	. .	. .	45.3	46.5	47.7	49.1	50.5	. .	. .	. .	24 47.82	0.05	9.81	5 24 37.96	
	η Geminorum . .	45	56.5	. .	59.7	9.7	10.9	12.3	13.7	15.0	25.1	. .	28.3	7 12.36	0.09	9.81	6 7 2.46	− 3.58
St.	δ Ursæ Minoris, S.P.	46	. .	. .	. .	. .	. .	. .	17.0	52.5	13.0	37.5	. .	23 0.00	9 6.68	9.88	. . . .	+ 33.58
	γ Geminorum . .	47	10.1	. .	13.2	. .	. .	25.4	26.8	28.2	37.9	39.0	40.8	30 27.68	2.27	9.88	. . . .	− 3.38
	51 Cephei. . . .	48	. .	. .	. .	49.0	. .	36.0	2.5	25.0	. .	. .	. .	39 43.13	6.53	9.88	. . . .	43.83
	Moon II . . .	49	23.0	. .	26.3	. .	38.2	39.6	40.9	42.0	52.8	54.1	55.9	53 41.42	1.83	9.88	6 53 29.71	
	δ Geminorum . .	50	19.0	. .	22.0	32.3	33.4	34.7	36.1	37.4	47.8	. .	50.6	12 34.81	− 0.09	− 9.88	. . . .	− 3.39

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
h.	s.	s.	s.	s.
Dec. 6, 4.8	− 9.20	− 0.016	+ 0.10	− 0.12
7, 4.6	− 9.58	− 0.010	+ 0.05	− 0.12
8, 6.6	− 9.61	0.000	+ 0.05	− 0.12
9, 4.7	− 9.81	0.000	+ 0.05	− 0.12
9, 6.8	− 9.88	0.000	+ 0.05	− 0.12

Date and observer.	OBJECT.	Number.	SECONDS OF TRANSIT OVER WIRES.												CORRECTIONS.		Observed Right Ascension.	Reduction to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean wire.	Inst.	Clock.		
1870.														m. s.	m. s.	s.	h. m. s.	s.
Dec. 10 Sk.	Polaris	1	57.0	12.0	59.5	. .	. .	. .	. .	. .	. .	. .	. .	3 2.83	+ 9 9.42	− 9.74	. . . .	− 44.82
	θ Ceti	2	28.8	30.8	31.8	41.6	42.6	43.9	45.6	46.2	55.9	57.2	58.8	17 43.87	− 0.14	9.74	. . . .	2.44
	B. A. C. 472 . .	3	4.4	6.0	7.2	16.9	17.9	18.9	20.2	21.5	31.1	32.3	33.9	28 19.13	− 0.12	9.74	1 28 9.27	2.55
	Lalande 2966 . .	4	36.6	41.1	44.2	. .	10.1	13.2	15.9	. .	42.6	46.1	50.1	32 13.33	+ 0.07	9.74	1 32 3.66	4.69
	o Piscium . . .	5	29.6	31.3	32.6	41.9	43.1	44.1	45.6	46.8	56.6	57.6	59.4	38 44.42	− 0.10	9.74	. . . .	2.69
12	α Hydræ	6	. .	. .	. .	22.2	23.2	24.3	25.7	. .	36.6	37.9	39.5	21 29.91	5.50	9.92	. . . .	2.51
	Moon II . . .	7	19.6	. .	22.5	. .	33.9	35.1	36.8	. .	47.8	. .	50.9	38 35.23	0.07	9.92	9 38 25.24	
	μ Leonis	8	17.4	. .	20.7	. .	32.1	33.5	35.1	. .	47.0	. .	50.1	45 33.70	0.05	9.92	. . . .	2.66
	α Leonis	9	23.1	. .	26.0	. .	37.0	38.1	39.3	. .	51.1	. .	53.2	1 38.26	0.08	9.92	. . . .	2.41
	γ^1 Leonis	10	43.7	. .	46.7	. .	58.0	59.2	0.6	. .	12.2	. .	15.0	12 59.34	− 0.06	9.92	. . . .	2.43
	Polaris, S. P. . .	11	58.9	7.5	53.0	. .	. .	. .	. .	. .	. .	. .	. .	2 59.80	+ 9 9.66	9.92	. . . .	43.15
16	Moon II . . .	12	24.7	26.4	27.5	37.2	38.3	39.5	41.0	42.0	52.0	53.0	54.7	10 39.66	− 0.13	6.91	13 10 32.62	
	α Virginis . . .	†13	14.2	16.1	17.5	26.8	28.1	29.2	30.5	31.7	41.4	42.6	44.3	18 29.31	− 0.15	− 6.91	. . . .	− 1.41

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1870. h.	s.	s.	s.	s.
Dec. 10, 1.5	− 9.74	0.000	+ 0.16	− 0.12
12, 9.8	− 9.92	0.000	+ 0.16	− 0.12
16, 13.3	− 6.91	. .	+ 0.16	− 0.12

13. Cloudy.

OBSERVATIONS

WITH THE

MURAL CIRCLE.

1870.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 3	1	Nadir	. .	.	. . . .	100 0 0.6	8.3	3.5	14.3	8.8	3.8	6.55	29.552	+0.657	. .
	2	Lacaille 480 . . .	8.0	3	III–VII.	348 35 3.0	10.5	9.0	15.2	8.0	2.8	8.08	34.496	. .	35.159
	3	Anon. $1^h 57^m 15^s$.	9.0	3	III–VII.	315 30 0.3	6.2	1.2	10.1	6.2	0.9	4.15	39.216	. .	39.872
	4	O. Arg. N. 2511 . .	8.5	3	IV–VI.	264 59 58.8	65.7	64.8	73.2	66.1	62.7	65.22	32.514	. .	33.167
	5	Weisse II, 373 . .	9.2	3	III–VII.	305 15 3.8	8.5	4.8	13.2	8.3	2.8	6.90	34.684	. .	35.338
	6	Weisse II, 669 . .	7.0	3	III–VII.	280 45 3.8	11.1	9.0	16.0	10.0	6.0	9.32	32.935	. .	33.583
	7	Anon. $2^h 33^m 13^s$.	9.0	3	V, VII, IX.	350 0 4.4	11.5	10.1	18.4	9.0	2.2	9.27	27.827	. .	28.509
	8	B. A. C. 854 . . .	8.0	3	V, VII, IX.	344 55 4.1	11.6	10.0	15.0	9.0	3.0	8.78	30.097	. .	30.776
	9	Lacaille 910 . . .	8.0	3	III–VII.	341 45 5.1	12.6	11.7	17.5	10.5	2.4	9.97	27.020	. .	27.682
	10	Weisse III, 67 . .	9.5	3	III–VII.	280 30 1.3	11.2	6.9	15.0	8.1	4.0	6.08	39.379	. .	40.027
	11	Anon. $3^h 14^m 32^2$.	9.5	3	III–VII.	310 0 1.2	10.0	4.0	10.5	7.2	3.0	5.98	30.297	. .	30.952
	12	Weisse III, 334 . .	7.0	3	III–VII.	306 35 2.4	10.0	4.8	12.0	8.0	3.9	6.85	26.826	. .	27.480
	13	11 Tauri	7.0	3	III–VII.	294 0 2.3	10.0	8.0	15.3	9.2	4.8	8.27	31.574	. .	32.226
	14	*e* Tauri	6.5	3	III–VII.	308 10 2.4	10.9	5.9	14.9	9.2	4.5	7.97	32.115	. .	32.769
	15	Anon. $4^h 5^m 1^s$ . .	9.3	3	III–VII.	274 30 2.3	11.5	9.5	17.8	10.0	5.8	9.48	32.002	. .	32.649
	16	Anon. $4^h 23^m 17^s$.	9.5	2	V, IX.	289 50 3.3	12.2	8.1	17.0	10.5	5.8	9.48	25.718	. .	26.373
	17	53 Eridani	6.5	3	III–VII.	333 25 3.2	12.1	9.0	16.0	8.2	1.5	8.33	27.569	. .	28.229
	18	Anon. $4^h 36^m 51^s$.	9.5	2	IV, VI.	342 20 6.3	14.8	12.1	20.4	11.9	3.8	11.55	34.472	. .	35.130
	19	103 Tauri	6.0	3	III–VII.	294 50 3.0	10.6	7.4	16.0	16.1	3.8	9.48	33.546	. .	34.198
	20	Weisse (2) V, 287 .	9.3	3	III–VII.	288 30 2.3	10.8	3.8	15.0	8.0	2.8	7.12	27.373	. .	28.024
	21	Weisse (2) V, 530 .	. .	3	III–VII.	288 20 2.3	10.3	4.0	15.1	8.8	2.5	7.17	26.433	. .	27.084
	22	Anon. $5^h 50^m 46^s$.	9.3	1	V.	311 25 1.2	11.9	6.3	14.1	8.2	1.2	7.15	30.967	. .	31.624
5	23	Nadir	. .	.	. . . .	100 0 0.7	10.7	2.5	15.0	5.4	5.1	6.57	29.611	+0.599	. .
	24	Lacaille 477 . . .	. .	3	IV–VI.	351 40 1.1	9.5	6.5	15.0	5.2	0.9	6.37	28.097	. .	28.699
	25	Weisse I, 820 . .	9.0	2	VII, IX.	310 15 1.0	6.1	2.9	9.7	6.0	1.9	4.60	26.820	. .	27.433
	26	B. A. C. 607 . . .	7.0	3	V, VI, VII.	298 30 1.2	6.9	3.5	9.4	7.0	2.0	5.00	33.863	. .	34.466
	27	ν Ceti	. .	3	III–VII.	313 50 3.1	12.2	5.8	14.4	10.3	5.0	8.47	26.557	. .	27.154
	28	ρ^2 Arietis	. .	3	IV–VI.	301 5 4.1	10.3	7.9	15.0	10.1	6.2	8.93	29.473	. .	30.071
	29	Weisse II, 853 . .	8.5	3	V, VI, VII.	318 55 1.8	8.2	3.2	12.9	3.8	3.1	5.50	32.800	. .	33.405
	30	Anon. $3^h 7^m 45^s$ . .	9.0	2	III, V.	306 15 2.1	9.0	5.0	13.3	7.6	4.4	6.90	31.950	. .	32.541
	31	Anon. $3^h 7^m 59^s$ . .	7.5	1	IX.	348 15 3.7	13.1	10.4	19.7	9.3	4.9	10.18	21.960	. .	22.608
	32	Lacaille 1079. . .	. .	3	III–VII.	347 15 4.5	11.4	9.9	17.8	8.0	5.3	9.48	29.508	. .	30.113
	33	o Persei.	. .	3	IV–VI.	285 20 7.2	12.0	11.6	21.0	13.6	10.8	12.70	28.300	. .	28.897
	34	Weisse (2) III, 931 .	. .	3	III–VII.	292 15 5.6	12.6	9.2	17.5	13.0	8.9	11.13	34.285	. .	34.879
	35	Lacaille 1346. . .	7.5	3	III–VII.	350 15 1.8	9.5	6.8	16.3	6.0	1.0	6.90	29.011	. .	29.617
	36	Weisse (2) IV, 166 .	. .	2	VIII, IX.	298 40 3.0	9.6	6.1	8.0	7.9	4.5	6.52	30.867	. .	31.472
	37	Anon. $4^h 20^m 8^s$ . .	. .	2	VIII, IX.	302 25 4.8	11.3	7.9	17.0	9.5	5.5	9.33	25.373	. .	25.980
	38	Anon. $4^h 34^m 48^s$.	. .	3	III, IV, V.	344 45 3.5	10.9	9.0	16.2	7.3	4.4	8.55	28.061	. .	28.657
	39	Lacaille 1553. . .	7.0	3	VII, VIII, IX.	357 50 4.9	13.0	10.7	21.9	10.0	3.2	10.62	24.205	. .	24.843
	40	Lacaille 1568. . .	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	19.193	. .	19.794
	41	O. Arg. S. 3670 . .	9.0	3	V, VI, VII.	347 35 3.7	11.1	8.5	18.6	7.0	4.7	8.93	28.860	. .	29.468
	42	O. Arg. S. 3680 . .	9.5	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	28.365	. .	28.995
	43	119 Tauri	. .	3	III–VII.	300 25 1.9	9.3	5.9	15.5	8.1	3.9	7.43	32.258	. .	32.853
	44	120 Tauri	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.447	. .	27.045
	45	Anon. $5^h 32^m 53^s$.	. .	4	VI, VII, VIII, IX.	332 30 2.6	10.0	8.6	15.8	8.6	1.8	7.90	29.786	. .	30.406
	46	Lacaille 1991. . .	. .	3	V, VI, VII.	346 0 2.0	9.1	6.4	14.5	6.2	1.4	6.60	24.952	. .	25.560
	47	Anon. $5^h 50^m 35^s$.	. .	3	V, VI, VII.	348 50 0.9	8.5	5.1	14.5	4.0	59.0	5.33	34.065	. .	34.674
	48	Anon. $5^h 50^m 37^s$.	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	28.564	. .	29.205
	49	Anon. $5^h 59^m 35^s$.	8.0	3	III–VII.	347 30 2.1	9.3	7.0	15.3	4.7	59.4	6.30	33.372	. .	33.976
	50	Anon. $6^h 7^m 31^s$.	. .	3	I, II, III.	346 35 4.2	10.4	8.8	16.7	8.0	1.8	8.32	33.365	. .	33.963
	51	Anon. $6^h 7^m 31^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	31.133	. .	31.734
	52	Anon. $6^h 7^m 43^s$.	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	32.450	. .	33.089
7	53	Lacaille 477 . . .	. .	3	III–VII.	351 39 55.0	64.3	61.0	71.3	59.3	53.5	60.73	27.964	+0.556	28.526
	54	O. Arg. N. 2484 . .	7.0	3	V, VI, VIII.	266 25 0.9	9.0	7.2	19.0	8.0	5.8	8.32	25.791	. .	26.341
	55	Lacaille 750 . . .	. .	3	IV–VI.	342 40 1.0	9.3	5.3	14.7	5.3	59.8	5.90	31.019	. .	31.576
	56	Lacaille 813 . . .	. .	3	IV–VI.	345 15 2.0	10.6	6.8	14.8	6.4	0.1	6.78	39.112	. .	39.669
	57	O. Arg. S. 1910 . .	. .	3	III–VII.	342 35 3.9	12.0	8.8	18.5	7.8	2.0	8.83	26.365	. .	26.925
	58	B. A. C. 1047 . .	. .	3	III–VII.	345 55 4.6	12.4	9.5	17.7	8.4	2.6	9.20	27.224	. .	27.785
	59	Lacaille 1108. . .	. .	2	VII, IX.	354 55 4.0	13.8	11.1	20.0	8.6	3.3	10.13	23.398	. .	23.994
	60	o Persei.	. .	3	III–VII.	285 20 1.5	7.2	6.0	16.8	6.5	3.8	6.97	28.068	+0.556	28.618
	61	O. Arg. S. 2452 . .	. .	2	VIII, IX.	347 15 3.7	12.8	10.2	18.5	7.7	4.1	9.50	30.012	. .	30.609
	62	Nadir	. .	.	. . . .	100 0 2.0	12.9	6.0	20.0	8.5	6.3	9.28	29.741	. .	. .
8	63	Nadir	. .	.	. . . .	100 0 0.0	14.6	4.6	18.9	9.6	6.3	9.00	29.688	+0.478	. .
	64	θ Cassiopeæ . . .	. .	3	III–VII.	264 25 0.2	11.1	6.8	20.1	9.3	8.2	9.28	27.317	. .	27.781
	65	Anon. $1^h 43^m 0^s$. .	9.5	3	III–VII.	305 0 2.1	12.1	7.0	17.5	9.1	6.0	8.97	30.264	. .	30.740

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	B.	
2	. .	. .	34.4	− 2 41.8	S. 68 32 26.3	2 30.3	− 29 41 17.4	+ 18.6	B.	
3	29.664	39.5	33.6	− 5 9.9	S. 35 24 54.3	42.4	+ 3 28 2.6	+ 8.0	B.	Weisse 963 3′ south of this.
4	. .	. .	. .	− 1 39.2	N. 15 1 34.0	16.0	+ 53 55 29.3	− 7.1	B.	
5	. .	. .	. .	− 2 47.3	S. 25 12 19.6	28.1	+ 13 40 51.6	+ 4.8	B.	
6	. .	. .	. .	− 1 52.3	S. 0 43 17.0	0.8	+ 38 10 21.5	− 2.5	B.	
7	29.674	38.8	33.5	+ 0 46.7	70 0 56.0	2 42.6	− 31 9 59.4	+ 18.6	B.	
8	. .	. .	. .	− 0 24.3	64 54 44.5	2 6.8	− 26 3 12.0	+ 17.1	B.	
9	. .	. .	. .	+ 1 12.6	61 46 22.5	1 50.7	− 22 54 34.0	+ 16.1	B.	
10	29.676	38.2	33.0	− 5 14.7	0 24 51.4	0.4	+ 38 28 42.5	− 1.6	B.	
11	. .	. .	. .	− 0 29.8	29 59 36.2	34.5	+ 8 53 28.6	+ 6.8	B.	
12	. .	. .	. .	+ 1 18.9	26 36 25.7	29.9	+ 12 16 43.6	+ 5.8	B.	
13	29.676	37.5	31.3	− 1 9.8	13 58 58.5	14.9	+ 24 54 25.8	+ 2.6	B.	
14	. .	. .	. .	− 1 26.8	S. 28 8 41.2	32.1	+ 10 44 26.0	+ 6.4	B.	
15	. .	. .	. .	− 1 23.0	N. 5 31 13.6	5.8	+ 44 24 56.6	− 1.0	B.	Followed about 30^s by a star of 7.5 magnitude.
16	. .	. .	. .	+ 1 53.5	S. 9 52 3.0	10.4	+ 29 1 25.8	+ 2.6	B.	Star of 9th magnitude preceded 17^s.
17	. .	. .	. .	+ 0 55.4	53 26 3.8	1 20.7	− 14 33 45.1	+ 11.4	B.	
18	29.662	36.8	31.2	− 2 40.8	62 17 30.7	1 53.6	− 23 25 45.1	+ 12.8	B.	
19	. .	. .	. .	− 2 11.6	14 47 57.9	15.8	+ 24 5 25.5	+ 4.1	B.	Unsteady.
20	. .	. .	. .	+ 1 1.8	8 31 9.0	9.0	+ 30 22 21.3	+ 3.4	B.	
21	29.666	35.8	30.3	+ 1 31.2	8 21 38.4	8.8	+ 30 31 52.0	+ 3.5	B.	
22	29.670	35.7	29.9	− 0 50.9	31 24 16.3	36.7	+ 7 28 46.3	+ 6.4	B.	Very faint.
23	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	F.	
24	30.236	36.0	32.7	+ 0 40.8	71 40 47.1	3 2.1	− 32 50 9.9	+ 19.6	F.	
25	. .	. .	. .	+ 1 20.3	30 16 24.9	35.6	+ 8 36 38.7	+ 6.2	F.	
26	. .	. .	. .	− 2 20.0	18 27 45.0	20.4	+ 20 25 33.9	+ 2.2	F.	
27	. .	. .	. .	+ 1 29.1	33 51 37.5	41.0	+ 5 1 20.8	+ 7.8	F.	
28	30.228	35.0	30.8	− 0 2.2	21 5 6.7	23.6	+ 17 48 9.0	+ 3.9	F.	
29	. .	. .	. .	− 1 46.8	38 53 18.8	49.3	− 0 0 28.8	+ 9.5	F.	Another star, same magnitude, 17^s earlier, and a small fraction of a revolution south.
30	. .	. .	. .	− 1 19.7	26 13 47.2	30.1	+ 12 39 21.9	+ 5.6	F.	
31	. .	. .	. .	+ 3 51.0	68 19 1.2	2 32.8	− 29 27 54.7	+ 17.6	F.	
32	. .	. .	. .	− 0 3.5	67 15 6.0	2 25.0	− 28 23 51.7	+ 17.0	F.	
33	. .	. .	. .	+ 0 34.5	5 20 47.2	5.7	+ 33 32 46.3	+ 0.2	F.	
34	. .	. .	. .	− 2 33.0	12 12 38.2	13.2	+ 26 40 47.8	+ 2.2	F.	
35	. .	. .	. .	+ 0 12.0	70 15 18.9	2 49.1	− 31 24 28.7	+ 16.2	F.	No other star in field at same declination.
36	. .	. .	. .	− 0 46.1	18 39 20.4	20.7	+ 20 13 58.2	+ 4.2	F.	
37	. .	. .	. .	+ 2 5.8	22 27 15.1	25.3	+ 16 25 58.8	+ 5.2	F.	Extremely faint.
38	. .	. .	. .	+ 0 42.1	64 45 50.6	2 9.4	− 25 54 20.7	+ 13.7	F.	
39	30.204	34.5	29.1	+ 2 41.3	77 52 51.9	4 38.7	− 39 3 51.4	+ 15.6	F.	
40	. .	. .	. .	+ 5 18.9	77 55 29.4	4 39.7	− 39 6 30.0	+ 15.7	F.	
41	. .	. .	. .	+ 0 16.7	67 35 25.6	2 27.6	− 28 44 14.0	+ 12.8	F.	
42	. .	. .	. .	+ 0 31.5	67 35 40.5	2 27.6	− 28 44 28.8	+ 12.7	F.	
43	. .	. .	. .	− 1 29.6	20 23 37.9	22.8	+ 18 29 38.6	+ 5.2	F.	
44	. .	. .	. .	+ 1 32.3	20 26 39.8	22.8	+ 18 26 36.6	+ 5.2	F.	
45	. .	. .	. .	− 0 12.7	52 29 55.2	1 19.6	− 13 37 35.6	+ 9.3	F.	
46	30.192	34.2	29.1	+ 2 18.9	66 2 25.5	2 17.1	− 27 11 3.3	+ 10.2	F.	
47	. .	. .	. .	− 2 26.5	68 47 38.8	2 36.7	− 29 56 36.3	+ 9.9	F.	
48	. .	. .	. .	+ 0 24.9	68 50 30.2	2 37.0	− 29 59 28.0	+ 9.9	F.	
49	. .	. .	. .	− 2 4.6	67 28 1.7	2 26.6	− 28 36 49.0	+ 9.2	F.	Another star preceding 3^s.
50	. .	. .	. .	− 2 4.2	66 33 4.1	2 20.3	− 27 41 45.1	+ 8.7	F.	
51	30.184	33.5	29.4	− 0 54.3	66 34 14.0	2 20.4	− 27 42 55.2	+ 8.7	F.	
52	. .	. .	. .	− 1 36.8	66 33 31.5	2 20.3	− 27 42 12.8	+ 8.7	F.	
53	30.090	32.3	28.4	+ 0 46.2	S. 71 40 46.8	3 2.8	− 32 50 10.4	+ 19.8	F.	
54	. .	. .	. .	+ 1 54.5	N. 13 32 57.2	14.7	+ 52 26 51.1	− 7.0	F.	
55	. .	. .	. .	− 0 49.4	S. 62 39 16.5	1 57.8	− 23 47 35.1	+ 17.1	F.	
56	30.082	31.5	28.0	− 5 3.5	65 10 3.3	2 11.5	− 26 18 35.5	+ 17.7	F.	
57	. .	. .	. .	+ 1 36.2	62 36 45.0	1 57.7	− 23 45 3.5	+ 16.8	F.	
58	. .	. .	. .	+ 1 9.3	65 56 18.5	2 16.4	− 27 4 55.7	+ 17.1	F.	
59	. .	. .	. .	+ 3 7.8	74 58 17.9	3 44.8	− 36 8 23.5	+ 19.0	F.	
60	. .	. .	. .	+ 0 43.3	S. 5 20 50.2	5.7	+ 33 32 43.3	+ 0.2	F.	
61	30.090	31.0	27.3	− 0 19.1	S. 67 14 50.4	2 25.2	− 28 23 36.4	+ 16.8	F.	
62	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	F.	
63	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	High wind; mercury unsteady.
64	30.130	34.7	23.6	+ 1 9.5	N. 15 33 41.2	17.2	+ 54 27 37.7	− 8.6	Y.	
65	30.150	33.2	22.8	− 0 23.2	S. 24 59 45.8	28.9	+ 13 53 24.6	+ 4.6	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 8	1	70 Ceti	5.0	3	III–VII.	320 25 2.8	15.4	9.1	16.9	9.1	4.7	9.67	36.317	. .	36.797
	2	Anon. $2^h 23^m 28^s$	7.8	3	III–VII.	346 45 3.1	17.1	11.3	20.7	10.1	5.5	11.30	35.777	. .	36.260
	3	Anon. $2^h 32^m 22^s$	9.2	3	III–VII.	297 15 1.8	14.9	7.3	oblit.	8.7	5.1	9.62	21.488	. .	21.922
	4	Lacaille 922	6.5	3	III–VII.	344 45 2.7	14.8	10.2	18.5	8.2	4.8	9.87	36.403	. .	36.886
10	5	Nadir	. .	.	. .	100 0 1.8	10.0	3.7	15.3	8.9	8.0	7.95	29.673	+ 0.581	. .
	6	B. A. C. 514	. .	3	IV–VI.	289 30 2.1	8.2	3.7	11.9	8.0	5.1	6.50	29.318	. .	29.897
	7	Anon. $1^h 34^m 19^s$	. .	3	VI, VII, VIII.	311 55 1.8	6.8	3.7	9.2	7.8	3.9	5.53	36.255	. .	36.846
	8	ζ Ceti	. .	3	IV–VI.	329 50 2.5	8.2	6.3	12.3	6.8	3.5	6.60	26.942	. .	27.524
	9	Durch. 267	. .	3	III–VII.	320 30 3.3	8.7	5.5	11.2	8.0	3.7	6.73	26.943	. .	27.524
	10	Weisse I, 1071	. .	3	IV–VI.	310 35 3.0	8.9	4.1	10.3	8.5	5.2	6.67	20.677	. .	21.258
	11	Weisse I, 1080	. .	3	V, VII, IX.	" " "	"	"	"	"	"	"	21.378	. .	21.968
	12	Anon. $2^h 23^m 27^s$	. .	3	III–VII.	346 40 1.8	7.7	5.4	10.6	5.0	2.8	5.55	25.699	. .	26.285
	13	Anon. $2^h 33^m 22^s$	. .	3	IV–VI.	297 15 2.1	7.0	3.0	9.3	7.4	3.5	5.38	21.146	. .	21.726
	14	Anon. $2^h 35^m 45^s$	9.3	1	IX.	306 10 3.4	8.6	4.1	9.9	9.1	6.0	6.85	28.478	. .	29.071
	15	Anon. $2^h 51^m 27^s$	. .	2	V, VII.	304 10 4.1	8.0	6.2	11.4	11.7	7.6	8.17	19.395	. .	19.979
	16	Anon. $2^h 52^m 2^s$	. .	2	VII, IX.	" " "	"	"	"	"		"	24.262	. .	24.852
	17	Anon. $3^h 7^m 54^s$	7.5	2	III, VII.	348 15 3.8	10.3	8.4	15.4	9.0	5.0	8.65	21.915	. .	22.504
	18	Anon. $3^h 14^m 46^s$	. .	3	V, VI, VII.	343 30 5.7	10.6	6.9	14.0	9.8	8.6	9.27	35.371	. .	35.961
	19	B. A. C. 1049	. .	2	VII, IX.	343 0 5.2	10.3	6.9	14.5	9.3	4.7	8.48	33.144	. .	33.751
	20	Anon. $3^h 23^m 10^s$	9.5	2	VIII, IX.	337 10 6.4	11.1	10.0	15.0	10.4	5.4	9.72	27.198	. .	27.812
	21	Anon. $3^h 27^m 15^s$	. .	3	VI, VII, VIII.	287 35 6.8	10.8	6.3	16.5	11.9	9.6	10.32	25.062	. .	25.646
	22	Anon. $3^h 45^m 27^s$	9.0	3	IV–VI.	280 45 7.1	14.3	9.8	17.8	13.4	12.0	12.40	31.547	. .	32.125
	23	Anon. $3^h 45^m 28^s$	8.0	4	I, II, VIII, IX.	" " "	"	"	"	"	"	"	29.144	. .	29.695
	24	c Persei	. .	3	III–VII.	271 30 5.1	10.3	7.6	16.1	12.3	10.7	10.35	25.947	. .	26.518
	25	Anon. $4^h 5^m 9^s$	. .	3	III–VII.	301 25 7.0	12.2	7.8	13.5	11.4	9.5	10.23	32.687	. .	33.265
	26	Anon. $4^h 13^m 58^s$	. .	3	IV–VI.	350 30 8.3	13.9	12.3	20.0	11.8	8.1	12.40	30.138	. .	30.720
	27	53 Eridani	. .	3	IV–VI.	333 25 8.8	14.9	12.2	19.5	14.2	9.7	13.22	27.735	. .	28.317
	28	Anon. $4^h 34^m 55^s$	9.0	1	IX.	344 45 6.2	11.7	9.6	15.1	11.1	7.2	10.15	27.923	. .	28.551
	29	Lacaille 1611	. .	3	III–VII.	354 10 2.8	9.5	7.4	13.0	7.8	4.3	7.47	30.930	. .	31.518
	30	Weisse (2) IV, 1138	. .	3	V, VI, VII.	296 30 4.9	10.6	4.8	12.5	11.4	7.9	8.68	29.348	. .	29.928
	31	B. A. C. 1578	. .	2	VIII, IX.	345 10 6.9	13.3	9.7	14.0	10.6	6.5	10.17	26.894	. .	27.514
	32	Washington 130	. .	3	III–VII.	316 40 5.4	10.4	6.9	11.7	11.0	8.2	8.93	29.775	. .	30.356
	33	β Leporis	. .	3	III–VII.	339 45 6.8	13.6	10.1	18.4	12.3	7.0	11.37	31.708	. .	32.293
	34	Lacaille 2062	. .	3	V, VI, VII.	342 5 7.9	15.8	12.5	19.5	13.3	7.2	12.70	27.784	. .	28.374
	35	Anon. $6^h 1^m 15^s$	8.0	3	III–VII.	342 25 3.6	10.7	6.3	12.4	7.6	3.5	7.35	32.395	. .	32.980
	36	Anon. $6^h 3^m 2^s$	. .	2	V, VI.	287 25 4.2	7.7	3.4	12.5	7.8	6.0	6.93	26.450	. .	27.033
	37	Anon. $6^h 3^m 2^a$	. .	1	IX.	" " "	"	"	"	"	"	"	25.400	. .	25.974
	38	Weisse (2) VI, 80	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	25.702	. .	26.278
	39	Weisse (2) VI, 136	. .	1	IX.	" " "	"	"	"	"	"	"	33.242	. .	33.818
	40	O. Arg. N. 7009	. .	2	VI, VII.	268 55 2.5	7.4	5.5	13.5	9.4	7.0	7.55	29.372	. .	29.951
	41	O. Arg. N. 7032	. .	1	IX.	270 40 3.2	9.0	5.5	14.1	8.9	6.4	7.85	26.820	. .	27.370
	42	Lacaille 2443	7.0	3	III–VII.	348 15 2.0	11.1	8.9	15.3	8.0	4.9	8.37	26.491	. .	27.077
	43	Lacaille 2448, (1st *)	. .	2	VIII, IX.	347 20 3.7	9.5	7.9	15.0	6.5	5.0	7.93	36.490	. .	37.012
	44	Lacaille 2448, (2d *)	. .	2	VI, VII.	" " "	"	"	"	"	"	"	34.827	. .	35.422
11	45	ε Andromedæ	. .	3	III–VII.	290 20 1.2	11.7	3.9	14.1	11.1	7.9	8.32	35.326	+ 0.449	35.770
	46	*i* Piscium, (1st *)	. .	2	I, IX.	291 55 1.2	11.9	4.7	13.2	9.9	7.9	8.13	33.013	. .	33.437
	47	*i* Piscium, (2d *)	. .	3	III–VII.	" " "	"	"	"	"	"	"	32.958	. .	33.402
	48	B. A. C. 341	6.0	3	III–VII.	303 55 0.5	11.1	4.1	12.8	10.6	8.5	7.93	30.965	. .	31.411
	59	O. Arg. S. 992	7.0	3	III–VII.	342 25 1.4	11.5	5.8	13.9	9.0	6.2	7.97	27.024	. .	27.477
	50	Weisse I, 753	6.5	2	I, IX.	350 15 2.1	12.7	6.7	14.5	10.3	7.1	8.90	32.566	. .	33.025
	51	χ Ceti	5.0	3	III–VII.	" " "	"	"	"	"	"	"	34.540	. .	34.991
	52	Nadir	. .	.	. .	100 0 1.1	12.8	2.9	15.2	10.7	9.3	8.67	29.709	. .	. .
21	53	Nadir	. .	3	. .	100 0 1.2	7.5	2.7	12.1	7.0	6.1	6.10	29.632	+ 0.563	. .
	54	B. A. C. 1058	. .	3	III–VII.	259 25 2.3	5.8	5.5	13.4	7.0	8.0	7.00	30.013	. .	30.560
	55	Weisse (2) III, 733	. .	3	III–VII.	292 45 3.0	5.5	2.3	10.0	8.5	7.3	6.10	31.268	. .	31.826
	56	Weisse III, 746	. .	3	VII, VIII, IX.	328 20 0.7	6.8	2.2	8.6	4.2	1.4	3.98	33.917	. .	34.502
	57	Lacaille 1346	. .	3	VI, VII, VIII.	350 15 3.3	9.4	7.7	15.1	7.4	4.8	7.95	28.878	. .	29.463
	58	O. Arg. S. 3022	. .	3	III–VII.	344 55 3.2	8.7	6.0	11.1	6.2	4.0	6.53	32.762	. .	33.330
	69	Anon. $4^h 25^m 38^s$	. .	2	V–VII.	290 25 2.9	7.4	1.2	10.0	7.3	5.2	5.67	27.188	. .	27.761
	60	Lacaille 1631	. .	3	III–VII.	357 40 1.1	8.8	5.0	14.0	5.0	1.5	5.90	31.093	. .	31.664
	61	Weisse (2) IV, 1266	. .	3	V, VI, VII.	297 30 0.8	5.9	1.0	8.9	6.2	2.0	4.13	37.372	. .	37.939
	62	Anon. $5^h 4^m 11^s$	. .	3	IV–VI.	288 40 0.9	5.6	1.6	8.0	6.5	2.6	4.20	35.425	. .	35.986
	63	Weisse (2) V, 111	. .	3	IV–VI.	" " "	"	"	"	"	"	"	31.713	. .	32.274
	64	χ Aurigæ	. .	3	III–VII.	286 50 0.8	4.1	0.5	9.0	5.0	2.2	3.60	33.429	. .	33.986

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.162	32.0	22.2	− 3 33.2	S. 40 21 36.4	0 52.7	− 1 28 2.2	+ 0.8	Y.	
2	. .	. .	. .	− 3 16.0	66 41 55.3	2 23.4	− 27 50 39.4	+ 18.4	Y.	
3	30.170	32.0	21.8	+ 4 12.5	17 19 22.1	19.4	+ 21 33 57.8	+ 2.6	Y.	Corr. +2″.00 applied to mean of A, B, E, F.
4	. .	. .	. .	− 3 36.0	64 41 33.9	2 10.8	− 25 50 5.4	+ 17.5	Y.	
5	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	F.	
6	29.968	38.0	38.2	+ 0 3.2	9 30 9.7	10.0	+ 29 23 19.5	− 0.2	F.	
7	. .	. .	. .	− 3 34.8	31 51 30.8	37.1	+ 7 1 31.4	+ 7.3	F.	
8	. .	. .	. .	+ 1 17.5	49 51 24.1	1 10.7	− 10 58 55.6	+ 13.2	F.	
9	. .	. .	. .	+ 1 17.5	40 31 24.2	51.0	− 1 38 36.0	+ 10.3	F.	
10	. .	. .	. .	+ 4 33.2	30 39 39.9	35.4	+ 8 13 23.0	+ 7.2	F.	
11	. .	. .	. .	+ 4 11.0	30 39 17.7	35.4	+ 8 13 46.2	+ 7.2	F.	
12	. .	. .	. .	+ 1 56.2	66 42 1.8	2 18.1	− 27 50 40.7	+ 18.6	F.	
13	. .	. .	. .	+ 4 18.6	17 19 24.0	18.7	+ 21 33 56.6	+ 2.6	F.	
14	. .	. .	. .	+ 0 29.1	26 10 36.0	29.4	+ 12 42 34.0	+ 5.7	.	Very faint.
15	29.960	38.0	35.9	+ 5 13.1	24 15 21.3	27.0	+ 14 37 51.0	+ 5.2	F.	
16	. .	. .	. .	+ 2 41.0	24 12 49.2	27.0	+ 14 40 23.0	+ 5.2	F.	
17	. .	. .	. .	+ 3 54.3	68 19 3.0	2 29.8	− 29 27 53.5	+ 18.4	F.	
18	. .	. .	. .	− 3 6.9	63 27 2.3	1 59.5	− 24 35 22.6	+ 17.0	F.	
19	. .	. .	. .	− 1 57.6	62 58 10.9	1 57.1	− 24 6 28.7	+ 16.8	F.	
20	. .	. .	. .	+ 1 8.5	57 11 18.2	1 32.8	− 18 19 11.8	+ 15.2	F.	Very faint.
21	. .	. .	. .	+ 2 16.2	7 37 26.5	8.0	+ 31 16 4.8	+ 0.6	F.	
22	. .	. .	. .	− 1 6.8	0 44 5.6	0.8	+ 38 9 32.8	− 0.8	F.	
23	. .	. .	. .	+ 0 9.5	S. 0 45 21.9	0.8	+ 38 8 16.5	− 0.8	F.	
24	. .	. .	. .	+ 1 49.0	N. 8 28 0.7	8.9	+ 47 21 48.8	+ 2.6	F.	
25	29.986	37.0	34.9	− 1 42.3	S. 21 23 27.9	23.5	+ 17 29 47.9	+ 5.0	F.	
26	. .	. .	. .	− 0 22.6	70 29 49.8	2 48.2	− 31 38 58.8	+ 16.7	F.	
27	. .	. .	. .	+ 0 52.7	53 26 5.9	1 20.9	− 14 33 47.6	+ 12.6	F.	
28	. .	. .	. .	+ 0 45.4	64 45 55.5	2 6.6	− 25 53 32.9	+ 14.7	F.	
29	30.010	37.8	35.5	− 0 47.6	74 9 19.9	3 28.8	− 35 19 9.5	+ 15.8	F.	
30	. .	. .	. .	+ 0 2.2	16 30 10.9	17.8	+ 22 23 10.5	+ 4.2	F.	
31	. .	. .	. .	+ 1 17.8	65 11 28.0	2 9.8	− 26 19 58.5	+ 13.6	F.	
32	. .	. .	. .	− 0 11.2	36 39 57.8	44.9	+ 2 12 56.6	+ 4.6	F.	
33	. .	. .	. .	− 1 11.8	59 43 59.5	1 43.2	− 20 52 3.5	+ 11.7	F.	
34	. .	. .	. .	+ 0 50.9	62 6 3.6	1 54.0	− 23 14 18.4	+ 10.6	F.	
35	. .	. .	. .	− 1 33.4	62 23 34.0	1 55.9	− 23 31 50.6	+ 10.0	F.	
36	. .	. .	. .	+ 1 32.8	7 26 39.8	8.0	+ 31 26 51.5	+ 3.8	F.	
37	. .	. .	. .	+ 2 6.0	7 27 12.9	8.0	+ 31 26 18.4	+ 3.8	F.	
38	. .	. .	. .	+ 1 56.5	7 27 3.4	8.0	+ 31 26 27.8	+ 3.9	F.	
39	30.050	35.0	29.0	− 1 59.2	S. 7 23 7.7	7.9	+ 31 30 23.6	+ 3.9	F.	
40	. .	. .	. .	+ 0 1.5	N. 11 4 50.9	11.9	+ 49 58 42.0	+ 2.6	F.	
41	. .	. .	. .	+ 1 22.3	N. 9 18 29.8	10.0	+ 48 12 19.1	+ 2.9	F.	
42	. .	. .	. .	+ 1 31.5	S. 68 16 39.8	2 32.1	− 29 25 32.7	+ 7.8	F.	
43	. .	. .	. .	− 3 39.9	67 16 28.0	2 24.9	− 28 25 13.5	+ 7.8	F.	
44	30.044	34.0	28.4	− 2 50.0	67 17 17.9	2 24.8	− 28 26 3.6	+ 7.8	F.	
45	30.290	42.0	42.0	− 3 1.0	10 17 7.3	14.5	+ 28 36 17.4	− 1.0	Y.	
46	. .	. .	. .	− 1 47.8	11 53 20.3	12.6	+ 27 0 6.3	− 0.4	Y.	
47	. .	. .	. .	− 1 46.7	11 53 21.5	12.6	+ 27 0 5.2	− 0.4	Y.	
48	30.288	42.4	43.0	− 0 44.2	23 54 23.7	26.5	+ 14 58 49.1	+ 4.0	Y.	
59	30.292	42.5	41.0	+ 1 19.0	62 26 26.9	1 54.4	− 23 34 42.1	+ 17.5	Y.	
50	. .	. .	. .	− 1 34.8	50 13 34.1	1 12.0	− 11 21 6.9	+ 13.6	Y.	
51	. .	. .	40.2	− 2 36.5	S. 50 12 32.4	1 12.0	− 11 20 5.1	+ 13.6	Y.	
52	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
53	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
54	. .	. .	. .	− 0 17.5	N. 20 35 10.5	22.5	+ 59 29 12.3	− 7.7	F.	
55	30.268	45.0	40.3	− 0 57.2	S. 12 44 8.9	13.6	+ 26 9 16.8	+ 2.1	F.	
56	. .	. .	. .	− 2 21.2	48 17 42.8	1 7.2	− 9 25 10.8	+ 13.4	F.	
57	. .	. .	. .	+ 0 16.8	70 15 24.8	2 46.0	− 31 24 31.5	+ 18.8	F.	
58	. .	. .	. .	− 1 44.4	64 53 22.1	2 7.8	− 26 1 50.6	+ 17.1	F.	
69	. .	. .	. .	+ 1 10.0	10 26 15.8	11.1	+ 28 27 12.4	+ 2.0	F.	Very faint.
60	30.274	43.0	36.7	− 0 52.1	77 39 13.8	4 29.9	− 38 50 4.4	+ 18.3	F.	
61	. .	. .	. .	− 4 9.1	17 25 55.1	19.0	+ 21 27 25.2	+ 4.3	F.	Saw no other.
62	. .	. .	. .	− 3 7.8	8 36 56.4	9.2	+ 30 16 33.6	+ 2.2	F.	
63	. .	. .	. .	− 1 11.2	8 38 53.0	9.2	+ 30 14 37.1	+ 2.2	F.	
64	. .	. .	. .	− 2 4.9	S. 6 47 58.7	7.2	+ 32 5 33.4	− 2.2	F.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 21	1	Lacaille 1993	7.0	3	III–VII.	354 35 2.3	10.7	5.8	12.2	6.0	2.6	6.60	32.192	. .	32.762
	2	Anon. $5^h 49^m 42^s$	. .	3	III–VII.	311 35 3.1	9.0	4.2	11.0	8.9	4.5	6.78	20.910	. .	21.472
	3	Anon. $5^h 51^m 4^s$	. .	2	VI, IX.	" " "	"	"	"	"	"	"	35.411	. .	35.985
	4	Weisse (2) V, 1980	. .	3	IV–VI.	292 55 5.6	12.0	7.8	13.8	12.0	9.2	10.07	30.478	. .	31.040
	5	Anon. $6^h 13^m 9^s$	. .	3	IV–VI.	297 40 4.1	8.8	5.8	13.1	9.0	7.1	7.98	28.009	. .	28.571
	6	Anon. $6^h 37^m 4^s$	. .	3	VI, VII, VIII.	342 10 4.8	13.0	8.8	16.1	10.3	5.0	9.67	38.556	. .	39.138
	7	O. Arg. S. 5704	7.0	3	VI, VII, VIII.	345 15 4.0	10.9	6.7	13.0	8.0	3.7	7.72	29.363	. .	29.946
	8	Anon. $6^h 49^m 9^s$	8.5	3	IV–VI.	347 40 5.8	13.4	9.0	15.8	9.2	6.0	9.87	32.778	. .	33.343
	9	Anon. $7^h 3^m 1^s$	. .	4	II, III, VIII, IX.	350 5 5.4	12.8	8.2	15.9	9.0	5.8	9.52	32.962	. .	33.546
	10	Lacaille 2637	. .	3	IV–VI.	" " "	"	"	"	"	"	"	31.105	. .	31.670
	11	O. Arg. S. 6490	. .	3	III–VII.	347 0 4.8	12.0	9.6	16.0	8.2	6.2	9.47	30.298	. .	30.866
	12	Weisse VII, 461	. .	3	III–VII.	333 45 6.3	13.3	8.5	15.2	10.8	5.6	9.95	33.955	. .	34.521
	13	Uranus	. .	3	IV–VI.	296 20 5.2	12.5	7.5	15.0	12.1	8.4	10.12	26.526	. .	27.088
22	14	Nadir	. .	.	. .	100 0 3.8 3.5	14.7 15.1	6.8 6.2	16.0 17.1	12.2 12.6	10.7 11.2	10.82	29.771	+0.453	
	15	Lacaille 814	. .	3	III–VII.	347 15 2.5	12.8	6.7	13.0	8.5	7.0	8.42	30.689	. .	31.147
25	16	Lacaille 814	7.0	3	III, IV, V.	347 15 0.7	5.9	3.5	10.8	2.7	2.1	4.28	30.420	+0.565	30.982
	17	Lacaille 816	7.0	3	VII, VIII, IX.	344 55 0.9	5.3	3.8	8.4	3.2	2.0	3.93	20.405	. .	20.997
	18	Nadir	. .	.	. .	100 0 0.6	8.8	3.0	12.0	8.2	6.8	6.57	29.645		
	19	Weisse III, 343	7.0	3	III–VII.	310 35 0.9	7.0	2.1	6.9	6.2	3.2	4.38	30.493	. .	31.057
	20	Weisse (2) III, 733	8.0	3	IV–VI.	292 45 2.7	7.6	3.2	9.5	8.5	6.1	6.27	31.307	. .	31.871
	21	Lalande 6820	6.0	3	IV–VI.	282 50 4.1	8.2	4.8	11.3	8.8	8.0	7.53	28.225	. .	28.789
	22	Weisse (2) III, 932	7.8	3	III–VII.	284 40 1.6	6.8	3.9	11.0	7.2	7.0	6.25	27.904	. .	28.462
	23	B. A. C. 1308	. .	3	III–VII.	349 20 2.3	10.3	7.0	14.0	6.6	2.9	7.18	33.520	. .	34.091
	24	Lacaille 1395	. .	3	IV–VI.	" " "	"	"	"	"	"	"	38.623	. .	39.190
	25	Anon. $4^h 11^m 48^s$	. .	3	III–VII.	" " "	"	"	"	"	"	"	37.862	. .	38.433
	26	Anon. $4^h 17^m 50^s$	. .	3	IV–VI.	347 20 2.4	8.6	6.0	12.8	6.7	2.9	6.57	21.803	. .	22.370
	27	Lacaille 1485	. .	3	IV–VI.	348 0 2.6	9.8	5.4	11.8	6.0	3.2	6.47	26.913	. .	27.480
	28	O. Arg. S. 3154	. .	3	IV–VI.	" " "	"	"	"	"	"	"	27.169	. .	27.736
	29	53 Eridani	5.5	3	III–VII.	333 25 2.1	9.1	4.6	10.7	7.9	2.8	6.20	27.430	. .	27.997
	30	O. Arg. S. 3382	. .	3	III–VII.	345 25 2.8	8.3	5.0	10.3	6.1	2.2	5.78	31.499	. .	32.069
	31	Anon. $4^h 48^m 38^s$	9.2	3	IV–VI.	288 55 4.0	9.0	4.3	11.0	9.3	6.7	7.38	34.345	. .	34.909
	32	B. A. C. 1565	. .	3	IV–VI.	239 50 4.0	8.5	8.3	16.1	10.4	10.2	9.58	30.112	. .	30.562
	33	O. Arg. S. 3917	9.2	3	III–VII.	335 5 4.7	10.0	5.9	11.6	9.1	4.5	7.63	33.170	. .	33.738
	34	χ Aurigæ	. .	3	III–VII.	286 50 4.1	7.6	4.0	13.0	8.6	6.8	7.35	33.603	. .	34.162
	35	Anon. $5^h 32^m 51^s$	. .	3	IV–VI.	248 40 5.5	9.0	9.9	18.0	11.1	11.1	10.77	25.653	. .	26.210
	36	B. A. C. 1894	. .	3	III–VII.	348 0 2.1	8.6	5.5	13.1	4.9	2.9	6.18	26.237	. .	26.807
	37	O. Arg. S. 4474	. .	3	III–VII.	347 40 1.5	8.4	4.6	11.0	5.0	2.2	5.45	33.407	. .	33.977
	38	B. A. C. 1941	. .	3	VI, VII, VIII.	352 45 2.7	12.0	7.0	16.5	7.4	3.3	8.15	28.533	. .	29.121
	39	Lacaille 2151	8.0	3	III–VII.	355 10 6.6	15.0	11.0	18.6	10.6	7.3	11.52	34.099	. .	34.671
	40	Weisse (2) VI, 136	. .	3	VII, VIII, IX.	287 20 0.6	6.3	1.3	10.7	4.9	4.0	4.63	23.605	. .	24.163
	41	Anon. $6^h 43^m 36^s$	. .	3	IV–VI.	347 29 58.6	66.9	64.0	71.0	63.2	60.2	63.98	33.914	. .	34.481
	42	Anon. $6^h 45^m 52^s$	. .	2	IV, V.	" " "	"	"	"	"	"	"	39.510	. .	40.073
	43	Anon. $6^h 46^m 0^s$	. .	1	VIII.	" " "	"	"	"	"	"	"	36.430	. .	37.020
	44	Anon. $6^h 46^m$ —	. .	1	IX.	" " "	"	"	"	"	"	"	36.760	. .	37.361
	45	Anon. $7^h 4^m 22^s$	. .	2	V, VI.	343 50 2.0	9.0	5.6	12.0	6.7	2.3	6.27	26.305	. .	26.874
	46	Anon. $7^h 4^m 22^s$	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	26.536	. .	27.139
	47	O. Arg. S. 6678	. .	3	III–VII.	346 50 3.1	10.3	8.5	13.0	6.9	3.6	7.57	32.903	+0.565	33.473
	48	Anon. $7^h 23^m 34^s$	. .	4	I, II, VIII, IX.	296 20 2.2	8.3	2.9	10.5	6.0	3.5	5.57	29.724	. .	30.273
	49	Uranus	. .	3	III–VII.	" " "	"	"	"	"	"	"	29.111	. .	29.672
	50	O. Arg. S. 7167	. .	3	III–VII.	350 0 2.9	11.7	7.8	15.6	7.5	2.8	8.05	28.473	. .	29.044
	51	O. Arg. S. 7289	. .	3	IV–VI.	346 30 4.0	10.0	7.3	14.4	6.3	3.0	7.50	31.334	. .	31.900
	52	Anon. $7^h 42^m 0^s$	. .	3	VI, VII, VIII.	280 35 5.1	12.3	8.7	17.5	10.8	10.0	10.73	33.389	. .	33.953
	53	Lacaille 3078	. .	3	IV–VI.	352 50 5.7	14.9	9.0	19.0	9.9	5.9	10.73	25.036	. .	25.603
26	54	Anon. $2^h 33^m 10^s$	8.0	3	III–VII.	350 5 6.4	16.8	8.1	17.9	11.7	11.1	12.00	37.439	+0.439	37.884
	55	O. Arg. S. 1735	6.5	3	III, VII, IX.	" " "	"	"	"	"	"	"	34.018	. .	34.477
	56	B. A. C. 854	. .	2	VII, IX.	344 55 4.6	13.8	6.8	11.9	10.1	8.1	9.22	30.024	. .	30.495
	57	Anon. $3^h 10^m 41^s$	9.5	4	III, V, VII, IX.	295 5 2.2	11.2	1.8	10.2	9.7	8.4	7.25	34.429	. .	34.866
	58	Lacaille 1111	6.5	5	I–IX.	355 10 1.7	12.8	4.9	12.9	7.7	5.9	7.65	32.220	. .	32.677
	59	Anon. $3^h 37^m 28^s$	. .	3	I, III, V.	294 50 3.3	10.7	3.5	11.3	11.0	8.8	8.10	29.789	. .	30.202
	60	Anon. $3^h 38^m 17^s$	. .	3	IV–VI.	" " "	"	"	"	"	"	"	36.977	. .	37.415
	61	Anon. $3^h 39^m 14^s$	. .	3	V, VII, IX.	" " "	"	"	"	"	"	"	36.381	. .	36.823
	62	Rumker 984	. .	2	II, VIII.	" " "	"	"	"	"	"	"	22.763	. .	23.189
	63	B. A. C. 1182	. .	2	IV–VI.	" " "	"	"	"	"	"	"	21.054	. .	21.491
	64	Rumker 1089	6.0	3	III–VII.	304 5 5.1	12.9	5.9	13.5	13.2	12.0	10.43	30.733	. .	31.170
	65	Weisse IV, 114	7.8	3	III–VII.	329 35 4.9	14.5	8.2	13.9	11.4	10.1	10.50	28.161	. .	28.602

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 26.6	S. 74 33 40.0	3 36.6	− 35 43 37.4	+ 14.8	F.	
2	. .	. .	. .	+ 4 26.5	31 39 33.3	37.4	+ 7 13 28.5	+ 7.6	F.	
3	. .	. .	. .	− 3 7.7	31 31 59.1	37.3	+ 7 21 2.9	+ 7.6	F.	
4	. .	. .	. .	− 0 32.6	12 54 37.4	13.9	+ 25 58 47.9	+ 4.0	F.	
5	. .	. .	. .	+ 0 44.8	17 40 52.7	19.4	+ 21 12 27.2	+ 5.0	F.	Another star preceding 17^s, nearly the same declination, a little south.
6	. .	. .	. .	− 4 46.8	62 5 22.9	1 54.4	− 23 13 38.0	+ 10.4	F.	Several stars in field.
7	. .	. .	. .	+ 0 1.7	65 15 9.4	2 11.3	− 26 23 41.4	+ 10.6	F.	
8	. .	. .	. .	− 1 44.8	67 38 25.1	2 27.0	− 28 47 12.8	+ 10.1	F.	
9	. .	. .	. .	− 1 51.2	70 3 18.3	2 46.4	− 31 12 25.5	+ 9.3	F.	
10	. .	. .	. .	− 0 52.3	70 4 17.2	2 46.6	− 31 13 24.6	+ 9.3	F.	
11	. .	. .	. .	− 0 27.1	66 59 42.4	2 22.7	− 28 8 25.8	+ 8.7	F.	
12	. .	. .	. .	− 2 21.7	53 42 48.2	1 22.9	− 14 50 31.9	+ 16.6	F.	
13	30.286	39.5	32.3	+ 1 31.1	16 21 41.2	17.9	+ 22 31 40.1	. .	F.	
14	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
15	30.288	46.8	46.3	− 0 35.9	67 14 32.5	2 20.4	− 28 23 13.7	+ 19.5	Y.	Poor observation, under clouds.
16	. .	. .	. .	− 0 30.8	67 14 33.5	2 18.7	− 26 23 12.9	+ 19.8	F.	
17	29.760	48.7	43.8	+ 4 41.3	64 59 45.3	2 4.9	− 26 8 10.9	+ 19.2	F.	
18	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	F.	
19	. .	. .	. .	− 0 33.1	30 34 31.3	34.6	+ 8 18 33.4	+ 8.0	F.	
20	. .	. .	. .	− 0 58.6	12 44 7.6	13.3	+ 26 9 18.3	+ 2.2	F.	
21	. .	. .	. .	+ 0 37.9	2 50 45.4	2.9	+ 36 2 50.9	− 1.0	F.	
22	29.764	47.3	42.8	+ 0 48.2	4 40 54.4	4.8	+ 34 12 40.0	− 0.3	F.	
23	. .	. .	. .	− 2 8.2	69 17 59.0	2 34.4	− 30 26 54.1	+ 18.9	F.	
24	. .	. .	. .	− 4 48.4	69 15 18.8	2 34.0	− 30 24 13.6	+ 18.9	F.	
25	. .	. .	. .	− 4 24.6	69 15 42.6	2 34.1	− 30 24 37.4	+ 18.9	F.	
26	. .	. .	. .	+ 3 58.5	67 24 5.1	2 20.5	− 28 32 46.3	+ 18.3	F.	
27	. .	. .	. .	+ 1 18.9	68 1 25.3	2 24.9	− 29 10 11.0	+ 18.2	F.	
28	. .	. .	. .	+ 1 10.9	68 1 17.3	2 24.9	− 29 10 3.0	+ 18.1	F.	
29	29.770	46.0	40.8	+ 1 2.7	53 26 8.9	1 19.3	− 14 33 49.0	+ 14.5	F.	
30	. .	. .	. .	− 1 4.8	65 24 1.0	2 8.1	− 26 32 29.8	+ 17.1	F.	
31	. .	. .	. .	− 2 33.9	S. 8 52 33.5	9.2	+ 30 0 56.6	+ 2.0	F.	The first of five stars in the field.
32	. .	. .	. .	− 0 17.6	N. 40 10 8.0	49.8	+ 79 4 37.0	− 8.2	F.	
33	. .	. .	. .	− 1 57.2	S. 55 3 10.4	1 24.3	− 16 10 55.5	+ 13.6	F.	
34	. .	. .	. .	− 2 10.5	S. 6 47 56.9	7.0	+ 32 5 35.3	+ 2.0	F.	
35	. .	. .	. .	+ 1 58.6	N. 31 17 50.6	35.9	+ 70 12 5.8	− 5.5	F.	Three stars in field.
36	. .	. .	. .	+ 1 39.9	S. 68 1 46.1	2 25.7	− 29 10 32.5	+ 14.6	F.	
37	. .	. .	. .	− 2 4.7	67 38 0.8	2 22.9	− 28 46 44.4	+ 14.4	F.	
38	. .	. .	. .	+ 0 27.5	72 45 35.7	3 8.6	− 33 55 5.0	+ 14.8	F.	
39	. .	. .	. .	− 2 26.4	75 7 45.1	3 39.5	− 36 17 45.4	+ 14.7	F.	
40	29.800	44.2	38.7	+ 3 2.6	7 23 7.2	7.7	+ 31 30 24.4	+ 3.0	F.	
41	. .	. .	. .	− 2 20.5	67 27 43.5	2 22.1	− 28 36 26.4	+ 11.5	F.	
42	. .	. .	. .	− 5 16.2	67 24 47.8	2 21.8	− 28 33 30.4	+ 11.5	F.	
43	. .	. .	. .	− 3 40.2	67 26 23.8	2 22.0	− 28 35 6.6	+ 11.5	F,	
44	. .	. .	. .	− 3 50.9	67 26 13.0	2 22.0	− 28 34 55.8	+ 11.4	F.	
45	. .	. .	. .	+ 1 37.8	63 51 44.1	2 0.6	− 25 19 5.4	+ 10.0	F.	
46	. .	. .	. .	+ 1 29.5	63 51 35.8	2 0.6	− 24 59 57.1	+ 10.0	F.	
47	. .	. .	. .	− 1 48.9	66 48 18.7	2 18.0	− 27 56 57.4	+ 9.4	F.	
48	. .	. .	. .	− 0 8.6	16 19 57.0	17.4	+ 22 33 24.8	+ 5.4	F.	
49	. .	. .	. .	+ 0 9.8	16 20 15.3	17.4	+ 22 33 6.5	. .	F.	
50	. .	. .	. .	+ 0 29.9	70 0 38.0	2 42.3	− 31 9 41.0	+ 8.4	F.	
51	. .	. .	. .	− 0 59.5	66 29 8.0	2 16.0	− 27 37 44.8	+ 8.1	F.	
52	29.826	43.0	36.6	− 2 3.9	0 33 6.8	0.6	+ 38 20 31.9	+ 4.2	F.	
53	29.830	43.0	37.0	+ 2 17.6	72 52 28.3	3 11.2	− 34 2 0.2	+ 7.0	F.	
54	30.050	52.7	49.0	− 4 7.3	70 1 4.7	2 39.5	− 31 10 4.9	+ 20.5	Y.	
55	. .	. .	. .	− 2 20.3	70 2 51.7	2 39.7	− 31 11 52.1	+ 20.6	Y.	
56	. .	. .	48.3	− 0 15.5	64 54 53.7	2 4.3	− 26 3 18.8	+ 19.2	Y.	
57	30.046	52.3	48.0	− 2 32.5	15 2 34.7	15.8	+ 23 50 48.8	+ 2.8	Y.	Very faint.
58	. .	. .	. .	− 1 23.9	75 8 43.7	3 37.5	− 36 18 42.0	+ 21.4	Y.	
59	. .	. .	. .	− 0 6.3	14 50 1.8	15.5	+ 24 3 22.0	+ 3.0	Y.	Pleiad.
60	. .	. .	. .	− 3 52.6	14 46 15.5	15.5	+ 24 7 8.3	+ 3.0	Y.	Pleiad.
61	. .	. .	. .	− 3 34.0	14 56 34.1	15.7	+ 23 56 49.5	+ 3.0	Y.	Pleiad.
62	. .	. .	. .	+ 3 33.0	14 53 41.1	15.6	+ 23 59 42.6	+ 3.0	Y.	Pleiad.
63	. .	. .	. .	+ 4 25.9	14 54 34.0	15.6	+ 23 58 49.6	+ 3.0	Y.	Pleiad.
64	. .	. .	. .	− 0 36.7	24 4 33.8	26.2	+ 14 48 39.2	+ 6.2	Y.	
65	30.040	52.1	46.8	+ 0 43.7	S. 49 35 54.2	1 8.9	− 10 43 23.8	+ 14.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.										MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						°	'	"	"	"	"	"	"	"	r.	r.	r.
Jan. 26	1	Anon. $4^h 20^m 13^s$.	9.5	3	III–VII.	302	25	4.0	12.9	5.3	12.7	11.1	9.7	9.28	25.707	+0.439	26.143
	2	Lacaille 1617. . .	6.5	3	III–VII.	354	10	1.9	12.6	4.7	12.5	8.9	6.1	7.78	29.179	. .	29.625
	3	Lacaille 1666. . .	7.0	3	IV–VI.	353	55	3.9	14.0	6.8	15.0	10.6	8.0	9.72	27.334	. .	27.775
	4	*m* Tauri	5.3	3	III–VII.	300	25	4.2	14.2	5.7	13.2	11.2	10.2	9.78	29.270	. .	29.706
	5	Weisse V, 56. . .	9.0	3	V, VII, IX.	314	45	3.7	13.3	6.0	11.6	11.8	9.4	9.30	34.528	. .	34.978
	6	Nadir	. .	.	. .	100	0	0.8	12.3	1.7	13.1	9.5	8.4	7.63	29.683	. .	. .
	7	O. Arg. N. 6082 . .	9.3	3	IV, V, VII.	248	40	2.2	11.9	7.8	16.9	11.2	12.4	10.40	36.704	. .	37.128
	8	Anon. $5^h 42^m 31^s$.	9.0	3	III–VII.	332	35	5.1	14.7	8.4	15.2	12.8	8.9	10.85	30.729	. .	31.170
	9	Lacaille 2048. . .	7.0	3	III–VII.	345	30	0.3	11.2	3.8	10.0	6.4	3.2	5.82	23.984	. .	24.428
	10	Lacaille 2151. . .	7.5	3	III–VII.	355	10	1.9	13.8	6.6	12.6	6.7	5.0	7.77	33.943	. .	34.389
	11	Anon. $6^h 7^m 33^s$ . .	. .	2	I, IX.	346	35	0.0	10.5	2.7	10.2	5.3	3.8	5.42	32.961	. .	33.426
	12	Anon. $6^h 7^m 33^s$ . .	. .	2	III, V.	“	“	“	“	“	“	“	“	“	30.769	. .	31.206
	13	Anon. $6^h 7^m 33^s$ . .	. .	2	III, VI.	“	“	“	“	“	“	“	“	“	32.112	. .	32.559
29	14	Weisse (2) IV, 1261.	9.0	2	III, V.	291	20	1.1	13.2	3.8	14.2	8.4	8.2	8.15	30.222	+0.455	30.673
	15	Nadir	. .	.	. .	100	0	0.3	15.1	3.8	15.9	10.1	8.0	8.87	29.704	. .	. .
	16	Lacaille 2065. . .	6.3	3	III, V, IX.	350	25	2.8	15.3	8.1	18.0	8.9	5.6	9.78	31.085	. .	31.557
	17	Weisse VI, 55 . .	8.5	3	I, III, V.	328	15	4.1	16.2	8.6	16.8	9.4	7.1	10.37	25.243	. .	25.689
	18	Weisse VI, 73 . .	8.2	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	34.398	. .	34.868
	19	ξ Geminorum . . .	5.0	3	III–VII.	305	50	1.6	12.2	3.8	13.1	8.1	6.0	7.47	27.295	. .	27.748
Feb. 1	20	Lacaille 1102. . .	7.5	3	III–VII.	347	50	3.5	18.1	9.4	19.7	9.0	7.4	11.18	24.919	+0.414	25.338
	21	Lacaille 1111. . .	6.5	3	III–VII.	355	10	3.0	17.9	8.9	19.1	9.2	5.9	10.67	32.559	. .	32.980
	22	Weisse (2) III, 890 .	8.8	3	III–VII.	284	25	1.8	14.6	7.0	18.1	9.7	8.6	9.97	34.509	. .	34.916
	23	Weisse (2) III, 906 .	7.8	2	VII, IX.	“	“	“	“	“	“	“	“	“	23.732	. .	24.142
	24	Weisse (2) III, 932 .	8.0	.	. .	284	40	1.8	14.8	7.2	18.8	9.7	9.0	10.22	28.067	. .	28.454
	25	O. Arg. S. 2803 . .	8.2	3	III–VII.	342	30	4.1	18.4	10.1	19.8	11.2	7.0	11.77	29.920	. .	30.338
	26	Anon. $4^h 6^m 10^s$.	9.0	3	III–VII.	325	45	0.9	12.9	3.5	13.8	7.8	3.1	7.00	32.407	. .	32.822
	27	Anon. $4^h 17^m 23^s$.	8.3	3	III–VII.	312	25	1.0	13.1	5.0	14.2	7.9	4.1	7.55	35.673	. .	36.086
	28	Lacaille 1557. . .	7.8	3	III–VII.	358	40	1.6	16.1	7.8	20.8	8.4	3.9	9.77	31.471	. .	31.893
	29	Lacaille 1613. . .	6.5	3	III–VII.	346	15	0.4	13.3	6.7	15.9	6.3	2.0	7.43	37.069	. .	37.488
	30	Anon. $4^h 55^m 0^s$ . .	9.0	2	VII, IX.	313	0	2.7	15.9	6.9	16.1	10.1	5.9	9.60	28.206	. .	28.635
	31	O. Arg. S. 3720 . .	8.5	3	IV–VI.	344	25	4.4	17.8	8.5	19.8	10.4	6.2	11.18	30.026	. .	30.441
	32	Anon. $5^h 5^m 52^s$ . .	9.3	3	III–VII.	“	“	“	“	“	“	“	“	“	25.426	. .	25.844
	33	Weisse (2) V, 647 .	8.3	3	III–VII.	288	5	0.4	13.2	2.9	16.2	8.2	4.9	7.63	31.741	. .	32.149
	34	Anon. $5^h 32^m 41^s$.	. .	3	IV–VI.	248	40	3.8	17.1	10.8	25.3	12.2	11.9	13.52	36.950	. .	37.362
	35	Anon. $5^h 43^m 28^s$.	9.5	1	V.	247	15	1.1	14.4	9.7	24.2	10.2	9.4	11.50	25.758	. .	26.172
	36	Anon. $5^h 43^m 31^s$.	9.5	2	III, VII.	“	“	“	“	“	“	“	“	“	34.283	. .	34.653
	37	Lalande 12053 . .	8.0	3	III–VII.	297	45	2.8	18.1	7.2	oblit.	11.8	8.1	12.29	30.313	. .	30.723
	38	O. Arg. S. 5574 . .	7.5	3	III–VII.	347	59	57.5	74.0	65.5	76.8	65.1	61.4	66.72	33.564	. .	33.983
	39	Anon. $6^h 44^m 40^s$.	7.3	3	II, IV, V.	351	15	2.2	17.8	8.4	20.9	9.3	4.9	10.58	30.689	. .	31.102
	40	χ Canis Majoris . .	5.8	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	34.611	. .	35.050
	41	Lacaille 2566. . .	. .	2	I, IX.	349	50	0.5	16.4	8.1	20.7	8.8	3.8	9.72	31.978	. .	32.421
	42	Anon. $6^h 55^m 16^s$.	. .	3	III–VII.	“	“	“	“	“	“	“	“	“	40.488	. .	40.908
	43	Anon. $7^h 4^m 24^s$.	8.5	3	III–VII.	343	49	59.2	75.2	65.9	79.2	68.1	62.1	68.28	26.422	. .	26.840
	44	O. Arg. S. 6553 . .	8.5	1	V.	349	29	59.6	76.4	66.2	79.9	67.2	62.5	68.63	26.564	. .	26.978
	45	O. Arg. S. 6554 . .	7.5	2	VII, IX.	“	“	“	“	“	“	“	“	“	27.684	. .	28.134
	46	B. A. C. 2466. . .	7.0	3	III–VII.	350	20	0.5	16.8	7.8	20.4	8.1	3.9	9.58	29.997	. .	30.417
	47	O. Arg. S. 7063 . .	8.0	3	III–VII.	348	0	1.8	18.3	10.5	20.1	9.4	5.1	10.87	32.003	. .	32.423
	48	4 Puppis	5.5	3	III–VII.	333	10	2.7	19.0	9.8	21.4	11.1	5.4	11.57	34.826	. .	35.242
	49	Nadir	. .	.	. .	100	0	1.5	19.4	7.1	22.5	10.2	8.5	11.53	29.831	. .	. .
2	50	Weisse III, 139 . .	9.0	3	V, VII, IX.	305	30	2.8	13.4	3.8	14.1	10.0	7.9	8.67	27.591	+0.432	28.030
	51	Weisse III, 168 . .	8.0	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	27.479	. .	27.918
	52	Anon. $3^h 21^m 10^s$.	9.0	3	III–VII.	306	35	1.7	12.9	3.2	13.1	9.5	8.5	8.15	24.745	. .	25.175
	53	Weisse (2) III, 890 .	8.7	3	III–VII.	284	25	1.7	13.3	4.7	15.2	11.1	9.5	9.25	34.467	. .	34.892
	54	Weisse (2) III, 906 .	7.8	2	VII, IX.	“	“	“	“	“	“	“	“	“	23.701	. .	24.129
	55	Radcliffe 1084 . .	8.0	2	VII, IX.	278	30	1.8	13.0	3.3	14.4	10.0	9.6	8.68	30.853	. .	31.276
	56	Anon. $4^h 5^m 2^s$ . .	8.5	3	III–VII.	274	30	2.9	15.1	6.7	17.5	12.8	12.2	11.20	32.308	. .	32.731
	57	Anon. $4^h 6^m 2^s$ . .	8.0	2	V, VII.	“	“	“	“	“	“	“	“	“	34.587	. .	35.018
	58	Nadir	. .	.	. .	100	0	1.2	14.8	3.0	16.7	10.2	9.5	9.23	29.740	. .	. .
	59	Anon. $4^h 45^m 13^s$.	9.2	3	III–VII.	274	50	2.9	16.2	8.0	18.2	12.8	12.1	11.70	39.150	. .	39.573
	60	Weisse (2) IV, 1261 .	7.8	3	III–VII.	291	25	2.9	13.8	5.0	15.0	11.5	9.1	9.55	34.108	. .	34.535
	61	Anon. $5^h 5^m 37^s$.	9.0	3	III–VII.	288	35	0.0	9.8	1.3	10.2	7.7	4.6	5.60	29.541	. .	29.967
	62	Anon. $5^h 29^m 34^s$.	9.0	3	III–VII.	292	15	3.7	16.9	6.6	16.8	13.1	11.3	11.40	34.679	. .	35.106
	63	O. Arg. S. 5574 . .	. .	1	VII.	348	0	1.4	16.3	7.4	18.1	9.4	6.9	9.92	33.528	. .	33.980
	64	Lacaille 2507. . .	. .	3	III–VII.	342	40	3.8	16.9	7.9	18.0	11.3	8.4	11.05	33.762	. .	34.198
	65	Lacaille 2566. . .	7.0	3	IV–VI.	349	50	2.9	16.9	8.5	18.6	11.2	7.0	10.85	31.872	. .	32.306
	66	B. A. C. 2363. . .	7.0	3	III–VII.	294	0	1.2	13.2	5.8	15.2	10.4	7.9	8.95	34.353	. .	34.781

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 0.7	S. 22 27 10.0	24.3	+ 16 26 5.0	+ 5.7	Y.	Very faint.
2	30.046	52.0	46.4	+ 0 11.7	74 10 19.5	3 24.4	− 35 20 4.7	+ 18.8	Y.	
3	. .	. .	. .	+ 1 9.7	73 56 19.4	3 21.4	− 35 6 1.5	+ 18.4	Y.	
4	. .	. .	. .	+ 0 9.2	20 25 19.0	21.9	+ 18 27 58.4	+ 5.3	Y.	
5	. .	. .	46.3	− 2 36.1	34 42 33.2	40.7	+ 4 10 25.3	+ 9.2	Y.	Other stars in field.
6	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
7	30.042	51.5	46.1	− 3 43.6	N. 31 23 33.2	35.9	+ 70 17 48.3	− 5.8	Y.	Faint; other star to southward.
8	. .	. .	. .	− 0 36.7	S. 52 34 34.2	1 16.7	− 13 42 11.7	+ 12.5	Y.	
9	. .	. .	45.6	+ 2 54.3	65 33 0.1	2 8.7	− 26 41 29.6	+ 14.5	Y.	
10	. .	. .	. .	− 2 17.6	75 7 50.2	3 38.3	− 36 17 49.2	+ 15.0	Y.	
11	. .	. .	. .	− 1 47.4	66 33 18.0	2 15.0	− 27 41 53.8	+ 13.7	Y.	Star preceding and northward.
12	. .	. .	. .	− 0 37.8	66 34 27.6	2 15.1	− 27 43 3.5	+ 13.7	Y.	
13	30.038	51.2	45.2	− 1 20.2	66 33 45.2	2 15.1	− 27 42 21.0	+ 13.7	Y.	
14	29.806	48.0	40.0	− 0 21.1	11 19 47.1	11.8	+ 27 33 40.4	+ 2.6	Y.	
15	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
16	29.822	47.1	41.0	− 0 48.8	70 24 21.0	2 44.2	− 31 33 26.0	+ 15.7	Y.	
17	. .	. .	. .	+ 2 14.9	48 17 25.2	1 6.3	− 9 24 52.3	+ 11.5	Y.	
18	. .	. .	. .	− 2 32.6	48 12 37.8	1 6.2	− 9 20 4.7	+ 11.4	Y.	
19	29.836	46.2	40.2	+ 1 10.5	25 51 18.0	28.6	+ 13 1 52.6	+ 6.7	Y.	
20	. .	. .	. .	+ 2 25.8	67 52 37.0	2 26.6	− 29 1 24.3	+ 19.9	Y.	
21	30.026	40.6	36.4	− 1 33.4	75 8 37.3	3 42.6	− 36 18 40.7	+ 21.6	Y.	
22	. .	. .	. .	− 2 34.1	4 22 35.8	4.6	+ 34 30 58.8	− 0.6	Y.	
23	. .	. .	. .	+ 3 3.2	4 28 13.2	4.7	+ 34 25 21.4	− 0.6	Y.	
24	30.024	40.6	36.0	+ 0 48.4	4 40 58.6	4.9	+ 34 12 35.7	− 0.5	Y.	Good observation; hour angle 65^s.
25	. .	. .	. .	− 0 10.6	62 30 1.2	1 55.0	− 23 38 16.9	+ 18.1	Y.	
26	. .	. .	35.4	− 1 28.4	45 43 38.6	1 1.6	− 6 51 0.9	+ 13.2	Y.	Only star of this magnitude.
27	30.026	40.5	35.0	− 3 10.8	32 21 56.7	38.1	+ 6 31 4.4	+ 8.9	Y.	
28	. .	. .	. .	− 0 59.3	78 39 10.5	4 52.3	− 39 50 23.5	+ 20.6	Y.	
29	. .	. .	. .	− 3 54.9	66 11 12.5	2 15.8	− 27 19 49.0	+ 17.9	Y.	
30	30.032	40.0	34.1	+ 0 42.8	33 0 52.4	39.2	+ 5 52 7.6	. .	Y.	
31	. .	. .	. .	− 0 13.8	64 24 57.4	2 5.4	− 25 33 23.5	+ 16.9	Y.	
32	. .	. .	. .	+ 2 10.0	64 27 21.2	2 5.6	− 25 35 47.6	+ 16.9	Y.	
33	. .	. .	33.3	− 1 7.3	8 4 0.3	8.6	+ 30 49 30.4	+ 1.9	Y.	
34	. .	. .	. .	− 3 51.0	N. 31 23 37.4	36.9	+ 70 17 53.6	− 7.4	Y.	
35	30.036	39.1	32.5	+ 1 59.8	32 42 48.7	38.8	+ 71 37 6.8	− 6.9	Y.	Faint.
36	. .	. .	. .	− 2 25.9	N. 32 47 14.4	39.0	+ 71 41 32.6	− 6.9	Y.	Faint.
37	. .	. .	. .	− 0 22.7	S. 17 44 49.6	19.4	+ 21 8 30.2	+ 4.9	Y.	
38	. .	. .	. .	− 2 48.4	67 58 1.9	2 28.7	− 29 6 51.4	+ 10.0	Y.	
39	. .	. .	. .	− 0 34.5	71 14 36.0	2 56.7	− 32 23 53.5	+ 13.3	Y.	
40	30.052	38.2	31.8	− 2 38.3	71 12 32.3	2 56.3	− 32 21 49.3	+ 13.3	Y.	
41	. .	. .	. .	− 1 15.9	69 48 53.8	2 43.6	− 30 57 58.2	+ 12.6	Y.	Corr. +2″.09 applied to mean of A, B, E, D.
42	. .	. .	. .	− 5 42.5	69 44 27.2	2 43.0	− 30 53 31.0	+ 12.6	Y.	
43	30.068	38.1	31.4	+ 1 38.9	63 51 47.2	2 3.1	− 25 0 11.0	+ 11.5	Y.	
44	. .	. .	. .	+ 1 34.6	69 31 43.2	2 41.2	− 30 40 45.1	+ 11.5	Y.	
45	. .	. .	. .	+ 0 58.4	69 31 7.0	2 41.1	− 30 40 8.9	+ 11.5	Y.	
46	. .	. .	. .	− 0 13.1	70 19 56.5	2 48.0	− 31 29 5.3	+ 10.1	Y.	
47	30.064	37.8	32.1	− 1 15.9	67 58 54.9	2 28.7	− 29 7 44.4	+ 10.4	Y.	
48	. .	. .	. .	− 2 44.3	53 7 27.2	1 20.6	− 14 15 8.5	+ 9.0	Y.	
49	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
50	. .	. .	. .	+ 1 1.7	25 31 10.3	28.2	+ 13 22 0.8	+ 6.6	Y.	
51	29.934	46.4	43.1	+ 1 5.2	25 31 13.8	28.2	+ 13 21 57.3	+ 6.6	Y.	
52	. .	. .	. .	+ 2 30.9	26 37 39.1	29.6	+ 12 15 30.6	+ 7.0	Y.	
53	. .	. .	. .	− 2 33.4	4 22 35.9	4.5	+ 34 30 58.9	− 0.6	Y.	
54	. .	. .	. .	+ 3 3.6	4 28 12.9	4.6	+ 34 25 21.8	− 0.6	Y.	
55	29.938	46.1	42.5	− 0 40.0	N. 1 30 31.3	1.6	+ 40 24 12.1	− 2.5	Y.	
56	. .	. .	. .	− 1 25.6	5 31 14.4	5.7	+ 44 24 59.4	− 3.4	Y.	
57	. .	. .	. .	− 2 37.3	5 32 26.1	5.7	+ 44 26 11.1	− 3.4	Y.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
59	29.956	46.0	42.1	− 5 0.4	N. 5 14 48.7	5.4	+ 44 8 33.4	− 2.7	Y.	
60	. .	. .	. .	− 2 22.2	S. 11 22 47.4	11.9	+ 27 30 40.0	+ 2.1	Y.	
61	. .	. .	41.7	+ 0 1.0	8 35 6.6	9.0	+ 30 18 23.6	+ 1.7	Y.	
62	30.060	45.3	40.0	− 2 40.1	12 12 31.3	12.9	+ 26 40 55.0	+ 3.0	Y.	Faint.
63	29.984	43.5	37.4	− 2 4.8	67 58 5.2	2 26.7	− 29 6 52.6	+ 13.6	Y.	
64	. .	. .	. .	− 2 11.6	62 37 59.5	1 54.9	− 23 46 15.1	+ 12.4	Y.	
65	. .	. .	. .	− 1 12.2	69 48 58.6	2 41.1	− 30 58 0.5	+ 12.8	Y	
66	29.984	43.0	37.8	− 2 29.9	S. 13 57 39.1	14.8	+ 24 55 45.3	+ 4.6	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1870. Feb. 2	1	B. A. C. 2428.	7.0	3	III–VII.	352	20	1.3	16.5	6.4	18.1	8.2	4.6	9.18	29.555	+0.432	29.993
	2	Anon. $7^h\,21^m\,59^s$	8.5	3	IV–VI.	278	14	59.6	72.6	63.0	74.4	68.3	66.9	67.47	37.194	. .	37.624
	3	Weisse (2) VII, 594	8.3	2	I, IX.	“	“	“	“	“	“	“	“	“	27.617	. .	28.007
	4	O. Arg. S. 7131	7.7	3	III–VII.	346	0	0.8	14.3	5.7	14.4	7.8	4.0	7.83	30.636	. .	31.073
	5	O. Arg. S. 7376	8.0	3	III–VII.	346	10	1.7	14.9	7.4	15.9	9.1	5.9	9.15	27.465	. .	27.902
10	6	Weisse III, 781	8.5	3	V, VII, IX.	307	35	0.2	12.8	1.9	10.3	6.7	4.4	6.05	31.989	−1.498	30.499
	7	Nadir	. .	.	. .	100	0	0.9	16.9	4.8	18.9	10.7	9.3	10.25	31.703	. .	. .
	8	Anon. $5^h\,5^m\,18^s$	9.5	3	V, VII, IX.	344	15	1.7	16.1	6.9	16.3	9.1	5.6	9.28	32.944	. .	31.465
	9	O. Arg. S. 4003	7.3	3	III–VII.	349	5	0.8	16.8	7.2	18.0	9.2	4.5	9.42	32.381	. .	30.889
	10	Anon. $5^h\,29^m\,55^s$	8.5	3	III–VII.	320	10	3.1	16.8	8.1	16.0	10.8	7.0	10.30	27.532	. .	26.034
	11	Anon. $5^h\,49^m\,31^s$	9.3	3	III–VII.	347	50	2.4	19.2	10.2	19.8	10.3	7.9	11.63	35.424	. .	33.931
	12	Lacaille 2094.	7.0	3	IV–VI.	354	14	59.3	75.4	66.2	77.3	67.8	63.8	68.30	37.028	. .	35.532
	13	Lacaille 2131.	6.5	3	III–VII.	343	50	0.8	15.7	6.1	17.2	9.3	4.8	8.98	37.830	. .	36.336
	14	ξ Geminorum	5.0	3	III–VII.	305	50	1.8	15.3	5.1	16.8	10.8	7.2	9.50	29.340	. .	27.840
	15	Anon. 6 $39^m\,9^s$	9.0	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	34.524	. .	33.033
	16	O. Arg. S. 5887	8.0	3	III–VII.	346	15	2.1	17.3	8.2	17.9	10.1	5.7	10.22	31.021	. .	29.528
	17	Lacaille 2562.	7.5	3	IV–VI.	348	20	3.4	20.3	11.2	21.1	12.1	7.6	12.62	26.437	. .	24.941
	18	Weisse VII, 63	8.8	3	III–VII.	333	25	0.4	16.7	7.4	16.8	9.7	4.5	9.25	27.765	. .	26.269
	19	Anon. $7^h\,12^m\,41^s$	8.5	3	IV–VI.	293	40	0.3	14.9	6.4	16.5	10.3	6.2	9.10	31.251	. .	29.752
	20	Anon. $7^h\,13^m\,3^s$	7.5	2	VII, IX.	“	“	“	“	“	“	“	“	“	32.280	. .	30.790
	21	Anon. $7^h\,20^m\,41^s$	9.0	2	I, IX.	333	35	0.7	17.8	7.6	27.1	10.8	5.1	11.52	34.639	. .	33.153
	22	Anon. $7^h\,20^m\,41^s$	. .	2	IV, VI.	“	“	“	“	“	“	“	“	“	30.807	. .	29.310
	23	Anon. $7^h\,23^m\,27^s$	7.0	2	II, VIII.	“	“	“	“	“	“	“	“	“	30.131	. .	28.640
	24	Anon. $7^h\,23^m\,14^s$	8.5	1	V.	“	“	“	“	“	“	“	“	“	24.922	. .	23.424
	25	Anon. $7^h\,34^m\,0^s$	7.5	3	III–VII.	342	50	2.2	18.8	8.6	18.7	11.8	5.7	10.97	35.893	. .	34.399
	26	Lalande 15006	7.2	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	31.260	. .	29.783
	27	Anon. $7^h\,42^m\,58^s$	8.5	2	III, IV.	342	20	2.1	18.6	8.1	19.1	11.2	6.3	10.90	34.366	. .	32.863
	28	Anon. $7^h\,42^m\,58^s$	9.0	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	36.000	. .	34.523
	29	Lacaille 3086.	6.5	3	III–VII.	0	50	1.2	18.1	6.8	20.5	9.2	5.5	10.22	29.168	. .	27.679
	30	Lacaille 3229.	7.0	3	III–VII.	348	40	2.0	20.3	10.2	22.7	11.4	6.9	12.25	34.930	. .	33.437
	31	O. Arg. S. 8484	6.5	3	III–VII.	349	15	3.2	19.8	10.9	22.3	11.2	7.4	12.47	33.487	. .	31.994
	32	Anon. $8^h\,27^m\,16^s$	7.0	3	III–VII.	350	40	1.3	18.1	8.6	21.8	10.7	5.5	11.00	34.585	. .	33.093
	33	Weisse (2) VIII, 894.	8.0	3	III–VII.	291	10	1.9	16.2	8.1	18.4	10.5	7.2	10.38	27.753	. .	26.250
	34	O. Arg. S. 8993	. .	3	III–VII.	346	10	4.2	19.4	11.4	20.5	11.3	7.9	12.45	33.993	. .	32.500
	35	Anon. $8^h\,50^m\,16^s$	7.2	3	III–VII.	356	40	0.2	18.1	8.2	20.8	8.3	oblit.	10.40	32.620	. .	31.129
	36	O. Arg. S. 9258	7.5	2	VII, IX.	343	45	0.9	17.8	7.8	20.1	10.5	6.0	10.52	27.553	. .	26.087
	37	Anon. $9^h\,2^m\,23^s$	7.5	3	V, VII, IX.	350	25	2.9	20.9	11.1	22.8	12.0	6.7	12.73	37.985	−1.498	36.512
16	38	Weisse IV, 957	8.0	3	III–VII.	304	50	0.7	12.1	3.1	13.1	9.5	6.9	7.57	29.022	−1.493	27.527
	39	Lacaille 1666.	7.5	3	III–VII.	354	0	0.8	13.8	5.8	13.9	8.1	4.6	7.83	38.901	. .	37.415
	40	O. Arg. S. 3717	8.3	3	III–VII.	344	15	2.7	14.7	7.3	14.8	9.8	5.9	9.20	32.778	. .	31.289
	41	Anon. $5^h\,23^m\,52^s$	9.3	2	VII, IX.	319	14	57.7	69.8	61.7	68.0	65.0	60.7	63.82	24.690	. .	23.215
	42	Anon. $5^h\,32^m\,47^s$	7.4	3	III–VII.	347	55	1.9	15.2	8.2	16.4	8.1	4.9	9.12	36.630	. .	35.142
	43	Anon. $5^h\,43^m\,29^s$	9.5	2	III, VII.	247	15	0.2	11.6	7.4	18.7	9.8	8.4	9.35	27.728	. .	26.192
	44	Anon. $5^h\,43^m\,26^s$	9.2	1	V.	“	“	“	“	“	“	“	“	“	36.141	. .	34.648
	45	Anon. $6^h\,2^m\,43^s$	. .	3	IV–VI.	287	40	1.9	13.2	4.8	14.9	9.9	7.6	8.72	24.487	. .	22.992
	46	O. Arg. S. 4961	8.0	3	III–VII.	347	50	3.4	17.1	10.2	18.8	10.3	8.4	11.37	33.287	. .	31.799
	47	Anon. $6^h\,37^m\,25^s$	7.0	3	III–VII.	350	25	2.1	16.7	8.8	18.1	10.1	6.2	10.33	34.502	. .	33.015
	48	O. Arg. S. 5732	6.7	3	III–VII.	348	25	1.9	17.2	9.6	18.5	9.7	7.0	10.63	27.388	. .	25.900
	49	Anon. $6^h\,49^m\,16^s$	8.0	3	III–VII.	357	40	0.0	15.2	5.9	16.6	8.1	5.0	8.47	34.435	. .	32.950
	50	Lacaille 2524.	6.5	2	VII, IX.	“	“	“	“	“	“	“	“	“	24.548	. .	23.097
	51	Lacaille 2623.	8.0	3	III–VII.	345	5	1.8	16.1	6.8	16.7	8.8	5.5	9.28	39.150	. .	37.662
	52	Anon. $7^h\,13^m\,44^s$	8.5	3	III–VII.	349	50	4.2	19.4	10.6	21.2	12.1	8.1	12.60	30.831	. .	29.343
	53	Weisse VII, 625.	8.3	3	III–VII.	330	5	0.1	13.9	4.8	15.1	7.2	4.3	7.57	28.839	. .	27.348
	54	Lacaille 2864.	7.2	3	III–VII.	344	40	1.9	14.2	6.5	15.6	8.8	5.5	8.75	24.344	. .	22.856
	55	o Puppis	5.0	3	III–VII.	344	30	0.6	14.4	6.2	16.2	7.8	5.1	8.38	34.178	. .	32.690
	56	Anon. $7^h\,52^m\,12^s$	8.3	3	III–VII.	351	35	0.6	15.5	6.7	17.0	8.2	4.5	8.75	25.306	. .	23.819
	57	O. Arg. N. 8698.	8.8	3	III–VII.	255	50	1.5	15.9	10.2	24.2	11.2	12.2	12.53	34.300	. .	32.788
	58	Anon. $8^h\,14^m\,57^s$	9.5	3	III, V, VIII.	349	25	1.9	16.5	9.2	19.9	9.2	4.9	10.27	32.614	. .	31.127
	59	Anon. $8^h\,22^m\,33^s$	8.5	3	III–VII.	353	25	0.0	14.9	6.1	17.2	7.7	3.5	8.23	29.004	. .	27.517
	60	Anon. $8^h\,28^m\,55^s$	9.0	3	V, VII, IX.	291	19	59.4	71.0	64.2	74.0	66.3	64.1	66.50	35.666	. .	34.174
	61	Anon. $8^h\,41^m\,24^s$	8.0	3	III–VII.	351	35	0.0	16.3	7.1	18.1	8.8	3.4	8.95	27.677	. .	26.190
	62	Anon. $8^h\,47^m\,31^s$	7.0	2	I, IX.	350	55	0.3	14.8	7.1	16.9	8.3	3.0	8.40	30.581	. .	29.118
	63	Anon. $8^h\,47^m\,30^s$	9.0	3	IV–VI.	“	“	“	“	“	“	“	“	“	22.763	. .	21.272
	64	Anon. $8^h\,55^m\,58^s$	8.5	3	III–VII.	349	0	1.5	17.5	9.8	20.2	10.4	5.9	10.88	25.983	. .	24.495
	65	Nadir	. .	.	. .	100	0	0.1	17.0	5.2	19.4	10.2	7.7	9.93	31.691	−1.493	. .

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 0.2	S. 72 20 9.4	3 5.5	— 33 29 35.6	+ 11.8	Y.	
2	. .	. .	. .	— 3 59.2	N. 1 48 51.7	1.9	+ 40 42 32.9	+ 2.3	Y.	
3	. .	. .	. .	+ 1 2.4	N. 1 43 50.2	1.8	+ 40 37 31.2	+ 2.3	Y.	
4	. .	. .	37.4	— 0 33.6	S. 65 59 34.2	2 13.4	— 27 8 8.4	+ 10.3	Y.	
5	. .	. .	. .	+ 1 5.7	66 11 14.8	2 14.7	— 27 19 50.2	+ 9.9	Y.	
6	29.930	40.1	34.0	— 0 15.6	27 34 50.4	31.4	+ 11 18 17.4	+ 7.8	Y.	
7	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
8	29.950	38.5	32.1	— 0 45.9	64 14 23.4	2 4.5	— 25 22 48.6	+ 18.0	Y.	
9	. .	. .	. .	— 0 27.8	69 4 41.6	2 36.8	— 30 13 39.2	+ 18.5	Y.	
10	29.956	38.0	31.6	+ 2 4.1	40 12 14.4	51.0	— 1 19 26.2	+ 11.3	Y.	
11	. .	. .	31.0	— 2 3.2	67 48 8.4	2 27.2	— 28 56 56.3	+ 17.3	Y.	
12	. .	. .	. .	— 2 53.5	74 12 14.8	3 31.0	— 35 22 6.7	+ 18.2	Y.	
13	29.950	37.5	30.6	— 3 18.7	63 46 50.3	2 2.4	— 25 55 13.4	+ 16.3	Y.	
14	. .	. .	. .	+ 1 7.6	25 51 17.1	29.4	+ 13 1 52.8	+ 6.9	Y.	
15	29.966	37.1	30.7	— 1 35.0	25 48 34.5	29.3	+ 13 4 35.5	+ 6.9	Y.	
16	. .	. .	. .	+ 0 14.8	66 15 25.0	2 17.0	— 27 24 2.7	+ 14.4	Y.	
17	. .	. .	. .	+ 2 38.2	68 22 50.9	2 31.9	— 29 31 43.5	+ 14.4	Y.	
18	29.978	36.7	30.1	+ 1 56.8	53 27 6.0	1 21.7	— 14 34 48.4	+ 12.0	Y.	
19	. .	. .	. .	+ 0 7.8	13 40 16.8	14.8	— 25 13 7.6	+ 13.0	Y.	
20	. .	. .	. .	— 0 24.8	13 39 44.4	14.8	+ 25 13 40.2	+ 4.3	Y.	
21	. .	. .	. .	— 1 38.8	53 33 32.7	1 22.0	— 14 41 15.5	+ 11.4	Y.	
22	. .	. .	. .	+ 0 21.6	53 35 33.1	1 22.1	— 14 43 16.0	+ 11.4	Y.	
23	. .	. .	. .	+ 0 42.6	53 35 54.1	1 22.2	— 14 43 37.0	+ 11.2	Y.	
24	. .	. .	. .	+ 3 25.6	53 38 37.1	1 22.3	— 14 46 20.2	+ 11.3	Y.	
25	. .	. .	. .	— 2 17.9	62 47 53.1	1 57.6	— 23 56 11.4	+ 11.8	Y.	
26	29.984	36.2	30.0	+ 0 6.8	62 50 17.8	1 57.9	— 23 58 36.4	+ 11.7	Y.	
27	. .	. .	. .	— 1 29.7	62 18 41.2	1 55.3	— 23 26 57.2	+ 11.3	Y.	
28	. .	. .	. .	— 2 21.8	62 17 49.1	1 55.2	— 23 26 5.1	+ 11.3	Y.	
29	29.982	36.1	29.3	+ 1 12.7	80 51 22.9	5 3.1	— 42 2 46.7	+ 11.6	Y.	
30	. .	. .	. .	— 1 47.8	68 38 24.5	2 34.5	— 29 47 19.7	+ 10.1	Y.	
31	29.982	35.7	28.5	— 1 2.5	69 14 10.0	2 39.4	— 30 23 10.1	+ 9.6	Y.	
32	. .	. .	. .	— 1 36.9	70 38 34.1	2 51.8	— 31 47 46.7	+ 9.0	Y.	
33	. .	. .	. .	+ 1 57.3	11 12 7.7	12.1	+ 27 41 19.5	+ 5.1	Y.	
34	. .	. .	28.0	— 1 18.3	66 8 54.1	2 17.1	— 27 17 31.9	+ 8.1	Y.	Corr. —1′.42 applied to mean of A, B, C, D.
35	. .	. .	. .	— 0 35.4	76 39 35.0	4 12.3	— 37 50 8.0	+ 7.7	Y.	
36	. .	. .	. .	+ 2 2.4	63 47 13.0	2 3.3	— 24 55 37.0	+ 7.3	Y.	
37	29.980	34.9	27.6	— 3 24.3	70 21 48.4	2 49.5	— 31 30 58.7	+ 6.7	Y.	
38	30.326	45.0	39.3	+ 1 17.4	24 51 25.0	27.9	+ 14 1 46.4	+ 6.8	Y.	
39	30.334	44.9	39.1	— 3 52.6	73 56 15.2	3 26.5	— 35 6 2.4	+ 20.7	Y.	
40	. .	. .	. .	— 0 40.4	64 14 28.8	2 4.4	— 25 22 53.9	+ 18.4	Y.	
41	. .	. .	38.1	+ 3 32.2	39 18 36.0	49.4	— 0 25 46.1	+ 11.3	Y.	
42	. .	. .	. .	— 2 41.2	67 52 27.9	2 27.5	— 29 1 16.2	+ 18.4	Y.	
43	. .	. .	. .	+ 1 59.2	N. 32 42 51.5	38.8	+ 71 37 9.5	— 9.6	Y.	Very faint.
44	30.360	44.0	38.2	— 2 25.7	N. 32 47 16.4	38.9	+ 71 41 34.5	— 9.6	Y.	
45	. .	. .	. .	+ 3 39.1	S. 7 43 47.8	8.2	+ 31 9 43.2	+ 1.5	Y.	
46	30.362	43.3	37.0	— 0 56.4	67 49 15.0	2 27.6	— 28 58 3.3	+ 17.1	Y.	
47	. .	. .	. .	— 1 37.6	70 23 32.7	2 49.2	— 31 32 42.6	+ 16.5	Y.	
48	30.370	42.2	35.1	+ 2 8.3	68 27 18.9	2 33.0	— 29 36 12.6	+ 15.9	Y.	
49	. .	. .	. .	— 1 32.4	77 38 36.0	4 31.6	— 38 49 28.3	+ 16.8	Y.	
50	. .	. .	. .	+ 3 35.8	77 43 44.3	4 33.5	— 38 54 38.5	+ 16.8	Y.	
51	. .	. .	. .	— 4 0.5	65 1 8.8	2 10.1	— 26 9 39.6	+ 14.6	Y.	
52	30.374	41.3	33.9	+ 0 20.6	69 50 33.2	2 44.8	— 30 59 38.7	+ 14.6	Y.	
53	. .	. .	. .	+ 1 23.0	50 6 30.6	1 12.9	— 11 14 4.2	+ 11.5	Y.	
54	. .	. .	. .	+ 3 43.4	64 43 52.1	2 8.8	— 25 52 21.6	+ 13.2	Y.	
55	30.382	40.2	33.0	— 1 24.3	64 28 44.1	2 7.4	— 25 37 12.2	+ 12.6	Y.	
56	. .	. .	. .	+ 3 13.3	71 28 22.0	3 2.4	— 32 47 45.2	+ 12.6	Y.	
57	30.382	40.0	32.0	— 1 27.4	N. 24 11 14.8	27.5	+ 63 5 21.6	— 2.4	Y.	
58	. .	. .	. .	— 0 35.3	S. 69 24 35.0	2 41.7	— 30 33 37.4	+ 11.2	Y.	Very faint.
59	. .	. .	. .	+ 1 17.7	73 26 26.0	3 23.4	— 34 36 10.1	+ 10.8	Y.	
60	30.382	40.0	32.2	— 2 0.8	11 18 5.7	12.2	+ 27 35 21.4	+ 4.5	Y.	
61	. .	. .	. .	+ 1 59.2	71 37 8.2	3 2.4	— 32 46 31.4	+ 9.6	Y.	
62	. .	. .	. .	+ 0 27.6	70 55 36.0	2 55.5	— 32 4 52.2	+ 9.2	Y.	
63	. .	. .	. .	+ 4 32.8	70 59 41.2	2 56.2	— 32 8 58.1	+ 9.2	Y.	
64	30.378	39.8	31.8	+ 2 52.2	69 3 3.1	2 38.8	— 30 12 2.6	+ 8.7	Y.	
65	. .	. .	. .	. . .	. . . .	. .	. . . . .	. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Feb. 19	1	Anon. $4^h\ 45^m\ 42^s$.	9.2	3	III–VII.	296 19 58.3	71.9	63.0	74.5	67.6	63.9	66.53	31.471	−1.493	29.974
	2	Weisse (2) IV, 1012.	8.5	2	VII, IX.	“ “ “	“	“	“	“	“	“	31.364	. .	29.875
	3	O. Arg. S. 3576 . .	7.7	2	VII, IX.	348 40 2.9	18.8	10.6	21.5	10.2	7.0	11.83	36.090	. .	34.632
	4	Anon. $5^h\ 1^m\ 27^s$.	9.0	2	VII, IX.	347 35 0.0	12.9	6.3	17.0	5.5	2.7	7.40	30.318	. .	28.842
	5	Anon. $5^h\ 23^m\ 51^s$.	9.0	3	III–VII.	319 20 2.6	16.5	9.1	16.8	10.5	7.5	10.50	34.503	. .	33.010
	6	Anon. $5^h\ 27^m\ 53^s$.	8.0	3	III–VII.	336 45 2.2	15.2	8.3	16.9	8.4	4.6	9.27	31.729	. .	30.239
	7	Lacaille 1918. . .	6.7	3	III–VII.	346 10 1.8	15.6	9.8	17.9	9.3	5.3	9.95	33.709	. .	32.221
	8	Weisse (2) V, 1621 .	9.0	2	III, VI.	296 50 2.8	6.4	8.9	oblit.	11.3	8.4	8.79	32.640	. .	31.141
	9	μ Orionis	5.0	3	III–VII.	309 15 3.0	18.0	9.2	17.9	12.3	9.2	11.60	32.710	. .	31.215
	10	Weisse (2) VI, 1163.	8.0	3	III–VII.	294 55 3.1	16.2	8.2	18.8	12.0	8.4	11.12	30.842	. .	29.345
	11	Lacaille 2473. . .	7.0	3	III–VII.	344 30 2.1	16.1	8.6	18.4	9.1	5.0	9.88	32.658	. .	31.170
	12	Lacaille 2544. . .	8.3	3	III–VII.	342 35 3.3	18.1	10.6	21.2	10.6	6.0	11.63	33.087	. .	31.598
	13	26 Canis Majoris . .	. .	3	III–VII.	344 35 1.9	15.8	8.2	18.9	8.8	5.0	9.77	31.034	. .	29.546
	14	Lacaille 2753. . .	. .	3	III–VII.	351 5 1.9	18.0	10.4	21.8	10.2	4.9	11.20	31.694	. .	30.207
	15	6 Canis Minoris . .	. .	3	III–VII.	306 35 2.6	16.8	8.3	20.0	10.7	8.4	11.13	28.254	. .	26.759
	16	O. Arg. S. 7101 . .	7.2	3	III–VII.	346 5 1.5	15.4	9.4	18.1	8.8	4.8	9.67	32.447	. .	30.959
	17	ξ Navis	. .	3	III–VII.	343 25 1.2	16.1	8.3	18.2	8.0	4.3	9.35	33.684	. .	32.195
	18	Nadir	. .	.	. .	99 59 58.7	76.8	64.8	79.8	68.4	65.2	68.95	31.657	. .	. .
25	19	Anon. $4^h\ 56^m\ 42^s$.	9.0	3	III–VII.	273 35 1.5	14.8	6.7	15.2	12.7	9.7	10.10	29.539	−1.501	28.028
	20	Anon. $5^h\ 4^m\ 54^s$.	9.0	3	III–VII.	344 30 3.0	15.9	8.1	16.2	12.2	7.1	10.42	31.283	. .	29.787
	21	Anon. $5^h\ 27^m\ 53^s$.	8.3	3	III–VII.	336 45 1.7	14.6	6.8	13.9	10.3	5.1	8.73	31.670	. .	30.172
	22	Lalande 10621 . .	8.0	2	I, V.	280 45 1.7	17.3	7.9	16.5	14.2	9.8	11.23	28.702	. .	27.170
	23	Lalande 10650 . .	8.0	2	I, V.	“ “ “	“	“	“	“	“	“	30.126	. .	28.594
	24	Lalande 10666 . .	7.5	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	30.219	. .	28.714
	25	Anon. $5^h\ 49^m\ 33^s$.	. .	3	IV–VI.	296 50 1.4	14.3	4.4	14.2	11.8	7.8	8.98	20.010	. .	18.508
	26	Weisse (2) V, 1621 .	. .	1	IX.	“ “ “	“	“	“	“	“	“	32.832	. .	31.334
	27	Lacaille 2092. . .	7.0	3	III–VII.	352 40 2.2	16.5	7.2	16.9	10.9	5.9	9.93	30.530	. .	29.035
	28	Weisse (2) VI, 12 .	8.0	3	III–VII.	287 40 1.6	12.0	4.0	13.9	10.5	6.9	8.15	28.464	. .	26.957
	29	O. Arg. N. 7299 . .	8.0	3	III–VII.	267 5 0.2	13.3	7.2	17.3	13.2	10.2	10.23	30.037	. .	28.524
	30	Anon. $6^h\ 46^m\ 29^s$.	9.0	3	IV–VI.	344 25 1.2	15.9	7.3	16.7	12.2	6.5	9.97	26.188	. .	24.688
	31	Anon. $6^h\ 56^m\ 12^s$.	9.0	2	III, IX.	349 20 0.9	15.3	8.1	17.2	10.3	4.4	9.37	35.782	. .	34.305
	32	Anon. $6^h\ 56^m\ 14^s$.	8.3	1	V.	“ “ “	“	“	“	“	“	“	37.289	. .	35.788
	33	Lacaille 2659. . .	6.5	3	III–VII.	346 10 3.9	18.8	11.2	18.8	13.5	8.8	12.50	37.404	. .	35.908
	34	Anon. $7^h\ 13^m\ 42^s$.	8.0	3	III–VII.	349 50 3.9	19.5	11.1	19.9	14.1	8.9	12.90	30.735	. .	29.239
	35	Weisse VII, 625. .	8.2	3	III–VII.	330 5 0.1	13.9	5.1	13.8	8.1	4.2	7.53	28.796	. .	27.297
	36	O. Arg. S. 7101 . .	7.0	3	III–VII.	346 5 1.6	14.1	7.2	15.1	10.0	5.0	8.83	32.429	. .	30.933
	37	Anon. $7^h\ 40^m\ 54^s$.	8.7	3	III–VII.	346 10 4.1	17.8	10.0	17.9	12.4	7.8	11.67	35.657	. .	34.161
	38	O. Arg. S. 7445 . .	8.3	3	III–VII.	“ “ “	“	“	“	“	“	“	32.403	. .	30.907
	39	Anon. $7^h\ 52^m\ 9^s$ . .	7.3	3	III–VII.	351 40 1.9	18.5	9.1	19.5	12.5	oblit.	11.47	34.800	. .	33.304
	40	O. Arg. S. 8343 . .	9.0	3	III–VII.	343 45 0.9	16.8	6.5	16.7	10.6	5.3	9.47	28.400	. .	26.903
	41	Weisse VIII, 389 .	9.0	3	III–VII.	306 50 2.2	15.6	7.5	15.8	12.2	9.7	10.50	29.494	. .	27.991
	42	Weisse VIII, 601 .	8.3	3	III–VII.	305 40 0.0	12.0	2.8	12.3	8.8	4.7	8.43	27.798	. .	26.295
	43	Weisse VIII, 618 .	7.5	2	VII, IX.	“ “ “	“	“	“	“	“	“	33.744	. .	32.253
	44	Lacaille 3449. . .	7.0	3	III–VII.	347 30 0.1	16.1	6.9	16.1	9.2	5.0	8.90	33.891	. .	32.395
	45	Anon. $8^h\ 44^m\ 11^s$.	7.0	3	III–VII.	346 40 0.1	15.2	5.9	14.9	8.5	4.2	8.13	35.591	. .	34.095
	46	Anon. $8^h\ 49^m\ 12^s$.	8.5	3	III–VII.	353 44 58.7	74.4	64.7	75.5	67.9	62.8	67.33	30.608	. .	29.114
	47	Anon. $8^h\ 55^m\ 57^s$.	8.2	2	VII, IX.	349 0 1.6	17.9	9.2	19.1	12.1	5.2	10.85	25.699	. .	24.233
	48	Anon. $8^h\ 56^m\ 0^s$.	9.3	1	V.	“ “ “	“	“	“	“	“	“	24.833	. .	23.332
	49	B. A. C. 3156 . .	5.0	3	III–VII.	361 30 3.4	19.0	11.2	22.2	13.8	8.0	12.93	34.063	. .	32.571
	50	Anon. $9^h\ 17^m\ 7^s$.	7.0	2	I–IX.	357 40 0.1	16.3	6.8	19.1	10.4	oblit.	9.44	33.805	. .	32.344
	51	Anon. $9^h\ 17^m\ 23^s$.	7.5	3	III–VII.	“ “ “	“	“	“	“	“	“	41.178	. .	39.685
	52	Anon. $9^h\ 19^m\ 13^s$.	6.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	29.222	. .	27.763
	53	Lacaille 3918. . .	6.5	2	III, VII.	354 5 3.8	20.4	10.8	20.9	14.0	8.1	13.00	31.883	. .	30.392
	54	Anon. $9^h\ 29^m\ 22^s$.	5.0	2	I, IX.	“ “ “	“	“	“	“	“	“	32.772	. .	31.305
	55	Anon. $9^h\ 40^m\ 4^s$.	7.5	2	I, IX.	356 0 0.0	17.2	7.3	18.5	9.0	4.3	9.38	35.480	. .	34.016
	56	Anon. $9^h\ 40^m\ 13^s$.	7.2	3	III–VII.	“ “ “	“	“	“	“	“	“	26.674	. .	25.180
	57	Anon. $9^h\ 47^m\ 55^s$.	7.0	3	III–YII.	356 40 2.0	18.8	9.2	20.5	11.6	5.5	11.27	36.582	. .	35.088
	58	Lacaille 4120. . .	6.0	3	III–VII.	351 25 3.2	19.7	11.2	20.2	12.8	7.1	12.37	27.213	. .	25.718
	59	Lacaille 4186. . .	6.0	3	III–YII.	359 0 3.6	20.2	12.0	22.8	13.1	7.1	13.13	26.555	. .	25.062
	60	Nadir	. .	.	. .	99 59 59.4	76.6	64.7	79.0	70.3	68.1	69.68	31.690	−1.501	. .
26	61	Anon. $6^h\ 43^m\ 14^s$.	7.0	3	IV–VI.	267 15 2.5	16.8	8.8	19.8	15.2	13.5	12.77	34.668	−1.512	33.152
	62	O. Arg. S. 5961 . .	6.5	3	III–VII.	346 15 0.7	13.2	6.1	13.9	9.4	5.7	9.83	34.414	. .	32.907
	63	22 Monocerotis . .	5.0	3	III–VII.	319 10 2.3	13.2	5.2	12.9	10.2	7.1	8.48	32.176	. .	30.664
	64	53 Geminorum . .	6.0	3	V, VII, IX.	290 45 1.9	14.4	6.2	14.4	12.1	10.2	9.87	29.378	. .	27.867
	65	Lacaille 2753. . .	. .	3	III–VII.	351 5 1.2	13.3	6.1	14.0	9.8	4.3	8.12	31.553	. .	30.047

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 0.8	S. 16 20 7.3	17.6	+ 22 33 14.3	+ 3.9	Y.	
2	29.962	41.0	35.2	+ 0 3.9	16 20 10.4	17.6	+ 22 33 11.2	+ 3.9	Y.	
3	. .	. .	. .	− 2 25.2	68 37 46.6	2 32.3	− 29 46 39.7	+ 19.8	Y.	
4	29.964	40.7	34.8	+ 0 36.2	67 35 43.6	2 24.7	− 28 44 29.1	+ 19.6	Y.	
5	. .	. .	. .	− 1 34.3	39 18 36.2	49.2	− 0 25 46.1	+ 11.4	Y.	
6	. .	. .	. .	− 0 7.5	56 45 1.8	1 31.5	− 17 52 54.0	+ 16.3	Y.	
7	29.966	40.2	34.1	− 1 9.6	66 9 0.4	2 15.3	− 27 17 36.4	+ 18.4	Y.	
8	. .	. .	. .	− 0 35.8	16 49 33.0	18.2	+ 22 3 48.0	+ 4.2	Y.	Corr. + 1″.57 applied to mean of A, B, E, F.
9	29.966	40.0	33.7	− 0 38.1	29 14 33.5	33.7	+ 9 38 32.0	+ 8.0	Y.	
10	. .	. .	33.3	+ 0 20.5	14 55 31.6	16.1	+ 23 57 51.6	+ 3.8	Y.	
11	. .	. .	. .	− 0 36.7	64 29 33.2	2 5.7	− 25 37 59.7	+ 15.6	Y.	
12	29.968	39.0	33.1	− 0 50.1	62 34 21.6	1 55.7	− 23 42 38.0	+ 15.0	Y.	
13	. .	. .	. .	+ 0 14.2	64 35 24.0	2 6.3	− 25 43 51.0	+ 13.8	Y.	
14	. .	. .	33.2	− 0 6.5	71 5 4.7	2 54.2	− 32 14 19.7	+ 15.2	Y.	
15	. .	. .	. .	+ 1 41.4	26 36 52.5	30.2	+ 12 16 16.5	+ 6.8	Y.	
16	29.972	38.3	33.3	− 0 30.0	66 4 39.6	2 15.1	− 27 13 15.5	+ 13.9	Y.	
17	. .	. .	. .	− 1 8.8	63 24 0.6	1 59.8	− 24 32 21.2	+ 12.9	Y.	Cloudy.
18	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
19	29.764	39.1	34.5	+ 1 1.7	N. 6 23 48.2	6.7	+ 45 17 34.1	− 3.8	Y.	
20	. .	. .	. .	+ 0 6.7	S. 64 30 17.1	2 4.6	− 25 38 42.4	+ 19.1	Y.	
21	. .	. .	33.4	− 0 5.4	56 45 3.3	1 30.9	− 17 52 54.9	+ 16.8	Y.	
22	. .	. .	. .	+ 1 28.6	0 46 39.8	0.8	+ 38 6 58.6	+ 1.2	Y.	
23	. .	. .	. .	+ 0 44.0	0 45 55.3	0.8	+ 38 7 43.2	+ 1.2	Y.	
24	29.756	38.6	34.4	+ 0 40.3	0 45 51.5	0.8	+ 38 7 46.9	+ 1.2	Y.	
25	. .	. .	. .	+ 5 58.9	16 56 7.9	18.2	+ 21 57 13.1	+ 4.2	Y.	
26	. .	. .	. .	− 0 41.8	16 49 27.2	18.1	+ 22 3 54.0	+ 4.2	Y.	
27	. .	. .	34.0	+ 0 30.2	N. 27 19 19.8	30.9	+ 66 13 30.0	− 9.2	Y.	
28	. .	. .	. .	+ 1 35.2	S. 7 41 43.4	8.1	+ 31 11 47.8	+ 1.2	Y.	
29	. .	. .	. .	+ 0 46.2	N. 12 54 3.6	13.7	+ 51 47 56.5	− 4.4	Y.	
30	29.746	37.5	31.5	+ 2 46.2	S. 64 27 56.1	2 4.8	− 25 36 21.7	+ 16.5	Y.	
31	. .	. .	. .	− 2 15.0	69 17 54.4	2 37.3	− 30 26 52.5	+ 17.0	Y.	
32	. .	. .	. .	− 3 1.5	69 17 7.8	2 37.2	− 30 26 5.8	+ 17.0	Y.	
33	. .	. .	30.7	− 3 5.3	66 7 7.2	2 15.0	− 27 15 43.0	+ 16.0	Y.	
34	. .	. .	. .	+ 0 23.8	69 50 36.7	2 42.5	− 30 59 40.0	+ 16.3	Y.	
35	29.740	37.0	30.4	+ 1 24.6	50 6 32.1	1 11.9	− 11 14 4.7	+ 12.6	Y.	
36	. .	. .	. .	− 0.29.2	66 4 39.6	2 14.8	− 27 13 15.2	+ 15.0	Y.	
37	. .	. .	. .	− 2 10.4	66 8 1.2	2 15.2	− 27 16 37.2	+ 14.5	Y.	
38	. .	. .	. .	− 0 28.4	66 9 43.3	2 15.4	− 27 18 19.4	+ 14.5	Y.	
39	29.736	36.2	30.5	− 1 43.6	71 38 27.9	2 59.4	− 32 47 48.1	+ 14.6	Y.	Corr. −0″.78 applied to mean of A, B, C, D.
40	. .	. .	. .	+ 1 36.9	63 46 46.4	2 1.7	− 24 55 8.8	+ 12.8	Y.	
41	. .	. .	. .	+ 1 2.9	26 51 13.4	30.5	+ 12 1 55.4	+ 6.9	Y.	
42	. .	. .	. .	+ 1 55.9	25 42 4.4	29.0	+ 13 11 5.9	+ 6.6	Y.	
43	29.730	36.0	29.4	− 1 10.6	25 38 57.8	28.9	+ 13 14 12.5	+ 6.6	Y.	
44	. .	. .	. .	− 1 15.1	67 28 53.8	2 24.4	− 28 37 39.0	+ 12.0	Y.	
45	. .	. .	. .	− 2 8.3	66 37 59.8	2 18.7	− 27 46 39.2	+ 11.4	Y.	
46	. .	. .	29.1	+ 0 27.8	73 45 35.1	3 24.4	− 34 55 20.2	+ 11.4	Y.	
47	. .	. .	. .	+ 3 0.4	69 3 11.2	2 36.3	− 30 12 8.3	+ 10.9	Y.	
48	. .	. .	. .	+ 3 28.5	69 3 39.4	2 36.4	− 30 12 36.5	+ 10.9	Y.	
49	29.712	35.3	29.1	− 1 20.5	81 28 52.4	6 24.6	− 42 41 37.8	+ 10.1	Y.	
50	. .	. .	. .	− 1 13.5	77 38 56.0	4 29.2	− 38 49 45.9	+ 9.6	Y.	Corr. −1″.14 applied to mean of A, B, C, D.
51	. .	. .	. .	− 5 3.4	77 35 5.5	4 27.8	− 38 45 54.0	+ 9.6	Y.	
52	. .	. .	. .	+ 1 10.0	77 41 19.5	4 30.1	− 38 52 10.3	+ 9.5	Y.	
53	. .	. .	. .	− 0 12.3	74 5 0.7	3 28.4	− 35 14 49.9	+ 8.8	Y.	
54	. .	. .	. .	− 0 40.9	74 4 32.1	3 28.6	− 35 14 21.4	+ 8.8	Y.	
55	. .	. .	. .	− 2 5.9	75 58 3.5	3 57.2	− 37 8 21.5	+ 8.0	Y.	
56	29.710	35.1	28.6	+ 2 30.8	76 2 40.2	3 57.9	− 37 12 58.8	+ 8.0	Y.	
57	. .	. .	. .	− 2 39.5	76 37 31.8	4 9.0	− 37 48 1.5	+ 7.5	Y.	
58	. .	. .	. .	+ 2 14.0	71 27 26.3	2 58.3	− 32 36 45.4	+ 7.0	Y.	
59	29.704	35.0	27.9	+ 2 34.5	S. 79 2 47.6	5 3.4	− 40 14 11.8	+ 6.0	Y.	
60	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
61	29.706	40.7	37.4	− 1 38.8	N. 12 46 26.0	13.4	+ 51 40 18.7	− 4.5	Y.	
62	. .	. .	. .	− 1 31.1	S. 66 13 38.7	2 13.8	− 27 22 13.3	+ 16.7	Y.	
63	. .	. .	36.7	− 0 20.8	39 9 47.7	48.3	− 0 16 56.7	+ 10.4	Y.	
64	29.700	40.2	36.5	+ 1 6.8	10 46 16.6	11.3	+ 28 7 11.3	+ 2.6	Y.	
65	. .	. .	. .	− 0 1.5	71 5 6.6	2 51.6	− 32 14 19.0	+ 16.5	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Feb. 26	1	6 Canis Minoris . .	5.5	3	III–VII.	306 35 0.8	11.8	3.1	11.1	9.5	8.1	7.40	28.151	—1.512	26.637
	2	Lacaille 2864. . .	. .	3	III–VII.	344 45 1.2	12.4	5.5	12.1	8.6	5.1	7.48	33.854	. .	32.347
	3	B. A. C. 2590 . .	6.0	3	IV–VI.	239 5 1.6	13.3	8.3	17.0	13.8	11.9	10.98	32.548	. .	30.983
	4	O. Arg. S. 7758 . .	. .	3	III–VII.	346 5 2.6	14.4	7.9	14.3	10.8	6.4	9.40	31.328	. .	29.821
	5	Lacaille 3229. . .	. .	3	III–VII.	348 40 0.0	14.8	6.9	14.9	9.1	5.0	8.45	34.514	. .	33.007
	6	d^2 Cancri	6.0	3	III–VII.	301 25 1.2	14.2	5.7	12.9	10.9	7.1	8.67	31.801	. .	30.286
	7	Lacaille 3388 . .	. .	3	III–VII.	343 30 1.8	15.3	6.3	14.2	10.2	7.1	9.15	29.479	. .	27.971
	8	Lacaille 3511. . .	. .	3	IV–VI.	345 0 1.4	14.8	7.1	14.1	10.2	6.7	9.05	31.570	. .	30.059
	9	60 Cancri	5.5	3	III–VII.	306 45 2.4	15.6	7.2	15.5	12.5	9.8	10.50	29.939	. .	28.425
	10	Anon. $8^h 55^m 32^s$.	. .	3	III–VII.	345 49 58.2	71.4	64.0	71.1	67.1	61.8	65.60	27.668	. .	26.161
	11	Anon. $9^h 2^m 13^s$.	. .	3	III–VII.	346 30 0.0	12.7	6.9	12.7	7.9	2.8	7.17	27.764	. .	26.257
	12	27 Hydræ	5.5	3	III–VII.	327 50 1.5	16.4	7.2	15.4	11.6	6.2	9.72	25.979	. .	24.469
Mar. 1	13	B. A. C. 2251 . .	7.0	2	III, VII.	350 25 2.2	16.8	9.4	19.1	21.4	7.0	10.82	32.632	—1.507	31.134
	14	Anon. $6^h 45^m 31^s$.	8.5	1	V.	" " "	"	"	"	"	"	"	33.318	. .	31.811
	15	Nadir	. .	.	. .	100 0 1.0	16.6	5.7	17.7	11.3	8.9	10.20	31.714	. .	. .
	16	51 Camelopardi. . .	5.5	5	III–VII.	253 10 3.0	16.2	12.1	21.8	13.0	13.6	9.95	35.173	. .	33.649
	17	Anon. $7^h 44^m 13^s$.	6.5	3	III–VII.	318 25 0.0	13.0	6.3	11.5	9.2	5.3	7.55	24.833	. .	23.326
	18	Anon. $7^h 44^m 35^s$.	9.0	3	IV–VI.	" " "	"	"	"	"	"	"	30.513	. .	29.006
	19	Anon. $7^h 45^m 34^s$.	9.0	1	IX.	" " "	"	"	"	"	"	"	33.867	. .	32.383
	20	B. A. C. 2811 . .	6.0	3	III–VII.	344 49 59.0	73.1	66.2	72.4	67.9	63.8	67.07	35.996	. .	34.494
	21	Weisse VIII, 721 .	8.5	3	III–VII.	308 30 3.0	15.5	8.1	13.5	11.9	7.6	9.93	28.200	. .	26.691
	22	O. Arg. S. 8856 . .	8.0	3	III–VII.	345 45 1.4	14.8	7.2	14.4	9.4	4.0	8.53	28.565	. .	27.063
	23	B. A. C. 3041 . .	. .	2	III, V.	300 55 1.4	15.4	6.8	14.2	10.7	6.3	9.13	32.434	. .	30.920
3	24	*m* Tauri	5.0	3	III–VII.	300 25 1.2	13.9	5.5	13.3	9.7	6.5	8.35	31.230	—1.496	29.731
	25	Weisse (2) V, 782 .	9.5	3	III–VII.	287 50 0.3	11.5	4.1	12.7	8.8	5.1	7.08	32.338	. .	30.836
	26	Anon. $5^h 32^m 47^s$.	7.0	3	III–VII.	347 55 5.0	18.5	12.2	20.0	13.0	8.8	12.92	36.770	. .	35.279
	27	Weisse (2) V, 1621 .	9.3	2	V, VII.	296 50 0.6	13.2	5.6	oblit.	9.8	6.0	8.07	32.867	. .	31.374
	28	Rumker 1673 . .	9.0	3	III–VII.	292 34 57.6	70.4	61.5	70.2	66.8	62.9	64.90	28.237	. .	26.736
	29	Weisse (2) VI, 12 .	7.5	3	III–VII.	287 40 0.7	12.8	5.0	15.2	10.6	6.1	8.40	28.493	. .	26.991
	30	O. Arg. N. 2759 . .	. .	3	III–VII.	267 5 0.2	14.8	7.9	18.8	12.4	8.2	10.38	30.080	. .	28.572
	31	Anon. $6^h 45^m 52^s$.	8.0	2	VII, VIII.	347 25 4.4	18.7	11.8	20.4	11.8	7.3	12.40	32.220	. .	30.745
	32	Anon. $6^h 46^m 0^s$.	. .	1	IX.	" " "	"	"	"	"	"	"	29.089	. .	27.642
	33	Rumker 2131 . .	9.0	3	III–VII.	300 0 3.1	18.5	8.2	18.8	12.8	10.0	11.90	29.399	. .	27.900
	34	Weisse (2) VII, 347 .	8.8	3	III–VII.	277 20 0.0	12.4	5.3	15.8	9.8	6.7	8.33	30.767	. .	29.262
	35	Anon. $7^h 20^m 12^s$.	9.0	3	III–VII.	308 29 58.7	72.4	63.9	71.0	67.2	63.0	66.03	27.088	. .	25.590
	36	B. A. C. 2521 . .	7.0	3	1–5	238 19 58.8	70.8	66.8	79.1	69.2	67.6	68.72	33.126	. .	31.629
	37	Nadir	. .	.	. .	100 0 0.0	17.3	4.1	19.1	9.2	6.7	9.40	31.674	. .	. .
5	38	Lacaille 2085 . .	7.5	3	III–VII.	353 20 1.3	16.5	8.8	19.7	8.8	5.4	10.08	31.711	—1.494	30.224
	39	Weisse V, 1368 . .	9.0	2	VI, VIII.	332 50 0.3	15.2	6.8	16.4	8.6	4.0	8.55	30.091	. .	28.613
	40	Weisse VI, 55 . .	8.3	3	V, VII, IX.	328 20 1.6	16.2	8.8	17.1	9.1	4.4	9.53	36.707	. .	35.228
	41	Lalande 12053. . .	7.7	3	III–VII.	297 45 1.9	15.1	6.2	oblit.	9.5	5.9	9.64	32.238	. .	30.740
	42	Anon. $6^h 43^m 37^s$.	7.3	3	IV–VI.	347 30 3.5	17.9	9.6	19.1	10.2	6.4	11.12	35.989	. .	34.497
	43	Anon. $6^h 45^m 59^s$.	7.3	3	IV–VI.	346 0 0.7	15.3	8.2	15.8	8.8	3.0	8.63	35.163	. .	33.670
	44	Lacaille 2562 . .	7.0	3	V, VII, IX.	348 20 3.6	19.7	12.1	21.2	12.1	6.1	12.47	26.325	. .	24.855
	45	Rumker 2131 . .	8.8	3	III–VII.	300 0 2.9	17.5	8.9	17.8	11.0	8.5	11.10	29.331	. .	27.834
	46	Anon. $7^h 12^m 34^s$.	8.3	3	III–VII.	277 0 0.8	15.0	7.4	19.5	10.8	8.0	10.25	34.536	. .	33.033
	47	Weisse (2) VII, 613 .	8.0	3	V, VII, IX.	277 10 0.6	14.5	7.0	18.1	10.2	6.1	9.42	32.638	. .	31.137
	48	Anon. $7^h 30^m 30^s$.	8.0	2	I, IX.	348 35 0.6	17.2	9.4	19.0	9.5	4.0	9.95	33.146	. .	31.680
	49	Anon. $7^h 30^m 48^s$.	7.5	3	III–VII.	" " "	"	"	"	"	"	"	26.555	. .	25.066
	50	B. A. C. 2581 . .	5.5	3	III–VII.	352 45 3.0	19.7	10.7	21.0	11.1	5.5	11.83	30.343	. .	28.855
	51	O. Arg. N. 8698 . .	8.5	3	IV–VI.	255 50 0.0	16.4	9.7	23.0	11.3	9.6	11.67	34.376	. .	32.876
	52	Lacaille 3272 . .	6.5	3	III–VII.	355 49 58.1	76.3	66.6	77.2	67.1	60.8	67.68	30.676	. .	29.189
	53	Anon. $8^h 23^m 23^s$.	10.0	3	V, VII, IX.	348 49 58.8	75.6	67.9	78.3	68.4	61.4	68.40	33.053	. .	31.583
	54	Lalande 17053 . .	7.5	2	I, IX.	312 40 3.1	17.5	10.7	19.0	13.1	7.8	11.87	33.307	. .	31.808
	55	Anon. $8^h 32^m 51^s$.	8.3	3	IV–VI.	" " "	"	"	"	"	"	"	34.037	. .	32.542
	56	Anon. $8^h 44^m 29^s$.	8.3	3	III–VII.	351 15 0.5	16.8	9.4	19.8	9.8	3.3	9.93	33.496	. .	32.008
	57	Weisse (2) VIII, 1255	6.5	2	I, IX.	295 40 2.2	16.9	8.7	19.2	14.1	7.5	11.43	33.814	. .	32.299
	58	Weisse (2) VIII, 1258	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	40.581	. .	39.086
	59	Anon. $9^h 1^m 54^s$ . .	8.0	3	IV–VI.	350 15 0.5	17.2	9.1	20.5	9.6	3.7	10.10	32.557	. .	31.065
	60	Weisse IX, 153 . .	9.0	3	III–VII.	313 15 0.8	15.2	7.1	16.1	11.5	4.9	9.27	35.337	. .	33.842
	61	B. A. C. 3235 . .	6.0	3	III–VII.	353 15 2.2	20.7	11.8	21.8	12.2	6.5	12.53	28.016	. .	26.529
	62	Lacaille 3918. . .	6.5	3	V, VII, IX.	354 5 3.5	20.5	11.5	22.3	12.8	6.9	12.92	31.881	. .	30.414
	63	Anon. $9^h 38^m 39^s$.	7.7	3	III–VII.	348 5 1.5	18.5	9.9	21.0	9.3	4.4	10.77	33.745	. .	32.256
	64	Lacaille 4045 . .	7.0	3	III–VII.	358 25 2.3	21.4	12.8	25.1	12.9	5.2	13.28	36.156	. .	34.670
	65	Anon. $9^h 50^m 37^s$.	. .	3	V, VII, IX.	359 0 1.2	17.6	9.1	22.0	9.7	2.6	10.37	29.555	—1.494	28.091

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 45.2	S. 26 36 52.6	29.8	+ 12 16 16.8	+ 7.0	Y.	
2	. .	. .	. .	− 1 13.6	64 43 53.9	2 5.2	− 25 52 19.9	+ 14.9	Y.	
3	29.694	39.5	35.1	− 0 30.8	N. 40 55 19.8	51.5	+ 79 49 50.6	− 8.6	Y.	
4	. .	. .	. .	+ 0 5.6	S. 66 5 15.0	2 13.5	− 27 13 49.2	+ 14.1	Y.	
5	. .	. .	. .	− 1 34.2	68 38 34.2	2 31.3	− 29 47 26.3	+ 13.5	Y.	
6	29.686	38.8	34.0	− 0 9.0	21 24 59.7	23.4	+ 17 28 16.2	+ 5.8	Y.	
7	. .	. .	. .	+ 1 3.5	63 31 12.6	1 59.1	− 24 39 32.5	+ 10.7	Y.	
8	. .	. .	. .	− 0 1.8	65 0 7.2	2 7.2	− 26 8 35.2	+ 11.7	Y.	
9	29.680	38.0	33.7	+ 0 49.3	26 45 59.8	30.1	+ 12 7 9.4	+ 6.7	Y.	
10	. .	. .	. .	+ 2 0.1	65 52 5.7	2 12.4	− 27 0 38.9	+ 10.9	Y.	
11	. .	. .	. .	+ 1 57.1	66 32 4.3	2 16.5	− 27 40 41.6	+ 10.6	Y.	
12	29.666	38.0	33.9	+ 2 53.0	47 53 2.7	1 5.8	− 9 0 29.3	+ 8.9	Y.	
13	. .	. .	. .	− 0 35.5	70 24 35.3	2 46.3	− 31 33 42.4	+ 18.0	Y.	
14	29.786	40.3	34.8	− 0 56.8	70 24 14.1	2 46.3	− 31 33 21.1	+ 18.0	Y.	
15	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
16	29.790	39.7	34.1	− 1 54.4	N. 26 51 44.5	30.3	+ 65 45 54.0	− 7.1	Y.	
17	. .	. .	. .	+ 3 28.7	S. 38 28 36.2	47.5	+ 0 24 15.5	+ 9.7	Y.	
18	. .	. .	. .	+ 0 31.1	38 25 38.7	47.4	+ 0 27 13.1	+ 9.7	Y.	
19	. .	. .	. .	− 1 14.7	38 23 52.9	47.4	+ 0 28 59.0	+ 9.6	Y.	
20	29.790	39.1	33.8	− 2 20.9	64 47 46.2	2 6.7	− 25 56 13.6	+ 13.2	Y.	
21	. .	. .	. .	+ 1 43.5	28 31 53.5	32.5	+ 10 21 13.3	+ 7.2	Y.	
22	. .	. .	. .	+ 1 31.9	65 46 40.4	2 12.3	− 26 55 13.5	+ 12.5	Y.	
23	29.780	38.8	33.5	− 0 28.8	20 54 40.3	22.9	+ 17 58 36.1	+ 5.6	Y.	
24	30.162	40.0	35.0	+ 0 8.4	20 25 16.8	22.5	+ 18 28 0.0	+ 5.4	Y.	
25	. .	. .	. .	− 0 26.2	7 49 40.9	7.3	+ 31 3 51.1	+ 0.8	Y.	
26	30.172	39.5	33.3	− 2 45.5	67 52 27.4	2 28.2	− 29 1 16.4	+ 19.5	Y.	
27	. .	. .	. .	− 0 43.1	16 49 25.0	18.4	+ 22 3 55.9	+ 3.9	Y.	Corr. +0″.67 applied to mean of A, B, E, F.
28	. .	. .	. .	+ 1 42.1	12 36 47.0	13.6	+ 26 16 38.6	+ 2.5	Y.	
29	30.178	38.8	31.6	+ 1 34.2	7 41 42.6	8.2	+ 31 11 48.5	+ 0.8	Y.	
30	. .	. .	. .	+ 0 44.7	N. 12 54 4.9	14.6	+ 51 47 58.7	− 5.2	Y.	
31	. .	. .	. .	− 0 23.3	S. 67 24 49.1	2 25.7	− 28 33 35.5	+ 17.6	Y.	
32	30.174	37.9	30.7	+ 1 13.8	67 26 26.2	2 25.9	− 28 35 12.9	+ 17.6	Y.	
33	. .	. .	. .	+ 1 2.9	20 1 14.8	22.2	+ 18 52 2.2	+ 5.0	Y.	
34	. .	. .	29.7	+ 0 23.1	N. 2 39 28.6	2.8	+ 41 33 10.6	− 1.8	Y.	
35	. .	. .	. .	+ 2 18.0	S. 28 32 24.0	33.2	+ 10 20 42.0	+ 7.4	Y.	
36	30.178	36.6	29.6	− 0 51.0	N. 41 40 42.3	54.4	+ 80 35 16.0	− 10.4	Y.	
37	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	Y.	
38	. .	. .	. .	− 0 7.0	S. 73 20 3.0	3 20.3	− 34 29 44.1	+ 17.7	Y.	
39	30.066	36.3	31.4	+ 0 43.4	52 50 52.0	1 20.0	− 13 58 32.7	+ 14.4	Y.	Followed 20^s by a star of 9th magnitude to southward 3± revolutions.
40	. .	. .	. .	− 2 43.9	48 17 25.6	1 8.1	− 9 24 54.4	+ 14.1	Y.	
41	. .	. .	. .	− 0 23.2	17 44 46.4	19.4	+ 21 8 33.4	+ 4.2	Y.	Corr. +1″.54 applied to mean of A, B, E, F.
42	. .	. .	. .	− 2 21.0	67 27 50.2	2 25.7	− 28 36 36.6	+ 17.9	Y.	
43	30.076	35.8	30.2	− 1 55.1	65 58 13.6	2 15.8	− 27 6 50.1	+ 17.5	Y.	
44	. .	. .	. .	+ 2 40.9	68 22 53.4	2 32.6	− 29 31 46.7	+ 17.7	Y.	
45	. .	. .	. .	+ 1 7.8	20 1 18.9	22.2	+ 18 51 58.1	+ 4.9	Y.	
46	30.078	35.3	29.7	− 1 35.0	N. 3 1 24.5	3.2	+ 41 55 7.2	− 2.1	Y.	
47	. .	. .	. .	− 0 35.6	N. 2 50 26.2	3.0	+ 41 44 8.5	− 1.8	Y.	
48	. .	. .	. .	− 0.52.6	S. 68 34 17.3	2 34.2	− 29 43 12.3	+ 16.4	Y.	
49	. .	. .	. .	+ 2 34.3	68 37 44.3	2 34.6	− 29 46 39.7	+ 16.4	Y.	
50	. .	. .	. .	− 0 35.8	72 45 47.7	3 14.3	− 33 55 22.7	+ 16.5	Y.	
51	30.108	34.8	29.9	− 1 30.1	N. 24 11 18.4	27.4	+ 63 5 25.1	− 6.2	Y.	
52	. .	. .	. .	+ 0 25.4	S. 75 50 33.1	3 57.6	− 37 0 51.4	+ 15.2	Y.	
53	. .	. .	. .	− 0 49.6	68 49 18.8	2 36.2	− 29 58 15.8	+ 14.0	Y.	
54	. .	. .	. .	− 0 56.7	32 39 15.2	39.1	+ 16 13 45.0	+ 7.8	Y.	About 1^s or 2^s apart.
55	30.094	34.7	29.7	− 1 19.7	32 38 52.2	39.0	+ 6 14 8.0	+ 7.8	Y.	
56	. .	. .	. .	− 1 2.9	71 14 7.0	2 57.9	− 32 23 25.6	+ 13.1	Y.	
57	. .	. .	. .	− 1 12.0	15 38 59.4	17.1	+ 23 14 22.8	+ 4.2	Y.	
58	. .	. .	. .	− 4 45.2	15 35 26.3	17.0	+ 23 17 56.0	+ 4.2	Y.	
59	. .	. .	. .	− 0 33.4	70 14 36.7	2 48.6	− 31 23 46.1	+ 12.1	Y.	
60	. .	. .	. .	− 2 0.4	33 13 8.8	40.0	+ 5 39 50.4	+ 7.5	Y.	
61	30.104	34.3	28.6	+ 1 48.6	73 17 1.2	3 21.1	− 34 26 43.0	+ 11.0	Y,	
62	. .	. .	. .	− 0 13.0	74 5 0.0	3 31.2	− 35 14 52.0	+ 10.6	Y.	
63	. .	. .	. .	− 1 10.7	68 4 0.1	2 30.9	− 29 12 51.7	+ 9.9	Y.	
64	30.110	34.0	28.2	− 2 26.4	78 22 46.9	4 50.2	− 39 33 57.8	+ 9.7	Y.	
65	. .	. .	. .	+ 0 59.8	79 1 10.1	5 6.7	− 40 12 37.6	+ 9.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1870. Mar. 5	1	Anon. $10^h\ 2^m\ 28^s$	9.3	3	III–VII.	306	0	0.0	13.9	4.9	15.7	7.5	3.4	7.57	31.238	−1.494	29.742
	2	Anon. $10^h\ 3^m\ 15^s$	9.0	2	VII, IX.	"	"	"	"	"	"	"	"	"	34.646	. .	33.162
	3	Lacaille 4250.	6.5	3	III–VII.	351	20	0.8	16.9	10.7	20.2	10.6	4.0	10.53	33.006	. .	31.518
	4	Lacaille 4295.	6.0	3	III–VII.	357	30	3.6	21.6	12.8	24.8	13.1	5.2	13.52	29.348	. .	27.862
	5	Rumker 3238	9.0	3	III–VII.	302	59	59.5	73.6	65.2	76.3	68.4	63.1	67.68	31.123	. .	29.626
	6	Nadir	. .	.	. .	100	0	1.3	21.1	8.8	24.2	12.2	9.2	12.80	31.783	. .	. .
8	7	Anon. $7^h\ 31^m\ 30^s$	7.7	3	III–VII.	349	55	1.0	15.5	7.7	17.8	9.1	4.0	9.18	35.438	−1.491	33.953
	8	Anon. $7^h\ 31^m\ 50^s$	9.2	2	VII, IX.	"	"	"	"	"	"	"	"	"	33.869	. .	32.412
	9	O. Arg. S. 7443	8.8	3	III–VII.	342	50	1.1	14.8	6.4	16.5	8.6	3.0	8.40	35.051	. .	33.564
	10	O. Arg. S. 7458	9.0	2	VII, IX.	"	"	"	"	"	"	"	"	"	34.941	. .	33.481
	11	Lacaille 3262.	6.0	3	III–VII.	353	0	1.2	16.2	7.9	18.9	9.9	4.8	9.82	28.678	. .	27.193
	12	Lacaille 3293.	6.0	3	III–VII.	346	15	0.9	14.4	8.0	16.0	9.4	2.8	8.58	30.183	. .	28.697
	13	Anon. $8^h\ 26^m\ 57^s$	9.0	3	III–VII.	338	40	1.7	14.4	7.4	15.4	8.3	2.1	8.22	26.520	. .	25.033
	14	Anon. $8^h\ 35^m\ 2^s$	7.7	3	III–VII.	350	35	3.4	17.3	10.8	20.4	11.7	6.0	11.60	34.919	. .	33.433
	15	Anon. $8^h\ 45^m\ 3^s$	8.0	2	I, IX.	0	5	0.3	14.0	7.1	17.9	7.1	1.5	7.98	33.748	. .	32.300
	16	Anon. $8^h\ 44^m\ 55^s$	8.5	3	IV–VI.	"	"	"	"	"	"	"	"	"	32.640	. .	31.152
	17	Anon. $8^h\ 45^m\ 37^s$	. .	1	IX.	"	"	"	"	"	"	"	"	"	36.685	. .	35.260
	18	Lacaille 3643.	6.0	3	III–VII.	344	55	0.6	13.8	7.8	15.1	8.0	3.6	8.15	30.688	. .	29.202
	19	Lacaille 3690.	6.0	3	III–VII.	344	9	58.9	72.2	64.3	73.4	65.9	61.0	65.95	30.423	. .	28.937
	20	Anon. $9^h\ 13^m\ 21^s$	6.0	3	I, III, V.	352	25	0.3	15.1	7.3	17.2	7.3	2.9	8.35	34.359	. .	32.870
	21	B. A. C. 3190	5.5	3	III–VII.	"	"	"	"	"	"	"	"	"	33.741	. .	32.256
	22	B. A. C. 3243	7.0	3	I, III, V.	344	55	1.3	14.9	9.2	17.7	9.3	4.5	9.48	35.275	. .	33.782
	23	B. A. C. 3248	6.0	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	35.637	. .	34.168
	24	Anon. $9^h\ 35^m\ 12^s$	8.5	3	III–VII.	354	10	3.8	19.5	11.8	20.6	13.3	7.5	12.75	30.990	. .	29.506
	25	Lacaille 4031, (1st *)	8.0	2	IV, VI.	353	15	1.7	16.8	9.7	20.0	10.4	5.3	10.65	30.864	. .	29.376
	26	Lacaille 4031, (2d *)	8.5	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	30.803	. .	29.338
	27	Lacaille 4095.	5.5	3	III–VII.	354	5	1.9	17.6	9.9	19.9	11.2	5.1	10.93	29.043	. .	27.559
	28	14 Sextantis	6.0	3	III–VII.	312	35	2.0	14.5	7.9	15.7	9.5	5.0	9.10	25.171	. .	23.679
	29	Lacaille 4267.	6.0	3	III–VII.	342	30	1.9	17.8	9.9	18.7	10.9	5.5	10.78	27.137	. .	25.650
	30	Nadir	. .	.	. .	100	0	0.0	17.2	5.3	19.8	9.8	6.1	9.70	31.681	. .	. .
9	31	Lacaille 3848.	7.0	3	III–VII.	353	10	0.2	15.0	6.9	18.0	8.3	3.2	8.60	30.163	−1.495	28.675
	32	Anon. $9^h\ 32^m\ 31^s$	9.0	3	III–VII.	339	15	3.6	17.8	11.2	19.2	11.6	6.1	11.58	36.292	. .	34.801
	33	Weisse (2) IX, 819	9.0	3	III–VII.	302	45	1.0	14.0	7.9	16.0	9.7	5.0	8.93	34.046	. .	32.548
	34	Weisse (2) IX, 832	8.3	2	VII, IX.	"	"	"	"	"	"	"	"	"	30.463	. .	28.976
	35	Anon. $9^h\ 49^m\ 43^s$	7.0	3	III–VII.	351	35	3.6	19.8	11.8	22.2	12.8	6.8	12.83	30.534	. .	29.045
	36	Anon. $9^h\ 57^m\ 13^s$	8.5	3	III–VII.	348	30	1.7	16.2	9.3	18.1	9.3	3.9	9.75	31.963	. .	30.474
	37	Anon. $10^h\ 4^m\ 14^s$	7.5	3	III–VII.	354	59	58.5	74.3	66.1	75.8	65.8	60.2	66.78	35.737	. .	34.249
	38	Lalande 19981	8.0	3	III–VII.	306	55	0.3	13.2	5.2	13.3	8.5	4.3	7.47	27.416	. .	25.919
	39	B. A. C. 3554	6.0	3	III–VII.	348	20	3.4	17.6	11.1	20.1	9.9	6.1	11.37	28.748	. .	27.259
	40	Weisse I, 439	9.0	3	III–VII.	307	55	0.6	13.6	4.9	14.2	7.9	4.7	7.65	30.572	. .	29.075
	41	B. A. C. 3649	7.0	3	III–VII.	309	20	0.9	15.0	7.8	14.7	10.8	6.8	9.33	27.857	. .	26.360
	42	Lacaille 4450.	6.0	3	III–VII.	359	5	0.3	14.8	7.7	18.1	7.9	1.3	8.35	29.736	. .	28.249
	43	Lacaille 4503.	7.0	3	III–VII.	358	35	2.8	18.9	11.0	22.3	11.2	5.0	11.87	36.705	. .	35.218
	44	Lacaille 4558.	6.0	3	III–VII.	"	"	"	"	"	"	"	"	"	28.247	. .	26.760
	45	O. Arg. S. 11114.	7.0	3	IV–VI.	348	35	0.0	14.2	7.2	17.2	7.4	1.2	7.87	31.205	. .	29.712
	46	O. Arg. S. 11267.	7.5	3	III–VII.	349	0	0.0	14.4	8.0	17.5	7.9	0.9	8.12	32.716	. .	31.227
	47	O. Arg. S. 11320.	7.0	3	III–VII.	344	20	2.8	17.7	9.8	18.9	11.2	6.0	11.07	35.265	. .	33.775
	48	Nadir	. .	.	. . .	100	0	2.3	19.5	8.0	22.8	13.4	9.8	12.63	31.777	. .	. .
14	49	Anon. $9^h\ 48^m\ 29^s$	8.0	3	III–VII.	346	45	1.6	11.9	7.2	12.3	6.5	5.0	7.42	32.384	−1.418	30.971
	50	O. Arg. S. 10324.	6.5	3	III–VII.	343	35	2.8	14.1	7.9	15.1	9.2	6.3	9.23	35.266	. .	33.852
	51	Anon. $10^h\ 13^m\ 34^s$	7.0	3	III–VII.	322	35	1.9	12.4	6.8	13.9	8.8	5.9	8.28	32.894	. .	31.477
	52	Lacaille 4286.	6.5	3	III–VII.	347	25	0.2	11.8	7.2	13.9	6.4	3.6	7.18	34.502	. .	33.089
	53	Lacaille 4317.	6.5	3	III–VII.	344	40	3.1	14.6	9.5	16.1	10.6	5.7	9.93	30.272	. .	28.859
	54	Lacaille 4393.	7.5	3	III–VII.	345	0	0.4	11.8	6.9	11.9	6.8	2.5	6.72	35.262	. .	33.849
	55	Lacaille 4437.	6.5	3	III–VII.	355	5	2.5	16.4	9.8	16.9	9.7	4.2	9.92	31.845	. .	30.434
	56	Anon. $10^h\ 39^m\ 53^s$	7.5	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	30.375	. .	28.984
	57	Anon. $10^h\ 46^m\ 2^s$	8.5	2	VI, VIII,	319	40	2.2	13.9	8.7	14.7	10.2	6.9	9.43	24.368	. .	22.962
	58	Anon. $10^h\ 47^m\ 32^s$	7.0	3	III–VII.	"	"	"	"	"	"	"	"	"	26.835	. .	25.417
	59	Lacaille 4570.	7.0	3	III–VII.	345	40	0.3	12.4	6.0	13.5	7.5	3.2	7.15	30.352	. .	28.939
	60	O. Arg. S. 11188.	8.5	3	III–VII.	344	5	3.7	16.8	10.9	17.5	12.2	7.0	11.35	24.552	. .	23.139
	61	O. Arg. S. 11208.	7.0	3	IV–VI.	"	"	"	"	"	"	"	"	"	24.058	. .	22.641
	62	O. Arg. S. 11216.	8.0	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	32.112	. .	30.716
	63	O. Arg. S. 11320.	7.0	3	III–VII.	344	20	3.0	17.6	10.6	18.0	11.8	7.0	11.33	35.129	. .	33.716
	64	Anon. $11^h\ 21^m\ 36^s$	7.7	3	V, VII, IX.	353	40	1.3	15.8	9.7	18.4	9.7	5.2	10.02	30.949	. .	29.553
	65	Weisse XI, 643	8.5	3	III–VII.	326	15	0.3	12.4	6.0	13.9	8.3	3.7	7.43	32.440	. .	31.023

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 8.1	S. 26 0 15.6	29.9	+ 12 52 53.8	+ 6.3	Y.	
2	. .	. .	. .	− 1 39.1	25 58 28.5	29.8	+ 12 54 41.0	+ 6.2	Y.	
3	. .	. .	. .	− 0 47.6	71 19 23.0	2 59.4	− 32 28 43.1	+ 7.8	Y.	
4	. .	. .	. .	+ 1 6.9	77 31 20.5	4 30.7	− 38 42 11.9	+ 7.2	Y.	
5	30.114	33.5	28.0	+ 0 11.7	23 0 19.4	26.0	+ 15 52 53.9	+ 6.2	Y.	
6	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
7	. .	. .	. .	− 2 3.9	69 53 5.3	2 44.3	− 31 2 10.4	+ 17.4	Y.	
8	29.988	36.7	30.2	− 1 15.6	69 53 53.6	2 44.5	− 31 2 58.8	+ 17.0	Y.	
9	. .	. .	. .	− 1 51.8	62 48 16.6	1 57.7	− 23 56 35.1	+ 15.5	Y.	
10	. .	. .	. .	− 1 49.1	62 48 19.3	1 57.7	− 23 56 37.8	+ 15.4	Y.	
11	30.988	35.7	29.6	+ 1 27.8	73 1 37.7	3 16.6	− 34 11 15.0	+ 15.5	Y.	
12	. .	. .	. .	+ 0 40.8	66 15 49.4	2 17.4	− 27 24 27.5	+ 14.4	Y.	
13	. .	. .	. .	+ 2 35.4	58 42 43.6	1 39.7	− 19 50 44.1	+ 13.1	Y.	
14	. .	. .	. .	− 1 47.6	70 33 24.0	2 50.7	− 31 42 35.4	+ 14.2	Y.	
15	. .	. .	. .	− 1 12.1	80 3 55.9	5 36.5	− 41 15 53.2	+ 14.4	Y.	
16	. .	. .	. .	− 0 36.1	80 4 31.9	5 36.0	− 41 16 28.7	+ 14.4	Y.	
17	29.988	35.1	29.1	− 2 44.9	80 2 23.1	5 34.9	− 41 14 18.7	+ 16.2	Y.	
18	. .	. .	. .	+ 0 25.0	64 55 33.1	2 9.4	− 26 4 3.2	+ 12.6	Y.	
19	. .	. .	. .	+ 0 33.3	64 10 39.2	2 5.1	− 25 19 5.1	+ 12.2	Y.	
20	. .	. .	. .	− 1 29.9	72 23 38.4	3 9.6	− 33 33 8.8	+ 12.3	Y.	
21	. .	. .	. .	− 1 10.7	72 23 57.7	3 9.7	− 33 33 28.1	+ 12.2	Y.	
22	. .	. .	. .	− 1 58.6	64 53 10.9	2 9.1	− 26 1 40.8	+ 11.2	Y.	
23	29.994	34.4	29.2	− 2 10.7	64 52 58.8	2 9.1	− 26 1 28.7	+ 11.2	Y.	
24	. .	. .	. .	+ 0 15.5	74 10 28.2	3 31.8	− 35 20 20.8	+ 11.0	Y.	Double, very close.
25	. .	. .	. .	+ 0 19.5	73 15 30.2	3 19.9	− 34 25 10.8	+ 10.5	Y.	
26	. .	. .	. .	+ 0 20.7	73 15 31.4	3 19.9	− 34 25 12.0	+ 10.5	Y.	
27	. .	. .	. .	+ 1 16.4	74 6 27.3	3 31.0	− 35 16 19.1	+ 9.9	Y.	
28	. .	. .	. .	+ 3 17.7	32 38 26.8	39.0	+ 6 14 33.5	+ 7.0	Y.	
29	30.010	34.0	28.8	+ 2 16.1	62 32 26.9	1 56.7	− 23 40 44.4	+ 8.4	Y.	
30	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
31	30.114	34.3	30.7	+ 0 41.5	73 10 50.1	3 19.0	− 34 20 29.9	+ 12.0	Y.	
32	. .	. .	. .	− 2 30.5	59 12 41.1	1 41.9	− 20 20 43.8	+ 10.6	Y.	
33	. .	. .	. .	− 1 19.9	22 43 49.0	25.5	+ 16 9 24.7	+ 5.7	Y.	
34	. .	. .	. .	+ 0 32.1	22 45 41.0	25.6	+ 16 7 32.7	+ 5.8	Y.	
35	30.108	34.2	29.8	+ 0 29.9	71 35 42.7	3 1.5	− 32 45 5.0	+ 10.4	Y.	
36	. .	. .	. .	− 0 14.8	68 29 54.9	2 33.7	− 29 38 49.4	+ 9.8	Y.	
37	. .	. .	. .	− 2 13.2	74 57 53.6	3 43.7	− 36 7 58.0	+ 9.5	Y.	
38	. .	. .	. .	+ 2 7.7	26 57 15.2	31.0	+ 11 55 53.1	+ 6.3	Y.	
39	30.104	34.3	29.6	+ 1 25.8	68 21 37.2	2 32.7	− 29 30 30.6	+ 8.7	Y.	
40	. .	. .	. .	+ 0 29.0	27 55 36.6	32.3	+ 10 57 30.3	+ 6.4	Y.	
41	. .	. .	. .	+ 1 53.9	29 22 3.2	34.4	+ 9 31 1.7	+ 6.5	Y.	
42	. .	. .	28.7	+ 0 54.8	79 6 3.2	5 8.2	− 40 17 32.1	+ 7.0	Y.	
43	. .	. .	. .	− 2 43.6	78 32 28.3	4 53.6	− 39 43 42.6	+ 6.5	Y.	
44	30.106	34.2	29.0	+ 1 41.4	78 36 53.2	4 55.5	− 39 48 9.5	+ 6.0	Y.	
45	. . .	. .	. .	+ 0 9.0	68 35 16.9	2 34.7	− 29 44 12.3	+ 6.3	Y.	
46	. .	. .	. .	− 0 38.4	68 59 29.7	2 37.9	− 30 8 28.3	+ 5.6	Y.	
47	30.108	34.1	29.0	− 1 58.3	64 18 12.7	2 6.4	− 25 26 39.8	+ 5.7	Y.	
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
49	30.012	45.5	35.8	− 0 30.4	66 44 37.0	2 18.7	− 27 53 16.5	+ 11.3	Y.	
50	. .	. .	. .	− 2 0.8	63 33 8.5	2 0.1	− 24 41 29.4	+ 10.6	Y.	
51	. .	. .	35.1	− 0 46.3	42 34 22.0	55.2	− 3 41 37.9	+ 8.2	Y.	
52	. .	. .	. .	− 1 36.8	67 23 30.4	2 23.5	− 28 32 14.6	+ 9.7	Y.	
53	30.014	42.5	34.8	+ 0 35.8	64 40 45.8	2 6.5	− 25 49 13.0	+ 9.3	Y.	
54	. .	. .	. .	− 2 0.7	64 58 6.1	2 8.5	− 26 6 35.3	+ 8.8	Y.	
55	. .	. .	. .	− 0 13.6	75 4 56.3	3 42.4	− 36 14 59.5	+ 8.6	Y.	
56	. .	. .	. .	+ 0 31.8	75 5 41.7	3 42.6	− 36 15 45.1	+ 8.5	Y.	
57	. .	. .	. .	+ 3 40.1	39 43 49.5	50.0	− 0 51 0.2	+ 7.3	Y.	
58	. .	. .	34.7	+ 2 23.4	39 42 32.8	50.0	− 0 49 43.5	+ 7.3	Y.	
59	. .	. .	. .	+ 0 33.2	65 40 40.4	2 12.5	− 26 49 13.6	+ 7.6	Y.	
60	. .	. .	. .	+ 3 34.5	64 8 45.9	2 3.7	− 25 17 10.4	+ 7.4	Y.	
61	. .	. .	. .	+ 3 50.1	64 9 1.4	2 3.8	− 25 17 25.9	+ 7.3	Y.	
62	30.010	40.3	34.2	− 0 22.4	64 4 48.9	2 3.4	− 25 13 13.0	+ 7.3	Y.	
63	. .	. .	. .	− 1 56.5	64 18 14.8	2 4.4	− 25 26 40.0	+ 6.8	Y.	
64	. .	. .	33.5	+ 0 14.0	73 40 24.0	3 23.3	− 34 50 8.0	+ 5.9	Y.	
65	. .	. .	. .	− 0 32.1	S. 46 14 35.4	1 3.0	− 7 21 59.1	+ 6.4	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Mar. 14	1	Weisse XI, 758 . .	6.5	3	III–VII.	326 10 0.0	11.8	5.1	12.7	7.1	3.0	6.62	34.024	−1.418	32.607
	2	Weisse XI, 921 . .	8.0	3	III–VII.	310 14 57.9	70.5	63.9	70.0	66.2	61.0	64.92	31.994	. .	30.575
	3	Dorpat 1604, (1st *) .	7.5	2	IV, VI.	330 0 1.0	14.7	8.5	16.7	9.1	4.4	9.07	31.394	. .	29.977
	4	Dorpat 1604, (2d *) .	8.3	2	I, IX.	“ “ “	“	“	“	“	“	“	31.260	. .	29.852
	5	Weisse XII, 179. .	9.0	3	III–VII.	311 10 4.1	17.3	10.8	18.2	13.2	8.2	11.97	33.033	. .	31.614
	6	Weisse XII, 184. .	8.0	2	I, IX.	“ “ “	“	“	“	“	“	“	31.287	. .	29.862
	7	Nadir	. .	.	. .	99 59 59.5	75.1	65.7	79.5	68.9	67.9	69.43	31.601	. .	. .
18	8	Anon. $7^h\ 2^m\ 31^s$.	8.5	2	I, IX.	333 34 59.4	69.6	63.9	69.9	66.7	61.7	65.20	34.510	−1.416	33.107
	9	Anon. $7^h\ 2^m\ 38^s$.	9.2	3	III–VII.	“ “ “	“	“	“	“	“	“	32.167	. .	30.754
	10	Anon. $7^h\ 13^m\ 20^s$.	9.0	1	V.	349 25 1.2	13.5	8.1	15.4	8.1	4.0	8.38	30.162	. .	28.746
	11	Anon. $7^h\ 13^m\ 35^s$.	7.5	2	VI, VIII.	“ “ “	“	“	“	“	“	“	31.370	. .	29.975
	12	B. A. C. 2470 . .	6.0	3	III–VII.	330 10 1.4	11.7	5.7	12.0	8.2	4.1	7.18	30.879	. .	29.465
	13	Anon. $7^h\ 31^m\ 11^s$.	9.0	2	II, VIII.	349 55 0.9	11.8	5.8	13.5	7.7	3.0	7.12	33.495	. .	32.096
	14	Anon. $7^h\ 31^m\ 43^s$.	7.5	2	V, VII.	“ “ “	“	“	“	“	“	“	35.158	. .	33.745
	15	O. Arg. S. 7476 . .	8.5	2	III, V.	342 19 59.2	69.2	64.6	70.5	66.5	61.0	65.17	30.536	. .	29.117
	16	Anon. $7^h\ 44^m\ 10^s$.	8.5	2	VII, IX.	“ “ “	“	“	“	“	“	“	21.376	. .	19.991
	17	O. Arg. S. 7758 . .	7.0	3	V, VII, IX.	346 5 2.2	12.5	7.3	11.9	9.0	4.9	7.97	31.202	. .	29.809
	18	Anon. $8^h\ 14^m\ 58^s$.	9.0	3	III–VII.	349 20 3.6	15.5	9.7	17.7	11.2	6.3	10.67	22.722	. .	21.312
	19	Lacaille 3279. . .	7.0	3	V, VII, IX.	347 5 2.2	13.2	7.9	15.0	9.4	6.6	9.05	33.279	. .	31.886
	20	Anon. $8^h\ 23^m\ 9^s$ . .	8.3	3	III–VII.	“ “ “	“	“	“	“	“	“	25.621	. .	24.211
	21	c^2 Cancri	6.0	3	III–VII.	308 50 2.2	12.6	5.7	12.5	9.9	7.3	8.37	28.572	. .	27.154
	22	Lacaille 3485. . .	5.5	3	III–VII.	354 20 3.7	17.2	10.0	16.9	11.2	7.8	11.13	33.566	. .	32.157
	23	Anon. $8^h\ 45^m\ 18^s$.	6.0	3	III–VII.	354 14.58.4	72.4	65.7	71.9	66.4	62.1	66.15	27.357	. .	25.948
	24	Weisse (2) VIII, 1324	7.3	3	III–VII.	280 30 1.3	15.2	7.3	15.7	11.6	9.6	10.12	27.564	. .	26.140
	25	Anon. $9^h\ 1^m\ 54^s$ . .	8.3	3	IV–VI.	350 15 3.8	16.4	10.4	19.5	11.2	7.7	11.50	32.375	. .	30.961
	26	Lacaille 3741. . .	7.5	2	I, IX.	354 15 1.4	15.8	8.1	16.5	9.4	5.4	9.43	30.071	. .	28.689
	27	Anon. $9^h\ 9^m\ 32^s$ . .	9.0	3	III–VII.	“ “ “	“	“	“	“	“	“	34.182	. .	32.773
	28	Anon. $9^h\ 17^m\ 31^s$.	7.0	3	III–VII.	353 50 4.4	16.8	9.5	18.6	11.8	7.3	11.40	34.894	. .	33.485
	29	Anon. $9^h\ 25^m\ 49^s$.	7.3	3	III–VII.	354 10 0.6	15.3	8.3	16.4	8.9	5.2	9.12	28.440	. .	27.031
	30	Lacaille 3946. . .	5.8	3	III–VII.	354 20 1.8	16.3	9.1	15.9	8.7	5.9	9.62	29.592	. .	28.183
	31	Anon. $9^h\ 34^m\ 23^s$.	9.0	2	V, VII.	“ “ “	“	“	“	“	“	“	30.542	. .	29.137
	32	Anon. $9^h\ 35^m\ 46^s$.	7.2	3	IV–VI.	“ “ “	“	“	“	“	“	“	37.747	. .	36.333
	33	Anon. $9^h\ 42^m\ 50^s$.	7.0	3	V, VII, IX.	293 45 0.9	13.1	5.8	14.8	9.7	7.2	8.58	34.413	. .	32.999
	34	Anon. $9^h\ 47^m\ 58^s$.	7.2	3	V, VII, IX.	356 40 5.1	19.6	11.8	22.2	12.2	9.1	13.33	36.351	. .	34.963
	35	O. Arg. S. 10324. .	6.5	3	III–VII.	343 35 3.0	15.8	9.7	16.7	11.6	7.7	10.75	35.292	. .	33.880
	36	Lacaille 4192. . .	6.5	3	III–VII.	350 45 0.7	12.8	6.8	15.8	8.4	3.3	7.97	34.644	. .	33.234
	37	Lacaille 4253. . .	7.2	3	III–VII.	357 50 1.3	15.2	8.5	18.2	9.7	oblit.	9.77	27.320	. .	25.912
	38	Nadir	. .	.	. .	99 59 58.3	73.8	63.2	75.9	68.1	66.1	67.57	31.539	. .	. .
19	39	Lacaille 2496. . .	8.0	3	III–VII.	343 5 4.4	14.7	8.0	15.3	11.0	6.6	10.00	30.607	−1.430	29.181
	40	Anon. $7^h\ 2^m\ 30^s$ . .	8.5	2	III, VII.	333 35 0.8	11.9	5.9	10.3	8.5	3.2	6.77	34.548	. .	33.122
	41	Anon. $7^h\ 2^m\ 37^s$ . .	9.0	2	V, IX.	“ “ “	“	“	“	“	“	“	32.084	. .	30.672
	42	Anon. $7^h\ 6^m\ 56^s$ . .	9.0	3	V, VII, IX.	333 14 58.1	70.2	62.9	69.6	66.9	60.9	64.77	28.261	. .	26.849
	43	Weisse VII, 196. .	7.8	1	IX.	“ “ “	“	“	“	“	“	“	32.958	. .	31.563
	44	Lacaille 2767. . .	7.0	2	I, IX.	354 30 0.8	12.2	6.9	12.9	8.7	3.9	7.57	30.094	. .	28.699
	45	Lacaille 2767, (comp'n)	8.0	3	III–VII.	“ “ “	“	“	“	“	“	“	29.781	. .	28.358
	46	O. Arg. S. 7131 . .	7.0	3	III–VII.	346 0 1.9	12.8	7.8	12.9	9.8	4.2	8.23	32.377	. .	30.952
	47	O. Arg. S. 7443 . .	8.5	3	III–VII.	342 50 0.5	11.1	5.6	11.5	8.1	2.1	6.48	34.836	. .	33.410
	48	Anon. $7^h\ 51^m\ 41^s$.	9.0	3	III–VII.	348 50 2.2	15.1	9.2	16.1	11.2	5.8	9.93	25.506	. .	24.081
	49	Anon. $7^h\ 52^m\ 34^s$.	7.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	30.568	. .	29.173
	50	O. Arg. S. 7798 . .	8.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	26.613	. .	25.185
	51	Lacaille 3267. . .	6.5	3	III–VII.	349 35 1.5	13.4	8.2	15.8	8.8	4.0	8.62	36.290	. .	34.866
	52	O. Arg. S. 8484 . .	7.3	3	III–VII.	349 15 5.2	17.1	11.4	18.7	13.2	7.9	12.25	33.078	. .	31.654
	53	Lacaille 2883. . .	7.0	3	III–VII.	349 55 2.8	15.3	8.8	17.3	10.8	6.1	10.18	29.072	. .	27.648
	54	Weisse VIII, 885 .	8.0	2	I, IX.	333 5 1.0	15.2	9.4	16.0	12.4	5.8	9.97	28.218	. .	26.800
	58	Weisse VIII, 889 .	9.5	1	V.	“ “ “	“	“	“	“	“	“	33.381	. .	31.951
	56	Lacaille 3564. . .	8.0	3	III–VII.	352 45 2.2	15.8	8.0	16.7	9.8	5.2	9.62	28.271	. .	26.847
	57	Weisse (2) VIII, 1352	7.5	3	III–VII.	295 45 1.8	13.0	5.9	13.4	12.2	7.4	8.95	29.654	. .	28.220
	58	36 Lyncis	5.5	3	III–VII.	275 10 0.8	11.8	6.5	15.3	10.2	8.6	8.87	34.419	. .	32.980
	59	27 Hydræ	. .	3	III–VII.	327 50 2.9	16.6	8.8	16.5	13.4	7.2	10.90	25.979	. .	24.547
	60	Nadir	. .	.	. .	100 0 1.8	17.2	5.8	18.1	11.6	9.5	10.67	31.651	. .	. .
21	61	Lacaille 2496. . .	. .	3	III–VII.	343 5 1.6	8.5	3.0	6.5	7.7	6.1	5.57	30.422	−1.440	28.986
	62	Anon. $7^h\ 5^m\ 41^s$.	8.2	3	III–VII.	333 40 1.7	8.9	3.2	6.6	7.7	4.6	5.45	30.229	. .	28.792
	63	Anon. $7^h\ 12^m\ 44^s$.	9.0	2	VII, IX.	293 40 2.8	8.4	4.8	8.5	10.5	9.5	7.42	31.255	. .	29.817
	64	Anon. $7^h\ 13^m\ 10^s$.	8.0	1	IX.	“ “ “	“	“	“	“	“	“	33.245	. .	31.805
	65	O. Arg. S. 6941 . .	8.3	2	III, IX.	347 25 2.8	11.8	7.1	11.1	9.2	8.5	8.42	28.838	. .	27.421

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.016	38.6	32.8	− 1 21.7	S. 46 8 44.9	1 2.8	− 7 16 8.5	+ 6.2	Y.	
2	. .	. .	. .	− 0 18.0	30 14 46.9	35.2	+ 8 38 17.1	+ 6.3	Y.	
3	. .	. .	. .	+ 0 0.7	50 0 9.8	1 11.9	− 11 7 42.5	+ 5.5	Y.	
4	. .	. .	. .	+ 0 4.6	50 0 13.7	1 11.9	− 11 7 46.4	+ 5.5	Y.	
5	30.010	38.5	32.2	− 0 50.6	31 9 21.4	36.6	+ 7 43 41.3	+ 6.2	Y.	
6	. .	. .	. .	+ 0 4.3	31 10 16.3	36.6	+ 7 42 46.4	+ 6.3	Y.	
7	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
8	. .	. .	. .	− 1 37.4	53 33 27.8	1 20.8	− 14 41 9.3	+ 10.9	Y.	
9	29.988	43.6	37.6	− 0 23.6	53 34 41.6	1 20.8	− 14 42 23.2	+ 10.9	Y.	
10	. .	. .	. .	+ 0 39.3	69 25 47.7	2 38.0	− 30 34 46.4	+ 18.4	Y.	
11	. .	. .	. .	+ 0 0.8	69 25 9.2	2 37.9	− 30 34 7.8	+ 18.4	Y.	
12	30.000	43.1	37.6	+ 0 16.8	50 10 23.9	1 11.6	− 11 17 56.3	+ 13.8	Y.	
13	. .	. .	. .	− 1 5.7	69 54 1.5	2 42.1	− 31 3 4.3	+ 18.0	Y.	
14	. .	. .	. .	− 1 57.4	69 53 9.7	2 41.9	− 31 2 12.4	+ 18.0	Y.	Follows last 20s.
15	. .	. .	. .	+ 0 27.7	62 20 32.8	1 53.8	− 23 28 47.3	+ 16.1	Y.	
16	. .	. .	. .	+ 5 12.7	62 25 17.9	1 54.2	− 23 33 32.8	+ 16.2	Y.	
17	30.010	42.3	35.4	+ 0 6.0	66 5 13.9	2 14.7	− 27 13 49.4	+ 16.6	Y.	
18	. .	. .	. .	+ 4 31.5	69 24 42.2	2 38.5	− 30 33 41.5	+ 16.4	Y.	
19	. .	. .	. .	− 0 59.1	67 4 10.0	2 20.7	− 28 12 51.4	+ 15.9	Y.	
20	30.028	41.8	37.0	+ 3 1.1	67 8 10.1	2 21.1	− 28 16 52.0	+ 15.7	Y.	
21	. .	. .	. .	+ 1 29.1	28 51 37.4	33.0	+ 10 1 28.8	+ 6.9	Y.	
22	. .	. .	. .	− 1 7.6	74 19 3.5	3 30.3	− 35 28 54.6	+ 16.1	Y.	
23	30.030	41.5	37.2	+ 2 6.8	74 17 12.9	3 30.0	− 35 27 3.6	+ 15.7	Y.	
24	. .	. .	. .	+ 2 0.8	0 32 10.9	0.6	+ 38 21 27.8	− 0.8	Y.	
25	. .	. .	. .	− 0 30.1	70 14 41.4	2 45.3	− 31 23 47.5	+ 14.4	Y.	
26	. .	. .	. .	+ 0 41.1	74 15 50.5	3 29.6	− 35 25 40.8	+ 14.5	Y.	
27	. .	. .	. .	− 1 26.9	74 13 42.5	3 29.1	− 35 23 32.4	+ 14.5	Y.	
28	30.046	41.3	37.5	− 1 49.2	73 48 22.2	3 23.5	− 34 58 6.4	+ 14.0	Y.	
29	. .	. .	. .	+ 1 33.0	74 11 42.1	3 28.7	− 35 21 31.6	+ 13.6	Y.	
30	. .	. .	. .	+ 0 56.9	74 21 6.5	3 30.8	− 35 30 58.1	+ 13.3	Y.	
31	. .	. .	. .	+ 0 27.0	74 20 36.6	3 30.8	− 35 30 28.2	+ 13.2	Y.	
32	. .	. .	. .	− 3 18.6	74 16 51.0	3 29.9	− 35 26 41.7	+ 13.1	Y.	
33	. .	. .	. .	− 1 34.0	13 43 34.6	14.6	+ 25 9 50.0	+ 3.3	Y.	
34	. .	. .	. .	− 2 35.6	76 37 37.7	4 7.2	− 37 48 5.7	+ 12.5	Y.	
35	30.050	41.2	37.0	− 2 1.6	63 33 9.1	2 0.0	− 24 41 29.9	+ 11.1	Y.	
36	. .	. .	. .	− 1 41.4	70 43 26.6	2 50.0	− 31 52 37.3	+ 10.1	Y.	Corr. −1.″03 applied to mean of A, B, C, D.
37	30.058	41.0	36.8	+ 2 8.1	77 52 17.9	4 32.7	− 39 3 11.4	+ 10.9	Y.	
38	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
39	30.140	45.2	41.8	+ 0 25.6	63 5 35.6	1 56.8	− 24 13 53.2	+ 17.7	Y.	
40	. .	. .	. .	− 1 37.8	53 33 28.9	1 20.5	− 14 41 10.2	+ 15.1	Y.	
41	. .	. .	. .	− 0 21.1	53 34 45.7	1 20.6	− 14 42 27.1	+ 15.1	Y.	
42	. .	. .	. .	+ 1 38.6	53 16 43.4	1 19.8	− 14 24 23.9	+ 14.9	Y.	
43	. .	. .	. .	− 0 49.0	53 14 15.8	1 19.9	− 14 21 56.4	+ 14.9	Y.	
44	. .	. .	. .	+ 0 40.8	74 30 48.3	3 32.9	− 35 40 42.0	+ 19.4	Y.	
45	30.144	45.0	39.1	+ 0 51.4	74 30 59.0	3 33.0	− 35 40 52.7	+ 19.4	Y.	Same R. A.
46	. .	. .	. .	− 0 29.8	65 59 38.4	2 13.9	− 27 8 13.0	+ 17.3	Y.	
47	. .	. .	37.0	− 1 46.9	62 48 19.6	1 56.3	− 23 56 36.6	+ 16.4	Y.	
48	. .	. .	. .	+ 3 5.1	68 53 15.1	2 34.5	− 30 2 10.3	+ 17.3	Y.	
49	. .	. .	. .	+ 0 25.9	68 50 35.8	2 34.3	− 29 59 30.8	+ 17.2	Y.	
50	30.144	44.0	36.8	+ 2 30.6	68 52 40.6	2 34.6	− 30 1 35.9	+ 17.2	Y.	
51	. .	. .	. .	− 2 32.5	69 32 36.1	2 40.5	− 30 41 37.4	+ 16.5	Y.	
52	. .	. .	35.2	− 0 51.8	69 14 20.4	2 38.0	− 30 23 19.2	+ 16.4	Y.	
53	. .	. .	. .	+ 1 13.6	69 56 23.8	2 43.9	− 31 5 28.4	+ 16.1	Y.	
54	. .	. .	. .	+ 1 40.1	53 6 50.1	1 20.2	− 14 14 31.1	+ 12.8	Y.	
55	. .	. .	. .	− 1 1.1	53 4 8.8	1 20.1	− 14 11 49.7	+ 12.8	Y.	
56	30.138	43.0	35.4	+ 1 38.7	72 46 48.3	3 12.4	− 33 56 21.4	+ 15.7	Y.	
57	. .	. .	. .	+ 0 55.7	S. 15 46 4.7	17.0	+ 23 7 17.5	+ 3.3	Y.	
58	. .	. .	. .	− 1 33.4	N. 4 51 24.5	5.1	+ 43 46 8.9	− 2.1	Y.	
59	. .	. .	34.4	+ 2 50.6	S. 47 53 1.5	1 6.8	− 9 0 29.0	+ 10.6	Y.	Cloudy.
60	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
61	29.892	56.0	50.9	+ 0 31.8	63 5 37.3	1 53.7	− 24 13 51.8	+ 17.9	Y.	
62	. .	. .	. .	+ 0 37.8	53 40 43.3	1 18.7	− 14 48 22.7	+ 15.2	Y.	
63	. .	. .	. .	+ 0 5.7	13 40 13.1	14.1	+ 25 13 12.0	+ 2.3	Y.	
64	. .	. .	. .	− 0 56.6	13 39 10.9	14.1	+ 25 14 14.3	+ 2.3	Y.	Another star to northward of this.
65	. .	. .	. .	+ 1 20.7	S. 67 26 29.1	2 18.9	− 28 35 8.8	+ 18.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Mar. 21	1	O. Arg. S. 6946 . .	9.0	3	IV–VI.	347 25 2.8	11.8	7.1	11.1	9.2	8.5	8.42	30.540	−1.440	29.102
	2	O. Arg. S. 7470 . .	7.3	3	III–VII.	349 20 3.7	11.6	7.2	12.1	9.3	7.1	8.50	36.692	. .	35.258
	3	Lacaille 2998. . .	7.0	2	VII, IX.	342 20 8.4	15.5	11.1	15.8	14.9	12.1	12.97	31.073	. .	29.664
	4	Anon. $7^h 52^m 31^s$.	6.0	3	IV–VI.	348 50 2.6	12.4	6.7	12.2	8.8	6.4	8.18	30.420	. .	28.982
	5	O. Arg. S. 7798 . .	8.3	3	III–VII.	" " "	"	"	"	"	"	"	26.425	. .	24.991
	6	ω Puppis	5.0	3	III–VII.	351 30 1.2	9.7	3.3	9.7	6.3	3.9	5.68	32.374	. .	30.940
	7	Lacaille 3299. . .	. .	3	IV–VI.	348 49 59.4	67.9	63.1	67.8	65.8	61.9	64.32	31.699	. .	30.261
	8	Groombridge 1452 .	8.5	3	IV–VI.	238 25 1.6	7.2	7.0	13.2	10.8	12.5	8.72	30.585	. .	29.128
	9	O. Arg. S. 8946 . .	9.0	3	V, VII, IX.	345 55 0.2	7.7	3.6	7.3	5.5	3.4	4.62	26.466	. .	25.049
	10	Anon. $8^h 49^m 38^s$.	8.5	3	V, VII, IX.	353 50 4.3	14.2	8.0	13.5	10.3	8.0	9.72	29.278	. .	27.865
	11	B. A. C. 3104. . .	7.0	5	I–IX.	303 5 2.6	10.2	5.1	9.8	9.5	8.0	7.53	30.233	. .	28.786
	12	Weisse (2) IX, 79 .	7.0	3	III–VII.	298 20 2.3	11.1	5.4	9.2	9.8	8.1	7.65	31.471	. .	30.027
	13	Anon. $9^h 5^m 33^s$ . .	. .	1	IX.	" " "	"	"	"	"	"	"	34.301	. .	32.866
	14	Lacaille 3780. . .	6.0	3	III–VII.	357 20 2.5	12.2	6.9	14.4	9.1	oblit.	8.72	32.500	. .	31.068
	15	Lacaille 3857. . .	7.3	3	III–VII.	343 50 5.4	13.9	9.0	13.8	11.5	9.2	10.47	32.759	. .	31.323
	16	O. Arg. S. 9903 . .	8.0	3	III–VII.	339 10 3.7	12.7	7.6	13.2	9.7	7.2	9.02	30.594	. .	29.158
	17	Anon. $9^h 32^m 33^s$.	8.5	3	IV–VI.	" " "	"	"	"	"	"	"	26.383	. .	24.944
	18	Lacaille 4016. . .	7.7	3	III–VII.	357 35 2.4	12.8	8.4	14.8	9.5	oblit.	9.32	35.741	. .	34.309
	19	Weisse (2) IX . .	7.3	3	III–VII.	290 10 2.2	10.2	2.4	9.2	7.3	7.7	6.50	30.319	. .	28.874
	20	Anon. $9^h 56^m 27^s$.	9.0	2	IV, VI.	305 24 59.5	67.0	60.9	66.9	66.3	64.0	64.10	31.042	. .	29.601
	21	Anon. $9^h 56^m 41^s$.	8.8	2	VII, IX.	" " "	"	"	"	"	"	"	35.574	. .	34.146
	22	Weisse X, 74. . .	9.0	3	III–VII.	312 45 0.2	6.8	2.5	6.9	6.2	3.9	4.42	31.793	. .	30.352
	23	Lacaille 4227. . .	7.5	2	VII, IX.	352 20 0.5	10.5	4.2	11.2	6.3	3.9	6.10	32.377	. .	30.976
	24	O. Arg. N. 10861 .	6.0	3	IV–VI.	254 0 2.7	11.8	10.0	18.1	10.5	12.5	10.93	34.365	. .	32.919
	25	Anon. $10^h 30^m 22^s$.	8.5	3	III–VII.	354 30 3.4	15.6	9.1	16.0	10.5	9.6	10.70	27.863	. .	26.430
	26	Lacaille 4437. . .	6.5	3	III–VII.	355 5 1.6	13.7	7.0	13.7	7.8	5.8	8.27	31.497	. .	30.064
	27	Nadir	. .	.	. . .	100 0 0.4	13.3	4.2	14.7	10.2	9.4	8.70	31.599	. .	. .
22	28	Nadir	. .	.	. .	100 0 0.7	14.2	4.2	14.8	9.9	8.7	8.75	31.578	−1.423	. .
	29	Nadir	. .	.	. .	99 49 58.4	72.9	62.8	73.0	68.2	65.2	66.75	12.001	. .	. .
	30	Nadir	. .	.	. .	99 55 0.4	14.6	4.3	15.6	11.2	8.9	9.17	22.001	. .	. .
	31	Nadir	. .	.	. .	100 0 0.1	14.8	4.6	15.2	10.5	8.4	8.93	31.589	. .	. .
	32	Nadir	. .	.	. .	100 5 0.3	13.3	4.0	14.9	10.5	7.5	8.42	41.128	. .	. .
	33	Nadir	. .	.	. . .	99 59 58.0	73.1	62.5	73.1	68.8	65.9	66.90	31.525	. .	. .
	34	Lacaille 4135. . .	6.5	3	III–VII.	358 10 5.7	15.8	12.1	17.9	10.9	6.4	11.47	31.546	. .	30.131
24	35	Anon. $6^h 51^m 59^s$.	. .	3	III–VII.	349 35 1.3	13.3	9.2	13.1	7.8	0.9	7.60	30.722	−0.022	30.706
	36	Lacaille 2647. . .	. .	3	III–VII.	346 10 2.9	13.9	10.0	12.2	9.5	3.2	8.62	33.020	. .	33.003
	37	Anon. $7^h 6^m 34^s$ . .	8.3	3	V, VII, IX.	333 10 1.4	13.8	8.4	11.9	9.5	2.9	7.98	31.975	. .	31.970
	38	Anon. $7^h 8^m 28^s$ . .	8.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	24.792	. .	24.787
	39	Anon. $7^h 9^m 52^s$ . .	8.5	2	V, VII.	" " "	"	"	"	"	"	"	32.418	. .	32.404
	40	Weisse VII, 274. .	7.5	2	VII, IX.	" " "	"	"	"	"	"	"	31.092	. .	31.095
	41	Anon. $7^h 22^m 12^s$.	8.5	3	III–VII.	278 15 1.7	12.3	6.3	10.3	10.4	5.2	7.70	28.206	. .	28.176
	42	O. Arg. S. 7107 . .	8.0	3	IV–VII.	347 50 2.4	14.2	8.8	12.4	8.2	2.4	8.07	31.786	. .	31.766
	43	Anon. $7^h 42^m 52^s$.	8.5	2	I, IX.	344 20 3.6	16.0	10.4	13.9	11.2	4.8	9.98	32.607	. .	32.608
	44	Anon. $7^h 42^m 57^s$.	9.2	1	V.	" " "	"	"	"	"	"	"	34.248	. .	34.226
	45	Anon. $7^h 51^m 13^s$.	7.5	2	V, VII.	348 50 2.4	14.7	9.8	13.9	9.4	2.0	8.70	34.528	. .	34.516
	46	Anon. $7^h 52^m 28^s$.	6.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	29.096	. .	29.098
	47	Anon. $7^h 53^m 54^s$.	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	28.899	. .	28.912
	48	Lalande 16367 . .	8.3	3	III–VII.	291 20 3.4	14.4	8.3	14.4	11.8	7.1	9.90	24.401	. .	24.374
	49	d^2 Cancri.	6.0	3	III–VII.	301 25 1.2	11.8	7.4	10.2	8.7	4.2	7.25	30.315	. .	30.290
	50	Anon. $8^h 27^m 15^s$.	7.0	3	III–VII.	350 40 3.8	16.2	11.3	15.3	12.2	4.9	10.62	32.643	. .	32.627
	51	O. Arg. S. 8887 . .	7.2	3	III–VII.	342 35 2.2	15.2	9.9	14.7	10.5	2.4	9.15	26.813	. .	26.795
	52	Anon. $8^h 44^m 59^s$.	6.0	3	III–VII.	361 10 3.8	19.3	12.7	18.9	13.6	5.7	12.33	33.655	. .	33.642
	53	Weisse (2) VIII, 1324	7.5	3	III–VII.	280 30 2.6	16.2	9.9	14.5	13.0	7.4	10.60	26.086	. .	26.056
	54	*e* Mali	5.5	3	IV–VI.	348 40 3.4	18.5	13.1	17.2	12.4	5.3	11.65	27.505	. .	27.485
	55	Weisse IX, 198 . .	9.0	3	III–VII.	300 35 1.2	12.3	6.9	10.4	9.3	2.7	7.13	26.656	. .	26.631
	56	Anon. $9^h 17^m 11^s$.	7.0	3	III–VII.	357 40 1.7	15.4	10.8	16.8	10.2	oblit.	9.85	32.282	. .	32.268
	57	O. Arg. N. 9989 . .	7.5	3	IV–VI.	248 40 1.4	12.0	10.8	17.6	11.5	7.6	10.15	27.968	. .	27.934
	58	Anon. $9^h 35^m 44^s$.	7.0	3	III–VII.	354 15 3.7	17.5	12.2	17.2	12.1	5.2	11.32	26.898	. .	26.883
	59	Lacaille 4031. . .	8.0	2	I, IX.	353 15 0.9	14.6	9.1	15.7	10.2	2.8	8.88	29.124	. .	29.135
	60	Anon. $9^h 43^m 12^s$.	7.0	3	III–VII.	" " "	"	"	"	"	"	"	29.238	. .	29.223
	61	Anon. $9^h 53^m 29^s$.	8.0	3	III–VII.	348 55 0.8	14.8	10.2	15.6	9.4	1.2	8.67	29.548	. .	29.532
	62	B. A. C. 3448. . .	6.5	3	III–VII.	353 5 2.0	16.3	10.9	17.0	11.0	3.8	10.17	29.108	. .	29.092
	63	Anon. $10^h 7^m 23^s$.	8.5	3	III–VII.	358 50 0.4	13.7	9.8	16.0	9.2	0.9	8.33	32.544	. .	32.530
	64	Anon. $10^h 15^m 45^s$.	8.0	3	III–VII.	354 25 0.8	15.8	11.1	15.7	10.7	2.8	9.48	31.466	. .	31.451

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.902	54.5	50.0	+ 0 28.1	S. 67 25 36.6	2 18.8	− 28 34 16.1	+ 18.0	Y.	
2	. .	. .	. .	− 2 44.8	69 17 23.7	2 32.5	− 30 26 16.9	+ 17.9	Y.	
3	. .	. .	49.4	+ 0 10.5	62 20 23.5	1 50.5	− 23 28 34.7	+ 16.4	Y.	
4	. .	. .	. .	+ 0 31.9	68 50 40.0	2 29.2	− 29 59 30.0	+ 17.5	Y.	
5	. .	. .	. .	+ 2 36.6	68 52 44.8	2 29.5	− 30 1 35.0	+ 17.4	Y.	Preceded 7 seconds by star to southward.
6	. .	. .	. .	− 0 29.4	71 29 36.2	2 52.3	− 32 38 49.3	+ 17.1	Y.	
7	29.932	53.0	48.6	− 0 8.2	S. 68 49 56.2	2 29.4	− 29 58 46.3	+ 16.6	Y.	
8	. .	. .	. .	+ 0 27.3	N. 41 34 24.0	51.7	+ 80 28 54.9	− 12.0	Y.	
9	. .	. .	. .	+ 2 34.8	S. 65 57 39.4	2 10.1	− 27 6 10.3	+ 15.3	Y.	
10	29.942	52.5	47.5	+ 1 6.8	73 51 16.6	3 19.2	− 35 0 56.5	+ 16.0	Y.	
11	. .	. .	. .	+ 0 38.0	23 5 45.5	25.0	+ 15 47 28.8	+ 5.2	Y.	
12	. .	. .	. .	− 0 0.8	18 20 6.8	19.4	+ 20 33 13.1	+ 3.9	Y.	
13	. .	. .	. .	− 1 29.8	18 18 37.8	19.3	+ 20 34 42.1	+ 3.9	Y.	
14	29.940	52.0	47.4	− 0 33.5	77 19 35.2	4 14.3	− 38 30 10.3	+ 15.2	Y.	Corr. −0″.28 applied to mean of A, B, C, D.
15	. .	. .	. .	− 0 41.4	63 49 29.0	1 58.4	− 24 57 48.2	+ 13.2	Y.	
16	. .	. .	. .	+ 0 26.3	59 10 35.4	1 37.7	− 20 18 33.8	+ 12.3	Y.	
17	. .	. .	. .	+ 2 38.2	59 12 47.2	1 37.9	− 20 20 45.8	+ 12.2	Y.	
18	29.940	51.5	46.9	− 2 15.1	77 32 54.2	4 19.0	− 38 43 34.0	+ 13.6	Y.	Corr. −0″.28 applied to mean of A, B, C, D.
19	. .	. .	. .	+ 0 35.2	10 10 41.8	10.5	+ 28 42 47.0	+ 2.3	Y.	
20	. .	. .	. .	+ 0 12.5	25 25 16.6	27.8	+ 13 27 54.8	+ 5.7	Y.	
21	. .	. .	. .	− 2 10.0	25 22 54.1	27.8	+ 13 30 17.3	+ 5.7	Y.	
22	. .	. .	. .	− 0 11.0	32 44 53.4	37.7	+ 6 8 8.2	+ 7.9	Y.	
23	29.942	51.0	46.0	− 0 30.6	S. 72 19 35.5	3 1.9	− 33 28 58.2	+ 11.6	Y.	
24	. .	. .	. .	− 1 31.5	N. 26 1 20.5	28.6	+ 64 55 28.4	− 4.2	Y.	
25	. .	. .	. .	+ 1 51.7	S. 74 32 2.4	3 28.9	− 35 41 52.1	+ 10.6	Y.	
26	29.936	50.5	45.4	− 0 2.0	75 5 6.3	3 36.8	− 36 15 3.9	+ 10.1	Y.	
27	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
28	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
29	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
30	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
31	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
32	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	These results show that the value of *r*. increases with the reading from 12 to 40.
34	30.072	51.0	45.3	− 0 4.1	78 10 7.4	4 34.5	− 39 21 2.6	+ 12.9	Y.	March 23. Changed the reading of the nadir point.
35	30.342	48.5	45.7	− 0 22.1	69 34 45.5	2 38.4	− 30 43 44.6	+ 19.4	Y.	
36	. .	. .	. .	− 1 34.1	66 8 34.5	2 14.0	− 27 17 9.2	+ 18.4	Y.	
37	. .	. .	. .	− 1 1.7	53 9 6.3	1 19.4	− 14 16 46.4	+ 15.1	Y.	
38	. .	. .	. .	+ 2 43.1	53 12 51.0	1 19.6	− 14 20 31.4	+ 15.1	Y.	
39	. .	. .	. .	− 1 15.3	53 8 52.6	1 19.4	− 14 16 32.8	+ 15.1	Y.	
40	30.350	48.2	44.3	− 0 34.3	S. 53 9 33.7	1 19.5	− 14 17 13.9	+ 15.0	Y.	
41	. .	. .	. .	+ 0 57.1	N. 1 43 55.2	1.8	+ 40 37 36.2	− 3.0	Y.	
42	. .	. .	. .	− 0 55.3	S. 67 49 12.8	2 25.6	− 28 57 59.1	+ 18.2	Y.	
43	. .	. .	. .	− 1 21.8	64 18 48.2	2 3.9	− 25 27 12.9	+ 17.2	Y.	
44	30.350	47.8	42.2	− 2 12.5	64 17 57.5	2 3.8	− 25 26 22.1	+ 17.2	Y.	
45	. .	. .	. .	− 2 21.6	68 47 47.1	2 33.4	− 29 56 41.3	+ 17.8	Y.	
46	. .	. .	. .	+ 0 28.2	68 50 37.0	2 33.8	− 29 59 31.5	+ 17.8	Y.	
47	. .	. .	. .	+ 0 34.1	68 50 42.8	2 33.9	− 29 59 37.4	+ 17.8	Y.	
48	. .	. .	. .	+ 2 56.0	11 23 5.9	12.1	+ 27 30 21.3	+ 1.5	Y.	
49	30.350	46.9	40.5	− 0 9.1	21 24 58.2	23.6	+ 17 28 17.5	+ 4.7	Y.	
50	. .	. .	. .	− 1 22.3	70 38 48.3	2 49.6	− 31 47 58.6	+ 17.0	Y.	
51	. .	. .	. .	+ 1 40.3	62 36 49.4	1 55.7	− 23 45 5.9	+ 15.2	Y.	
52	30.348	46.2	39.4	− 1 54.2	81 8 18.1	6 10.1	− 42 20 49.0	+ 17.6	Y.	
53	. .	. .	. .	+ 2 3.4	0 32 14.0	0.6	+ 38 21 24.7	+ 6.7	Y.	
54	. .	. .	. .	+ 1 18.7	68 41 30.4	2 33.8	− 29 50 24.9	+ 15.2	Y.	
55	. .	. .	. .	+ 1 45.4	20 36 52.6	22.8	+ 18 16 23.9	+ 4.4	Y.	
56	30.354	45.2	37.0	− 1 11.1	S. 77 38 58.8	4 30.3	− 38 49 49.8	+ 15.6	Y.	Corr. −1″.33 applied to mean of A, B, C, D.
57	. .	. .	. .	+ 1 4.7	N. 31 18 45.2	36.9	+ 70 13 1.3	− 8.6	Y.	
58	. .	. .	. .	+ 1 37.5	S. 74 16 48.8	3 32.6	− 35 26 42.2	+ 14.3	Y.	
59	. .	. .	. .	+ 0 27.1	73 15 36.0	3 19.3	− 34 25 16.0	+ 13.9	Y.	
60	30.352	44.5	36.0	+ 0 24.3	73 15 33.2	3 19.2	− 34 25 13.2	+ 13.9	Y.	Close double.
61	. .	. .	. .	+ 0 14.7	68 55 23.3	2 35.3	− 30 4 19.4	+ 12.9	Y.	
62	. .	. .	. .	+ 0 28.4	73 5 38.6	3 17.6	− 34 15 16.9	+ 13.0	Y.	
63	. .	. .	35.5	− 1 19.3	78 48 49.0	4 58.8	− 40 0 8.6	+ 12.9	Y.	
64	. .	. .	. .	− 0 45.5	S. 74 24 24.0	3 34.6	− 35 34 19.4	+ 12.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Mar. 20	1	Rumker 3203	7.3	3	III–VII.	302 30 1.3	14.3	9.1	14.2	10.2	4.1	8.87	33.787	—0.022	33.762
	2	Anon. $10^{h} 28^{m} 43^{s}$	7.0	3	III–VII.	356 15 1.1	14.7	9.6	15.5	7.5	0.4	8.13	25.948	. .	25.933
	3	Nadir	. .	.	. .	100 0 2.1	17.8	8.6	18.9	11.6	7.1	11.02	30.253	. .	. .
25	4	O. Arg. S. 7107	8.0	3	V, VII, IX.	347 50 2.5	14.9	9.1	13.5	8.2	4.2	8.73	31.858	—0.023	31.860
	5	O. Arg. S. 7444	. .	3	III–VII.	349 5 0.5	13.2	7.5	13.2	8.1	0.9	7.23	30.103	. .	30.086
	6	O. Arg. S. 7505	8.0	3	III–VII.	“ “ “	“	“	“	“	“	“	29.636	. .	29.619
	7	ρ Argûs	. .	3	III–VII.	342 50 0.0	12.9	6.3	10.6	7.7	0.1	6.27	34.289	. .	34.270
	8	Anon. $8^{h} 17^{m} 14^{s}$	6.5	3	III–VII.	348 10 2.8	15.3	11.1	14.8	9.3	4.7	9.67	33.935	. .	33.917
	9	O. Arg. S. 8620	7.7	3	III–VII.	348 45 2.8	15.1	9.5	14.8	9.5	3.3	9.17	30.445	. .	30.428
	10	B. A. C. 2910	7.0	3	III–VII.	344 50 1.2	12.2	7.7	10.2	7.8	1.7	6.80	30.900	. .	30.882
	11	ρ Ursæ Majoris	5.5	3	IV–VI.	250 45 0.5	12.3	8.6	15.8	11.0	6.3	9.08	28.346	. .	28.312
	12	26 Hydræ	. .	3	III–VII.	330 20 1.4	15.1	7.2	13.5	8.4	2.7	8.05	33.537	. .	33.516
	13	O. Arg. N. 9989	8.0	3	IV–VI.	248 40 2.2	13.1	11.8	19.1	12.2	8.9	11.22	28.025	. .	27.990
	14	Lacaille 4021	. .	3	V, VII, IX.	351 30 2.9	16.4	10.8	17.4	10.9	4.9	10.55	31.578	. .	31.580
	15	A Leonis	5.0	3	III–VII.	308 15 1.5	13.3	6.9	12.6	10.2	5.8	8.38	29.928	. .	29.903
	16	O. Arg. S. 10471	6.0	3	IV–VI.	342 0 4.8	18.0	13.2	17.9	12.7	5.9	12.08	26.160	. .	26.139
	17	Lalande 20114	6.5	3	III–VII.	“ “ “	“	“	“	“	“	“	39.183	. .	39.166
	18	24 Sextantis	6.5	3	V, VII, IX.	319 5 2.2	14.7	7.5	12.1	9.8	4.3	8.43	25.160	. .	25.149
	19	Lacaille 4364	. .	3	III–VII.	345 50 1.2	13.7	7.7	12.8	8.4	1.3	7.52	29.065	. .	29.047
	20	B. A. C. 3677	. .	3	III–VII.	350 50 2.2	15.6	10.3	18.0	10.5	3.5	10.02	24.331	. .	24.314
	21	Weisse X, 803	8.0	3	III–VII.	306 50 0.8	13.2	6.2	12.3	9.8	4.2	7.75	29.490	. .	29.465
	22	p^{2} Leonis	6.0	3	III–VII.	318 15 2.2	14.0	7.6	13.6	10.2	3.9	8.58	37.882	. .	37.859
	23	Anon. $10^{h} 57^{m} 23^{s}$	8.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	34.459	. .	34.453
	24	Nadir	. .	.	. .	100 0 2.1	16.8	6.9	17.9	10.7	7.7	10.35	30.231	. .	. .
29	25	Lacaille 2870	7.0	3	III–VII.	343 55 1.2	12.3	5.6	9.8	8.8	2.9	6.77	30.932	—0.070	30.867
	26	Anon. $7^{h} 44^{m} 15^{s}$	7.5	3	IV–VI.	318 25 1.5	11.8	6.7	8.4	9.9	5.5	7.30	23.324	. .	23.254
	27	Anon. $7^{h} 45^{m} 37^{s}$	9.0	2	IV, VI.	“ “ “	“	“	“	“	“	“	29.030	. .	28.960
	28	Anon. $7^{h} 46^{m} 23^{s}$	9.0	2	VI, VIII.	“ “ “	“	“	“	“	“	“	32.878	. .	32.820
	29	Weisse (2) VIII, 382	8.0	3	III–VII.	278 35 3.0	14.5	8.1	12.2	13.4	10.0	10.20	30.865	. .	30.787
	30	Anon. $8^{h} 25^{m} 49^{s}$	8.0	3	IV–VI.	350 10 1.2	11.3	7.5	11.9	8.2	2.8	7.15	30.870	. .	30.802
	31	Lacaille 3434	6.0	5	I–IX.	352 10 2.3	13.8	7.8	13.0	9.1	3.4	8.23	33.348	. .	33.295
	32	Lacaille 3552	7.5	3	III–VII.	348 45 0.5	12.0	7.1	11.6	8.2	1.4	6.80	25.571	. .	25.507
	33	Anon. $8^{h} 45^{m} 58^{s}$	8.5	2	VI, VIII.	“ “ “	“	“	“	“	“	“	32.826	. .	32.778
	34	Weisse (2) VIII, 1352	7.3	3	III–VII.	295 45 2.5	12.6	5.8	10.3	12.6	6.9	8.45	28.367	. .	28.293
	35	O. Arg. S. 9539	8.5	3	III–VII.	348 15 1.8	14.7	9.8	14.4	9.8	5.2	9.28	28.418	. .	28.353
	36	O. Arg. S. 9600	8.2	3	III–VII.	345 55 1.7	11.7	7.7	9.5	8.3	2.2	6.85	31.393	. .	31.328
	37	ε Antliæ	5.0	3	IV–VI.	354 15 4.1	16.1	11.9	15.4	12.7	6.5	11.12	33.271	. .	33.203
	38	Anon. $9^{h} 25^{m} 49^{s}$	7.0	3	III–VII.	“ “ “	“	“	“	“	“	“	36.551	. .	36.488
	39	Anon. $9^{h} 30^{m} 49^{s}$	7.7	3	IV–VI.	“ “ “	“	“	“	“	“	“	25.305	. .	25.237
	40	Anon. $9^{h} 35^{m} 13^{s}$	8.5	3	III–VII.	“ “ “	“	“	“	“	“	“	38.750	. .	38.687
	41	Weisse (2) IX, 817	8.5	3	III–VII.	291 10 2.0	12.6	7.7	10.7	10.6	6.4	8.33	34.165	. .	34.090
	42	Weisse (2) IX, 980	7.2	3	IV–VI.	303 30 2.7	12.0	7.0	10.1	11.0	5.8	8.10	25.689	. .	25.618
	43	Lacaille 4107	7.0	3	IV–VI.	357 40 3.1	16.7	10.8	17.9	10.8	oblit.	11.26	32.212	. .	32.144
	44	Lacaille 4162	6.7	3	III–VII.	353 15 0.5	13.4	7.8	14.3	9.9	3.5	8.23	33.507	. .	33.444
	45	Lalande 19981	8.2	3	III–VII.	306 55 0.6	11.2	4.8	7.8	8.4	4.9	6.28	25.945	. .	25.877
	46	Weisse X, 315	6.7	3	III–VII.	314 14 59.2	69.1	63.6	66.7	67.9	62.0	64.75	25.357	. .	25.286
	47	Weisse X, 456	9.0	3	III–VII.	322 30 3.2	14.2	8.1	11.7	11.4	5.8	9.07	31.758	. .	31.689
	48	Weisse X, 600	7.5	3	III–VII.	304 15 2.8	13.2	7.9	12.7	13.0	7.9	9.58	32.524	. .	32.452
	49	Weisse X, 608	8.8	2	VII, IX.	“ “ “	“	“	“	“	“	“	28.055	. .	27.994
	50	Lacaille 4503	7.7	3	III–VII.	358 30 2.1	14.6	10.0	16.1	10.2	4.1	9.52	25.234	. .	25.172
	51	Anon. $10^{h} 53^{m} 0^{s}$	7.5	3	III–VII.	353 0 1.9	14.1	7.6	13.1	9.6	4.0	8.38	27.566	. .	27.501
	52	Lacaille 4570	6.5	2	VII, IX.	345 40 4.0	15.8	10.2	13.8	11.5	5.2	10.08	28.888	. .	28.851
	53	Anon. $11^{h} 8^{m} 26^{s}$	7.8	3	III–VII.	345 30 2.7	14.2	8.6	12.7	10.4	4.1	8.78	34.700	. .	34.635
	54	O. Arg. S. 11374	8.2	3	III–VII.	344 10 0.8	13.4	6.9	12.0	8.8	2.5	7.40	29.044	. .	28.979
	55	O. Arg. S. 11410	7.0	3	III–VII.	342 0 5.4	19.1	13.7	17.8	14.3	7.1	12.90	33.238	. .	33.172
	56	Anon. $11^{h} 30^{m} 53^{s}$	8.0	3	III–VII.	353 10 1.8	14.8	9.2	15.6	10.6	5.2	9.53	27.149	. .	27.086
	57	Weisse XI, 643	8.5	3	III–VII.	326 15 4.2	15.7	9.8	13.8	13.6	6.6	10.62	31.079	. .	31.010
	58	B. A. C. 4009	5.8	3	III–VII.	348 55 0.7	14.7	8.3	15.2	9.4	2.7	8.50	25.907	. .	25.843
	59	O. Arg. S. 11850	9.0	3	IV–VI.	344 30 2.6	16.6	10.0	14.8	11.5	4.5	10.00	29.963		29.894
	60	Nadir	. .	.	. .	100 0 0.9	16.4	6.0	16.2	10.4	8.1	9.67	30.258	. .	. .
Apr. 5	61	Anon. $10^{h} 51^{m} 17^{s}$	8.0	3	III–VII.	0 10 1.9	16.6	10.6	17.5	9.2	3.4	9.87	32.048	—0.098	31.958
	62	Lacaille 4535	7.0	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	32.344	. .	32.276
	63	Weisse XI, 98	9.0	3	III–VII.	297 35 4.1	17.1	10.2	oblit.	12.3	7.5	8.16	29.149	. .	29.047
	64	Anon. $11^{h} 16^{m} 38^{s}$	7.2	3	III–VII.	357 15 3.1	17.8	13.5	20.1	11.7	oblit.	11.96	34.114	. .	34.024
	65	Lacaille 4760	6.5	3	III–VII.	356 35 3.1	17.3	12.2	19.6	10.4	4.7	11.22	31.991	. .	31.900
	66	Lacaille 4792	6.0	3	III–VII.	353 45 1.6	16.1	10.8	18.7	10.8	4.1	10.35	32.209		32.118

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 57.9	S. 22 28 10.9	25.1	+ 16 25 3.2	+ 5.1	Y.	
2	30.350	43.1	35.1	+ 2 7.2	76 17 15.4	4 4.6	− 37 27 40.7	+ 11.5	Y.	
3										
4	30.346	47.3	44.2	− 0 58.2	67 49 10.5	2 25.4	− 28 57 56.6	+ 18.2	Y.	
5	. .	. .	. .	− 0 2.7	69 5 4.5	2 35.1	− 30 14 0.4	+ 18.2	Y.	
6	. .	. .	43.2	+ 0 11.9	69 5 19.1	2 35.2	− 30 14 15.0	+ 18.2	Y.	
7	. .	. .	. .	− 2 13.9	62 47 52.4	1 56.0	− 23 56 9.2	+ 16.4	Y.	
8	30.360	46.2	42.0	− 2 2.8	68 8 6.9	2 28.3	− 29 16 56.0	+ 17.0	Y.	
9	. .	. .	. .	− 0 13.4	68 44 55.8	2 32.3	− 29 53 48.8	+ 16.8	Y.	
10	. .	. .	. .	− 0 27.6	S. 64 49 39.2	2 7.0	− 25 58 6.9	+ 15.9	Y.	
11	30.352	45.4	41.3	+ 0 52.8	N. 29 13 58.1	33.6	+ 68 8 10.9	− 9.5	Y.	
12	. .	. .	. .	− 1 50.2	S. 50 18 17.8	1 12.3	− 11 25 50.9	+ 11.7	Y.	
13	30.360	45.2	40.2	+ 1 2.9	N. 31 18 45.9	36.6	+ 70 13 1.7	− 8.8	Y.	
14	. .	. .	. .	− 0 49.5	S. 71 29 21.0	2 58.0	− 32 38 39.8	+ 13.9	Y.	Faint.
15	. .	. .	39.6	+ 0 3.0	28 15 11.4	32.4	+ 10 37 55.5	+ 6.2	Y.	
16	. .	. .	. .	+ 2 0.8	62 2 12.9	1 53.1	− 23 10 26.7	+ 11.7	Y.	
17	. .	. .	. .	− 4 47.7	61 55 24.4	1 52.6	− 23 3 37.8	+ 11.4	Y.	
18	30.354	44.5	39.0	+ 2 31.8	39 7 40.2	49.0	− 0 14 50.0	+ 8.1	Y.	
19	. .	. .	. .	+ 0 29.8	65 50 37.4	2 13.8	− 26 59 12.0	+ 11.0	Y.	
20	. .	. .	. .	+ 2 57.8	70 53 7.9	2 52.7	− 32 2 21.3	+ 11.0	Y.	
21	30.354	44.1	37.8	+ 0 16.8	26 50 24.5	30.6	+ 12 2 44.2	+ 5.8	Y.	
22	. .	. .	. .	− 4 6.6	38 11 2.0	47.5	+ 0 41 49.7	+ 7.4	Y.	
23	. .	. .	. .	− 2 19.6	38 12 49.0	47.6	+ 0 40 2.7	+ 7.4	Y.	Night cloudy.
24	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
25	30.010	51.3	49.7	− 0 27.2	63 54 39.6	1 58.6	− 25 2 58.9	+ 17.4	Y.	
26	. .	. .	. .	+ 3 30.9	38 28 38.2	46.4	+ 0 24 14.6	+ 10.1	Y.	
27	. .	. .	. .	+ 0 32.6	38 25 39.9	46.3	+ 0 27 13.1	+ 10.1	Y.	Preceded 2 or 3 seconds by star to northward.
28	. .	. .	. .	− 1 28.4	S. 38 23 38.9	46.3	+ 0 29 14.1	+ 10.1	Y.	
29	30.020	50.9	46.2	− 0 24.7	N. 25 14.5	1.5	+ 40 18 55.2	− 3.2	Y.	
30	. .	. .	. .	− 0 25.1	S. 70 9 42.0	2 41.6	− 31 18 44.3	+ 17.3	Y.	
31	. .	. .	46.4	− 1 43.3	72 8 25.0	3 0.6	− 33 17 46.3	+ 17.4	Y.	
32	. .	. .	. .	+ 2 20.6	68 47 27.4	2 30.6	− 29 56 18.8	+ 16.4	Y.	
33	30.034	50.2	45.1	− 1 27.1	68 43 39.7	2 30.2	− 29 52 30.7	+ 16.3	Y.	
34	. .	. .	. .	+ 0 53.4	15 46 1.9	16.6	+ 23 7 20.7	+ 2.5	Y.	
35	. .	. .	. .	+ 0 51.6	68 16 0.8	2 26.6	− 29 24 48.2	+ 15.3	.	
36	30.028	45.9	45.8	− 0 41.6	65 54 25.3	2 10.8	− 27 2 56.8	+ 14.8	.	
37	. .	. .	. .	− 1 40.4	74 13 30.7	3 25.4	− 35 23 16.9	+ 15.6	.	
38	. .	. .	. .	− 3 23.5	74 11 47.6	3 25.6	− 35 21 33.9	+ 15.5	.	
39	. .	. .	. .	+ 2 29.0	74 17 40.1	3 26.9	− 35 27 27.8	+ 15.3	.	
40	. .	. .	. .	− 4 32.6	74 10 38.5	3 25.4	− 35 20 24.7	+ 15.1	Y.	
41	30.030	49.1	43.8	− 2 8.2	11 8 0.1	11.6	+ 27 45 27.5	+ 1.5	Y.	
42	. .	. .	. .	+ 2 17.1	23 32 25.2	25.8	+ 15 20 48.3	+ 4.8	Y.	
43	. .	. .	. .	− 1 7.2	77 39 4.1	4 24.1	− 38 49 48.9	+ 14.4	Y.	Corr. −0″.86 applied to mean of A, B, C, D.
44	30.040	48.7	42.3	− 1 48.0	73 13 20.3	3 14.2	− 34 22 55.2	+ 13.6	Y.	
45	. .	. .	. .	+ 2 9.0	26 57 15.3	30.2	+ 11 55 53.8	+ 5.6	Y.	
46	. .	. .	41.8	+ 2 27.5	34 17 32.2	40.4	+ 4 35 26.6	+ 7.1	Y.	
47	. .	. .	. .	− 0 52.9	42 29 16.2	54.3	− 3 36 31.2	+ 8.6	Y.	
48	. .	. .	. .	− 1 16.8	24 13 52.7	26.7	+ 14 39 19.8	+ 5.1	Y.	
49	30.040	48.0	41.4	+ 1 2.8	24 16 12.4	26.8	+ 14 37 0.1	+ 5.1	Y.	
50	. .	. .	. .	+ 2 31.0	78 32 40.6	4 45.4	− 39 43 46.7	+ 11.4	Y.	
51	. .	. .	. .	+ 1 18.2	73 1 26.6	3 12.3	− 34 10 59.7	+ 10.9	Y.	
52	30.042	47.3	41.0	+ 0 36.0	65 40 46.0	2 10.8	− 26 49 17.6	+ 10.2	Y.	
53	. .	. .	. .	− 2 25.3	65 27 43.5	2 9.5	− 26 36 13.7	+ 9.7	Y.	
54	. .	. .	. .	+ 0 32.0	64 10 39.4	2 2.2	− 25 19 2.3	+ 9.1	Y.	
55	30.050	47.0	41.3	− 1 39.4	61 58 33.5	1 51.2	− 23 6 45.4	+ 8.9	Y.	
56	. .	. .	. .	+ 1 31.2	73 11 40.7	3 14.4	− 34 21 15.9	+ 8.7	Y.	
57	. .	. .	. .	− 0 31.6	46 14 39.0	1 2.0	− 7 22 1.8	+ 7.4	Y.	
58	. .	. .	. .	+ 2 10.1	68 57 18.6	2 33.5	− 30 6 12.8	+ 7.9	Y.	
59	30.052	46.3	40.0	+ 0 3.3	64 30 13.3	2 4.3	− 25 38 38.4	+ 7.4	Y.	Faint.
60	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
61	. .	. .	. .	− 1 1.3	80 9 8.5	5 34.8	− 41 21 4.0	+ 12.7	Y.	
62	29.890	43.5	38.3	− 1 11.3	80 8 58.6	5 34.6	− 41 20 54.0	+ 12.6	Y.	
63	. .	. .	. .	+ 0 29.8	17 35 38.0	18.9	+ 21 17 42.4	+ 3.2	Y.	Corr. −2″.09 applied to mean of A, B, E, F.
64	. .	. .	37.7	− 2 6.1	77 13 5.8	4 16.8	− 38 23 43.4	+ 11.0	Y.	Corr. −1″.66 applied to mean of A, B, C, D.
65	. .	. .	. .	− 0 59.5	76 34 11.7	4 4.6	− 37 44 37.1	+ 10.6	Y.	
66	29.884	42.8	37.4	− 1 6.3	S. 73 44 4.0	3 21.1	− 34 53 45.9	+ 10.5	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Apr. 5	1	O. Arg. S. 11656	7.3	2	I, IX.	344	5	3.9	17.6	12.6	17.9	12.1	5.1	11.53	28.248	—0.098	28.173
	2	Anon. $11^h\ 41^m\ 4^s$	8.5	3	IV–VI.	"	"	"	"	"	"	"	"	"	25.528	. .	25.431
	3	Anon. $11^h\ 41^m\ 42^s$	8.3	1	IX.	"	"	"	"	"	"	"	"	"	26.662	. .	26.610
	4	B. A. C. 4034	5.8	3	V, VII, IX.	357	50	0.8	5.7	10.6	17.8	9.3	oblit.	7.06	35.633	. .	35.564
	5	Anon. $12^h\ 0^m\ 3^s$	8.6	2	I, IX.	349	10	1.2	16.4	9.9	17.2	9.7	2.7	9.52	31.550	. .	31.480
	6	Anon. $12^h\ 0^m\ 13^s$	9.0	3	III–VII.	"	"	"	"	"	"	"	"	"	33.589	. .	33.497
	7	Lacaille 5097	6.7	3	III–VII.	350	45	0.6	13.9	8.9	15.9	8.5	0.4	8.03	34.299	. .	34.207
	8	O. Arg. S. 12165	8.0	3	III–VII.	345	50	0.8	13.7	8.2	13.3	7.6	1.3	7.48	29.471	. .	29.378
	9	Lacaille 5188	8.0	2	VII, IX.	349	45	1.6	15.1	10.2	16.3	8.7	2.7	9.10	28.233	. .	28.166
	10	Anon. $12^h\ 37^m\ 11^s$	8.0	3	III–VII.	353	30	2.4	17.6	12.7	18.8	10.9	5.2	11.27	25.657	. .	25.566
	11	O. Arg. S. 12460	8.5	3	IV–VI.	344	0	1.9	16.5	9.7	17.4	10.1	4.5	10.02	31.188	. .	31.091
	12	Anon. $12^h\ 45^m\ 13^s$	9.0	3	III–VII.	"	"	"	"	"	"	"	"	"	32.116	. .	32.023
	13	Lacaille 5340	. .	3	V, VII, IX.	350	25	1.1	15.4	10.4	17.5	8.9	2.4	9.28	27.040	. .	26.967
	14	Nadir	. .	.	. . .	100	0	1.9	19.2	8.9	18.9	12.1	8.1	11.52	30.347	. .	. .
8	15	B. A. C. 2898	. .	3	III–VII.	345	15	1.1	8.7	4.5	4.8	7.2	2.1	4.73	28.883	—0.075	28.813
	16	B. A. C. 3015	7.0	3	III–VII.	301	0	1.3	9.8	4.2	4.9	9.2	6.0	5.90	26.682	. .	26.604
	17	ε Antliæ	4.5	3	III–VII.	354	15	0.2	10.4	5.2	7.4	7.3	3.4	5.65	32.938	. .	32.870
	18	Anon. $9^h\ 25^m\ 48^s$	. .	3	III–VII.	"	"	"	"	"	"	"	"	"	36.289	. .	36.221
	19	Anon. $9^h\ 30^m\ 49^s$	. .	3	IV–VI.	"	"	"	"	"	"	"	"	"	24.907	. .	24.834
	20	Anon. $9^h\ 35^m\ 45^s$	. .	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	26.373	. .	26.325
	21	Anon. $9^h\ 42^m\ 11^s$	. .	3	III–VII.	356	25	0.0	10.0	4.7	8.0	6.2	1.6	5.08	29.698	. .	29.580
	22	21 Sextantis	6.5	3	III–VII.	326	15	3.9	11.4	6.1	8.2	11.2	6.1	7.82	32.700	. .	32.626
	23	Lacaille 4266	7.0	3	III–VII.	347	45	0.0	9.2	5.1	7.4	6.6	2.6	5.15	28.931	. .	28.861
	24	Anon. $10^h\ 22^m\ 26^s$	7.5	3	III–VII.	354	25	0.2	9.7	5.2	7.9	7.2	3.0	5.53	32.474	. .	32.406
	25	Anon. $10^h\ 27^m\ 38^s$	7.5	3	IV–VI.	354	15	2.8	13.1	8.1	10.9	10.6	5.7	8.53	31.649	. .	31.576
	26	Lacaille 4399	5.6	3	III–VII.	353	55	0.0	9.6	5.2	8.4	7.5	2.5	5.53	31.396	. .	31.328
	27	Lacaille 4407	6.0	3	V, VII, IX.	"	"	"	"	"	"	"	"	"	32.734	. .	32.686
	28	Lacaille 4481	7.5	3	III–VII.	0	30	1.8	12.6	7.9	13.1	9.4	5.6	8.40	31.829	. .	31.762
	29	B. A. C. 3755	5.5	3	III–VII.	355	15	1.3	11.8	6.1	9.3	7.2	1.9	6.27	27.168	. .	27.100
	30	Lacaille 4576	7.5	3	III–VII.	358	25	1.2	12.2	7.7	12.1	8.9	3.0	7.52	28.850	. .	28.783
	31	Lacaille 4642	6.0	3	III–VII.	350	25	2.8	12.0	7.9	11.9	9.3	5.3	8.20	30.668	. .	30.599
	32	Weisse XI, 211	8.0	3	III–VII.	332	55	1.4	10.5	6.1	8.4	8.2	3.1	6.28	28.484	. .	28.411
	33	O. Arg. S. 11374	8.3	3	III–VII.	344	10	2.1	11.9	6.8	9.4	9.9	5.1	7.53	28.942	. .	28.872
	34	Weisse XI, 421	8.8	3	III–VII.	325	45	4.2	11.9	6.9	9.0	11.9	6.2	8.35	27.005	. .	26.931
	35	O. Arg. S. 11531	8.5	2	III, V.	343	45	3.2	13.1	6.4	10.7	10.2	5.6	8.20	32.106	. .	32.028
	36	Anon. $11^h\ 31^m\ 51^s$	9.2	1	V.	"	"	"	"	"	"	"	"	"	28.692	. .	28.662
	37	Lacaille 4877	7.0	3	III–VII.	358	35	0.0	11.4	6.8	11.9	8.3	2.4	6.80	26.777	. .	26.710
	38	B. A. C. 3988	5.5	3	IV–VI.	"	"	"	"	"	"	"	"	"	27.070	. .	26.997
	39	Weisse XI, 908	8.5	3	III–VII.	310	15	3.1	12.1	7.1	8.2	11.7	6.3	8.08	34.011	. .	33.935
	40	Weisse XI, 921	7.5	2	VII, IX.	"	"	"	"	"	"	"	"	"	30.662	. .	30.599
	41	O. Arg. S. 11982	6.5	3	III–VII.	344	5	3.7	15.2	9.7	12.9	12.5	7.9	10.32	30.637	. .	30.567
	42	Anon. $12^h\ 12^m\ 42^s$	8.0	3	III–VII.	344	15	0.5	11.1	5.9	8.0	7.8	3.5	6.13	30.901	. .	30.831
	43	B. A. C. 4192	5.5	3	III–VII.	350	59	59.4	70.2	64.8	69.1	66.6	60.9	65.17	34.955	. .	34.886
	44	Nadir	. .	.	. . .	100	0	4.4	16.8	7.8	16.3	13.1	12.0	11.73	30.331	. .	. .
9	45	B. A. C. 3553	. .	3	V, VII, IX.	321	50	6.7	16.6	10.7	15.1	14.1	11.9	12.52	26.344	—0.069	26.286
	46	Lacaille 4365	. .	3	V, VII, IX.	351	25	4.2	15.7	10.7	14.1	10.9	8.5	10.68	26.638	. .	26.594
	47	42 Leonis Minoris	. .	3	III–VII.	287	30	3.4	12.9	6.5	11.3	11.5	9.4	9.17	27.387	. .	27.312
	48	55 Leonis	. .	3	III–VII.	317	25	1.2	10.5	3.1	15.7	7.2	4.8	7.08	25.868	. .	25.799
	49	ξ Ursæ Majoris	. .	3	III–VII.	286	40	2.0	10.4	4.8	9.2	9.3	8.7	7.40	34.309	. .	34.234
	50	Weisse XI, 365	. .	3	III–VII.	315	25	1.8	11.3	5.3	8.8	10.9	8.2	7.72	34.157	. .	34.087
	51	B. A. C. 3955	. .	3	III–VII.	320	35	2.4	8.8	5.5	7.5	8.3	4.9	6.23	28.449	. .	28.380
	52	B. A. C. 4032	. .	3	III–VII.	346	35	4.5	12.9	9.2	12.4	9.2	7.6	9.30	26.991	. .	26.927
	53	O. Arg. S. 11908	. .	3	V, VII, IX.	341	55	3.1	11.9	8.9	11.0	9.9	5.8	8.43	31.046	. .	30.998
	54	12 Virginis	. .	3	III–VII.	307	55	1.1	10.3	4.0	6.9	7.4	6.1	5.97	32.046	. .	31.975
	55	O. Arg. S. 12116	. .	3	IV–VI.	342	34	57.4	66.1	63.2	64.3	64.2	59.3	62.42	34.344	. .	34.276
	56	B. A. C. 4214	. .	3	III–VII.	341	50	3.9	13.8	9.8	11.7	10.2	6.1	9.25	29.142	. .	29.077
	57	Weisse (2) XII, 636	. .	3	III–VII.	285	10	1.8	9.3	6.0	9.1	9.4	8.1	7.28	32.116	. .	32.041
	58	d^2 Virginis	. .	3	III–VII.	310	30	4.8	14.0	8.8	10.1	12.2	8.4	9.72	30.231	. .	30.161
	59	O. Arg. S. 12573	. .	3	III–VII.	342	5	1.2	12.4	7.8	10.4	8.9	4.2	7.48	31.045	. .	30.980
	60	58 Virginis	. .	3	III–VII.	328	45	2.2	13.3	7.8	9.8	8.8	5.1	7.83	31.760	. .	31.693
	61	Nadir	. .	.	. . .	100	0	2.6	13.5	5.5	13.0	9.8	9.2	8.93	30.232	. .	. .
12	62	c^2 Cancri	. .	3	III–VII.	308	50	3.4	8.5	3.1	4.9	8.7	7.1	5.95	27.160	—0.108	27.050
	63	Anon. $8^h\ 50^m\ 15^s$	9.2	3	III–VII.	348	55	2.6	11.1	6.3	9.4	7.2	4.5	6.85	33.776	. .	33.674
	64	Anon. $8^h\ 55^m\ 58^s$	8.3	3	III–VII.	349	5	1.5	9.4	6.1	8.4	6.4	3.1	5.82	33.388	. .	33.286
	65	O. Arg. S. 9522	7.7	3	III–VII.	345	30	3.7	11.4	7.5	7.3	8.5	5.1	7.25	28.044	—0.108	27.941

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 57.2	S. 64 6 8.7	2 2.2	— 25 14 31.6	+ 9.1	Y.	
2	. .	. .	. .	+ 2 22.9	64 7 34.5	2 2.3	— 25 15 57.5	+ 9.1	Y.	
3	. .	. .	. .	+ 1 46.1	64 6 57.6	2 2.2	— 25 15 20.6	+ 9.0	Y.	
4	29.884	42.5	37.0	— 2 54.8	77 47 12.2	4 29.1	— 38 58 2.1	+ 9.0	Y.	Corr. —1″.66 applied to mean of A, B, C, D.
5	. .	. .	. .	— 0 46.4	69 9 23.1	2 35.4	— 30 18 19.3	+ 8.3	Y.	
6	. .	. .	. .	— 1 49.6	69 8 19.9	2 35.3	— 30 17 15.9	+ 8.3	Y.	
7	. .	. .	. .	— 2 12.1	70 42 55.9	2 48.9	— 31 52 5.5	+ 7.6	Y.	
8	. .	. .	. .	+ 0 19.5	65 50 27.0	2 12.2	— 26 58 59.9	+ 7.2	Y.	
9	29.880	42.1	36.8	+ 0 57.4	69 46 6.5	2 40.5	— 30 55 7.8	+ 9.9	Y.	
10	. .	. .	. .	+ 2 18.7	73 32 30.0	3 19.4	— 34 42 10.1	+ 6.1	Y.	
11	. .	. .	. .	— 0 34.2	63 59 35.8	2 1.7	— 25 7 58.3	+ 6.1	Y.	
12	. .	. .	. .	— 1 3.4	63 59 6.6	2 1.7	— 25 7 29.1	+ 6.0	Y.	
13	29.882	41.9	36.4	+ 1 34.9	70 26 44.2	2 46.6	— 31 35 51.5	+ 8.4	Y.	
14	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
15	30.064	57.5	55.5	+ 0 37.2	65 15 41.9	2 4.6	— 26 24 7.3	+ 16.9	Y.	
16	. .	. .	. .	+ 1 46.3	21 1 52.2	22.2	+ 17 51 24.8	+ 3.7	Y.	
17	. .	. .	. .	— 1 29.9	74 13 35.7	3 22.9	— 35 23 19.3	+ 17.0	Y.	
18	30.076	56.8	52.3	— 3 15.1	74 11 50.5	3 22.5	— 35 21 33.8	+ 16.9	Y.	
19	. .	. .	. .	+ 2 41.6	74 17 47.2	3 23.9	— 35 27 31.9	+ 16.7	Y.	
20	. .	. .	. .	+ 1 55.0	74 17 0.6	3 23.9	— 35 26 45.3	+ 16.5	Y.	
21	. .	. .	. .	+ 0 13.2	76 25 18.2	3 56.6	— 37 35 35.5	+ 16.5	Y.	
22	30.084	56.2	51.1	— 1 22.3	46 13 45.5	1 0.8	— 7 21 7.0	+ 10.0	Y.	
23	. .	. .	. .	+ 0 35.7	67 45 40.8	2 21.8	— 28 54 23.3	+ 13.8	Y.	
24	. .	. .	. .	— 1 15.4	74 23 50.1	3 26.1	— 35 33 37.0	+ 14.4	Y.	
25	30.084	56.0	49.6	— 0 49.4	74 14 19.2	3 24.2	— 35 24 4.1	+ 14.1	Y.	
26	. .	. .	. .	— 0 41.6	73 54 23.9	3 19.9	— 35 4 4.6	+ 13.7	Y.	
27	. .	. .	. .	— 1 24.2	73 53 41.3	3 19.8	— 35 3 21.9	+ 13.7	Y.	
28	. .	. .	. .	— 0 55.2	80 29 13.2	5 35.9	— 41 41 9.8	+ 13.8	Y.	
29	. .	. .	49.4	+ 1 30.8	75 16 37.0	3 39.0	— 36 26 36.8	+ 13.0	Y.	
30	. .	. .	. .	+ 0 38.1	78 25 45.6	4 38.3	— 39 36 44.6	+ 12.8	Y.	
31	30.084	55.2	49.1	— 0 18.8	70 34 49.4	2 44.5	— 31 43 54.7	+ 11.8	Y.	
32	. .	. .	. .	+ 0 49.8	52 55 56.0	1 17.4	— 14 3 34.2	+ 9.5	Y.	
33	. .	. .	. .	+ 0 35.3	64 10 42.8	2 0.4	— 25 19 4.0	+ 10.6	Y.	
34	. .	. .	. .	+ 1 36.0	45 46 44.4	1 0.2	— 6 54 5.3	+ 8.1	Y.	
35	. .	. .	. .	— 1 3.5	63 44 4.7	1 58.3	— 24 52 23.7	+ 10.0	Y.	
36	. .	. .	. .	+ 0 41.9	63 45 50.1	1 58.4	— 24 54 9.3	+ 10.0	Y.	
37	. .	. .	. .	+ 1 42.9	78 36 49.7	4 43.4	— 39 47 53.9	+ 10.4	Y.	
38	. .	. .	. .	+ 1 34.0	78 36 40.8	4 43.6	— 39 47 45.1	+ 10.3	Y.	
39	. .	. .	. .	— 2 3.3	30 13 4.7	34.2	+ 8 40 0.3	+ 5.5	Y.	
40	30.082	54.6	47.1	— 0 18.8	30 14 49.3	34.2	+ 8 38 15.7	+ 5.5	Y.	
41	. .	. .	. .	— 0 17.8	64 4 52.6	2 0.4	— 25 13 13.7	+ 8.4	Y.	
42	. .	. .	. .	— 0 26.0	64 14 40.1	2 1.3	— 25 23 2.1	+ 8.1	Y.	
43	30.076	54.2	46.6	— 2 33.2	70 57 32.0	2 48.8	— 32 6 41.5	+ 7.8	Y.	
44	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
45	30.056	57.8	54.0	+ 1 56.2	41 52 8.7	51.9	— 2 59 21.4	+ 8.9	Y.	
46	. .	. .	. .	+ 1 46.6	71 26 57.3	2 50.9	— 32 36 8.9	+ 13.8	Y.	
47	. .	. .	. .	+ 1 24.1	7 31 33.3	7.7	+ 31 21 58.3	+ 0.1	Y.	
48	. .	. .	. .	+ 2 11.4	37 27 18.5	44.4	+ 1 25 36.3	+ 7.4	Y.	
49	30.056	57.1	52.9	— 2 13.0	6 37 54.6	6.8	+ 32 15 37.8	+ 0.5	Y.	
50	. .	. .	. .	— 2 8.1	35 22 59.6	41.2	+ 3 29 58.4	+ 6.4	Y.	
51	. .	. .	. .	+ 0 50.7	40 35 57.0	49.8	— 1 43 7.4	+ 7.3	Y.	
52	30.052	56.6	52.1	+ 1 36.2	66 36 45.5	2 13.5	— 27 45 19.7	+ 9.5	Y.	
53	. .	. .	. .	— 0 31.2	61 54 37.2	1 48.5	— 23 2 46.4	+ 8.7	Y.	
54	. .	. .	. .	— 1 1.9	27 54 4.1	30.8	+ 10 59 4.4	+ 5.1	Y.	
55	30.052	56.1	51.7	— 2 14.1	62 22 48.4	1 50.7	— 23 30 59.8	+ 8.6	Y.	
56	. .	. .	. .	+ 0 28.9	61 50 38.2	1 48.3	— 22 58 47.2	+ 7.7	Y.	
57	. .	. .	. .	— 1 3.9	5 9 3.3	5.2	+ 33 44 30.7	+ 2.3	Y.	
58	. .	. .	51.3	— 0 5.1	30 30 4.7	34.3	+ 8 23 0.3	+ 5.4	Y.	
59	. .	. .	. .	— 0 30.7	62 4 36.8	1 49.5	— 23 12 47.1	+ 6.3	Y.	Faint.
60	30.046	55.3	50.3	— 0 53.0	48 44 14.8	1 6.4	— 9 51 41.9	+ 5.8	Y.	
61	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
62	29.870	63.2	61.3	+ 1 32.3	28 51 38.3	31.2	+ 10 1 29.7	+ 6.1	Y.	
63	. .	. .	. .	— 1 55.2	68 53 11.7	2 25.9	— 30 1 58.3	+ 17.3	Y.	
64	. .	. .	. .	— 1 43.0	69 3 22.8	2 27.5	— 30 12 11.1	+ 17.2	Y.	Saw no other.
65	29.876	62.5	59.3	+ 1 4.4	S. 65 31 11.7	2 4.7	— 26 39 37.1	+ 16.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Apr. 12	1	Anon. $9^h\ 16^m\ 37^s$	8.0	2	VII, IX.	310 40 6.7	12.5	9.0	9.0	11.5	9.1	9.63	36.075	−0.108	35.974
	2	Lacaille 3874.	8.0	3	V, VII, IX.	351 35 5.7	14.3	10.6	13.0	11.7	8.4	10.62	29.155	. .	29.067
	3	O. Arg. S. 9914	9.0	3	IV–VI.	342 45 5.1	13.0	9.2	10.4	10.2	7.1	9.17	25.948	. .	25.841
	4	O. Arg. S. 9956	9.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	33.884	. .	33.792
	5	Anon. $9^h\ 41^m\ 14^s$	8.3	3	III–VII.	359 20 3.0	11.4	8.1	12.8	9.1	5.3	8.28	28.967	. .	28.867
	6	Anon. $9^h\ 47^m\ 26^s$	7.5	3	IV–VI.	358 10 2.8	12.8	8.8	12.4	8.3	4.8	8.32	24.794	. .	24.688
	7	Lacaille 4107.	7.0	3	IV–VI.	357 40 5.1	14.1	10.8	14.8	10.3	oblit.	10.57	31.756	. .	31.650
	8	Anon. $9^h\ 56^m\ 50^s$	7.0	2	VIII, IX.	" " "	"	"	"	"	"	"	39.646	. .	39.581
	9	Anon. $10^h\ 7^m\ 23^s$	8.0	3	III–VII.	358 50 4.0	11.8	9.2	13.2	8.3	5.1	8.60	32.036	. .	31.936
	10	O. Arg. S. 10533	7.3	3	IV–VI.	347 10 3.7	10.3	8.1	11.0	7.8	6.6	7.92	29.934	. .	29.828
	11	O. Arg. S. 10540.	7.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	29.754	. .	29.664
	12	O. Arg. S. 10684.	. .	3	III–VII.	343 25 2.6	10.8	5.7	8.9	7.6	4.9	6.75	29.532	. .	29.428
	13	Anon. $10^h\ 36^m\ 23^s$	. .	3	IV–VI.	354 35 2.2	11.4	7.8	8.8	6.7	3.9	6.80	30.962	. .	30.856
	14	Anon. $10^h\ 37^m\ 4^s$	8.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	20.950	. .	20.864
	15	O. Arg. S. 10944	8.0	3	III–VII.	344 45 2.7	9.5	6.8	7.2	7.1	4.6	6.32	29.800	. .	29.697
	16	Weisse (2) X, 1112	7.3	3	III–VII.	282 5 2.7	8.4	6.1	7.0	7.7	7.5	6.57	33.783	. .	33.668
	17	Anon. $11^h\ 6^m\ 22^s$	9.3	1	V.	250 40 4.0	10.5	8.9	14.1	11.2	12.1	10.13	31.438	. .	31.330
	18	Anon. $11^h\ 7^m\ 16^s$	9.0	1	V.	" " "	"	"	"	"	"	"	28.436	. .	28.328
	19	Anon. $11^h\ 8^m\ 8^s$	8.5	1	V.	" " "	"	"	"	"	"	"	32.018	. .	31.910
	20	B. A. C. 3875	5.0	3	III–VII.	354 20 3.0	11.8	7.8	10.8	7.7	5.1	7.70	34.828	. .	34.727
	21	Weisse (2) XI, 511	9.0	3	III–VII.	302 10 3.5	10.5	6.1	8.5	8.2	6.8	7.27	31.149	. .	31.038
	22	Weisse XI, 652	9.0	3	IV–VI.	311 5 4.4	13.5	7.1	9.8	9.8	8.0	8.77	27.694	. .	27.586
	23	Weisse XI, 662	7.3	2	VII, IX.	" " "	"	"	"	"	"	"	24.562	. .	24.461
	24	Weisse XI, 926	7.0	3	III–VII.	305 45 1.7	7.9	2.6	6.2	5.2	5.2	4.80	26.071	. .	25.961
	25	Dorpat 1604, (1st *).	7.8	2	I, IX.	329 55 4.1	11.3	9.0	10.7	8.4	7.1	8.43	20.156	. .	20.058
	26	Dorpat 1604, (3d *)	8.8	3	III–VII.	" " "	"	"	"	"	"	"	20.109	. .	20.003
	27	Anon. $12^h\ 13^m\ 37^s$	8.5	3	III–VII.	312 25 4.7	11.8	8.5	9.5	9.7	7.7	8.65	30.919	. .	30.810
	28	Anon. $12^h\ 22^m\ 0^s$	7.0	2	I, IX.	356 5 1.9	11.9	8.4	11.9	7.1	4.9	7.68	30.626	. .	30.555
	29	Anon. $12^h\ 22^m\ 3^s$	9.0	3	III–VII.	" " "	"	"	"	"	"	"	24.650	. .	24.549
	30	Lacaille 5214.	5.5	3	V, VII, IX.	358 0 2.5	12.4	8.9	13.9	7.7	4.4	8.30	33.220	. .	33.131
	31	Nadir	. .	.	. .	100 0 0.0	10.5	3.1	8.9	6.6	5.8	5.82	30.169	. .	. .
18	32	Lalande 21258	8.5	3	V, VII, IX.	274 45 1.8	11.8	7.6	15.1	9.2	8.1	8.93	36.057	−0.099	35.945
	33	Nadir	. .	.	. .	100 0 1.4	14.8	7.2	17.1	8.8	7.9	9.53	30.286	. .	. .
	34	Nadir	. .	.	. .	100 5 1.2	13.5	6.1	16.4	8.2	6.5	8.65	39.814	. .	. .
	35	Nadir	. .	.	. .	99 59 59.2	73.7	64.9	75.9	67.2	65.2	67.68	30.224	. .	. .
	36	Nadir	. .	.	. .	99 55 2.4	16.8	8.0	19.1	10.8	8.9	11.00	20.725	. .	. .
	37	Nadir	. .	.	. .	100 0 2.3	16.5	7.3	18.5	10.6	7.9	10.52	30.303	. .	. .
19	38	Lacaille 3780.	6.5	3	III–VII.	357 20 2.5	15.4	11.2	19.9	6.8	oblit.	10.16	31.103	−0.119	30.992
	39	Anon. $9^h\ 21^m\ 23^s$	6.5	3	III–VII.	352 5 0.8	14.2	8.9	17.2	6.2	2.1	8.23	31.173	. .	31.060
	40	Lacaille 3946.	6.0	3	V, VII, IX.	354 20 5.3	19.2	13.0	20.9	10.8	7.2	12.73	28.044	. .	27.947
	41	Weisse (2) IX, 819	9.0	3	IV–VI.	302 45 1.5	12.9	8.8	15.0	8.1	4.4	8.45	32.676	. .	32.556
	42	Anon. $9^h\ 49^m\ 44^s$	8.5	3	III–VII.	359 0 1.7	16.1	10.4	20.3	7.8	2.7	9.83	34.045	. .	33.934
	43	Anon. $9^h\ 50^m\ 44^s$	7.0	2	VII, IX.	" " "	"	"	"	"	"	"	27.348	. .	27.266
	44	Anon. $10^h\ 3^m\ 6^s$	8.5	3	III–VII.	351 5 1.5	14.2	8.9	17.8	7.6	1.2	8.53	29.872	. .	29.759
	45	Lacaille 4165.	7.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	32.722	. .	32.623
	46	Σ Cat. Gen. 1198, (1st).	9.0	3	III–VII.	274 20 3.1	14.8	11.8	19.2	12.0	9.9	11.80	29.968	. .	29.840
	47	B. A. C. 3566	6.7	2	VII, IX.	324 40 1.9	15.1	8.6	14.8	8.7	4.6	8.95	32.573	. .	32.468
	48	Lacaille 4326.	6.5	3	V, VII, IX.	353 20 5.3	18.8	13.2	21.9	11.2	7.0	11.23	33.880	. .	33.782
	49	Anon. $10^h\ 34^m\ 56^s$	8.5	3	III–VII.	354 45 2.3	16.1	10.4	17.2	7.5	2.8	9.38	30.185	. .	30.073
	50	Anon. $10^h\ 43^m\ 13^s$	8.0	3	III–VII.	356 30 2.4	16.2	10.1	20.0	8.2	3.6	10.08	35.345	. .	35.233
	51	O. Arg. S. 11015.	8.2	3	III–VII.	346 30 2.0	15.2	10.8	16.9	8.0	4.0	9.48	32.538	. .	32.424
	52	Lalande 21258	8.5	3	III–VII.	274 40 0.0	12.9	8.9	16.9	8.3	6.6	8.93	26.504	. .	26.376
	53	Anon. $11^h\ 6^m\ 15^s$	9.5	1	V.	250 40 2.6	13.2	11.1	20.8	10.8	8.9	11.23	31.495	. .	31.376
	54	Anon. $11^h\ 7^m\ 9^s$	9.0	1	V.	" " "	"	"	"	"	"	"	28.541	. .	28.422
	55	Anon. $11^h\ 8^m\ 12^s$	9.0	1	V.	" " "	"	"	"	"	"	"	32.161	. .	32.042
	56	Lacaille 4735.	7.2	3	III–VII.	352 35 2.7	16.8	10.8	21.1	7.9	4.0	10.55	30.126	. .	30.013
	57	O. Arg. S. 11444.	7.3	3	III–VII.	344 4 59.6	73.8	66.9	74.3	65.6	60.5	66.78	34.467	. .	34.353
	58	O. Arg. S. 11531.	8.5	2	I, IX.	343 45 0.0	14.6	7.3	17.2	6.9	1.3	7.88	32.125	. .	32.029
	59	Anon. $11^h\ 31^m\ 49^s$	9.0	3	IV–VI.	" " "	"	"	"	"	"	"	28.881	. .	28.763
	60	Anon. $11^h\ 39^m\ 1^s$	7.5	3	III–VII.	355 45 2.2	17.6	9.9	19.1	6.5	2.3	9.60	32.150	. .	32.038
	61	B. A. C. 4034	5.7	3	III–VII.	357 50 4.7	18.7	13.8	23.6	10.6	oblit.	13.08	35.544	. .	35.432
	62	O. Arg. S. 11848	8.8	3	III–VII.	344 35 2.0	14.2	9.1	16.4	7.2	2.6	8.58	31.164	. .	31.050
	63	γ Corvi	. .	3	III–VII.	335 40 2.3	15.1	10.1	16.8	8.1	3.4	9.30	27.413	. .	27.297
	64	Weisse XII, 261	8.8	2	III–V.	306 15 2.3	14.9	8.7	17.1	8.2	6.0	9.53	30.928	. .	30.803
	65	Lacaille 5193.	7.5	3	III–VII.	350 34 59.6	73.2	67.0	76.2	64.5	59.9	66.73	28.762	. .	28.649
	66	Nadir	. .	.	. .	100 0 0.9	16.2	7.7	19.8	8.1	6.7	9.90	30.313	−0.119	. .

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 3 7.3	S. 30 37 2.3	33.7	+ 8 16 3.2	+ 6.3	Y.	
2	. .	. .	. .	+ 0 29.2	71 35 39.8	2 49.5	− 32 44 50.1	+ 16.9	Y.	
3	. .	. .	. .	+ 2 10.1	62 47 19.3	1 50.5	− 24 55 30.5	+ 15.1	Y.	
4	. .	. .	58.5	− 1 58.9	62 43 10.3	1 50.2	− 23 51 21.2	+ 14.8	Y.	
5	. .	. .	. .	+ 0 35.5	79 20 43.8	4 54.0	− 40 31 58.5	+ 17.4	Y.	
6	29.894	62.0	58.0	+ 2 46.2	78 12 54.5	4 26.8	− 39 23 42.0	+ 17.0	Y.	Corr. −0″.63 applied to mean of A, B, C, D.
7	. .	. .	. .	− 0 57.7	77 39 12.9	4 14.8	− 38 49 48.5	+ 16.5	Y.	
8	. .	. .	. .	− 5 0.7	77 35 9.8	4 13.5	− 38 45 44.1	+ 16.5	Y.	
9	. .	. .	. .	− 1 0.7	78 49 7.9	4 40.7	− 40 0 9.4	+ 16.2	Y.	
10	. .	. .	. .	+ 0 5.4	67 10 13.3	2 14.7	− 28 18 48.8	+ 14.2	Y.	
11	29.912	61.8	58.7	+ 0 10.5	67 10 18.4	2 14.7	− 28 18 53.9	+ 14.2	Y.	
12	. .	. .	58.3	+ 0 17.9	63 25 24.6	1 53.6	− 24 33 39.0	+ 13.2	Y.	
13	. .	. .	. .	− 0 26.8	74 34 40.0	3 24.0	− 35 44 24.7	+ 14.3	Y.	
14	. .	. .	. .	+ 4 45.5	74 39 52.3	3 25.2	− 35 49 38.2	+ 14.2	Y.	
15	. .	. .	. .	+ 0 9.5	64 45 15.8	2 0.6	− 25 53 37.1	+ 12.5	Y.	
16	29.916	61.1	58.0	− 1 55.0	S. 2 3 11.6	2.0	+ 36 50 25.6	− 1.4	Y.	Very faint.
17	. .	. .	. .	− 0 41.7	N. 29 20 31.6	32.2	+ 68 14 43.0	− 8.3	Y.	
18	. .	. .	. .	+ 0 52.3	29 18 57.5	32.1	+ 68 13 8.9	− 8.3	Y.	
19	. .	. .	. .	− 0 59.8	N. 29 20 49.7	32.2	+ 68 15 1.1	− 8.3	Y.	
20	29.924	61.0	57.2	− 2 28.2	S. 74 17 39.5	3 20.7	− 35 27 21.0	+ 12.2	Y.	
21	. .	. .	. .	− 0 32.5	22 9 34.7	23.3	+ 16 43 41.2	+ 3.7	Y.	
22	. .	. .	. .	+ 1 15.6	31 6 24.3	34.6	+ 7 46 40.3	+ 5.5	Y.	
23	29.924	60.6	56.4	+ 2 53.2	31 8 2.0	34.6	+ 7 45 2.6	+ 5.5	Y.	
24	. .	. .	. .	+ 2 6.4	25 47 11.2	27.7	+ 13 6 0.3	+ 4.5	Y.	
25	. .	. .	. .	+ 5 10.6	50 0 19.0	1 8.4	− 11 7 48.2	+ 7.8	Y.	
26	. .	. .	. .	+ 5 12.3	50 0 20.8	1 8.4	− 11 7 49.9	+ 7.8	Y.	
27	. .	. .	. .	− 0 25.4	32 24 43.3	36.5	+ 6 28 19.5	+ 5.5	Y.	
28	. .	. .	. .	− 0 17.4	76 4 50.3	3 47.6	− 37 14 58.7	+ 8.5	Y.	
29	. .	. .	. .	+ 2 50.5	76 7 58.2	3 48.5	− 37 18 7.4	+ 8.5	Y.	
30	29.930	59.9	55.2	− 1 38.1	S. 77 58 30.2	4 23.4	− 39 9 14.3	+ 8.1	Y.	
31	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
32	29.940	56.8	43.2	− 3 6.4	N. 5 17 52.5	5.5	+ 44 11 42.2	− 4.4	Y.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
34	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
35	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
36	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
37	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
38	29.650	51.5	45.8	− 0 31.1	S. 77 19 39.1	4 12.7	− 38 30 12.5	+ 18.7	Y.	Corr. −2″.09 applied to mean of A, B, C, D.
39	. .	. .	. .	− 0 33.2	72 4 35.0	2 57.7	− 33 13 53.4	+ 17.5	Y.	
40	. .	. .	. .	+ 1 4.2	74 21 17.0	3 24.6	− 35 31 2.3	+ 17.6	Y.	
41	29.660	51.2	45.2	− 1 20.1	22 43 48.3	24.4	+ 16 9 26.6	+ 3.2	Y.	
42	. .	. .	. .	− 2 3.3	78 58 6.5	4 50.0	− 40 9 17.3	+ 18.0	Y.	
43	. .	. .	. .	+ 1 25.6	79 1 35.4	4 51.5	− 40 12 47.6	+ 17.8	Y.	
44	. .	. .	. .	+ 0 7.5	71 5 16.1	2 48.3	− 32 14 25.1	+ 16.0	Y.	
45	29.654	51.0	44.4	− 1 22.2	S. 71 3 46.3	2 48.1	− 32 12 55.2	+ 15.9	Y.	
46	. .	. .	. .	+ 0 5.0	N. 5 39 43.2	5.8	+ 44 33 28.2	− 5.6	Y.	
47	. .	. .	. .	− 1 17.3	S. 44 38 51.6	57.5	− 5 46 9.9	+ 9.4	Y.	
48	. .	. .	44.1	− 2 1.6	73 18 9.6	3 12.0	− 34 27 42.3	+ 15.5	Y.	
49	. .	. .	. .	− 0 2.3	74 45 7.1	3 30.8	− 35 54 58.6	+ 15.3	Y.	
50	29.652	50.3	43.5	− 2 44.1	76 27 26.0	3 57.6	− 37 37 44.4	+ 15.2	Y.	
51	. .	. .	. .	− 1 16.0	S. 66 28 53.5	2 13.3	− 27 37 27.6	+ 13.4	Y.	
52	. .	. .	. .	+ 1 53.4	N. 5 17 57.7	5.4	+ 44 11 42.3	− 4.6	Y.	
53	. .	. .	. .	− 0 43.1	29 20 31.9	32.8	+ 68 14 44.0	− 10.0	Y.	
54	. .	. .	. .	+ 0 49.4	29 18 59.4	32.8	+ 68 13 11.4	− 9.9	Y.	
55	. .	. .	43.0	− 1 4.0	N. 29 20 52.7	32.8	+ 68 15 4.8	− 9.9	Y.	
56	. .	. .	. .	− 0 0.4	S. 72 35 10.1	3 2.4	− 33 34 33.3	+ 13.0	Y.	
57	. .	. .	. .	− 2 16.5	64 2 50.3	1 59.6	− 25 11 10.6	+ 11.5	Y.	
58	. .	. .	. .	− 1 3.6	63 44 4.3	1 58.0	− 24 52 23.1	+ 11.2	Y.	
59	. .	. .	. .	+ 0 38.7	63 45 46.6	1 58.2	− 24 54 5.5	+ 11.2	Y.	
60	29.654	49.3	41.8	− 1 3.8	75 44 5.8	3 46.4	− 36 54 12.9	+ 12.1	Y.	Corr. −2″.12 applied to mean of A, B, C, D.
61	. .	. .	. .	− 2 50.3	77 47 22.8	4 24.4	− 38 58 8.0	+ 11.8	Y.	
62	. .	. .	. .	− 0 32.9	64 34 35.7	2 2.7	− 25 42 59.1	+ 10.2	Y.	
63	29.656	48.8	41.2	+ 1 24.6	55 41 33.9	1 25.7	− 16 49 20.4	+ 8.7	Y.	Cloudy.
64	. .	. .	. .	− 0 25.2	26 14 44.4	28.9	+ 12 38 26.0	+ 4.0	Y.	
65	. .	. .	40.8	+ 0 42.3	S. 70 35 49.0	2 45.1	− 31 44 54.9	+ 9.3	Y.	
66	. .	. .	. .	. .	. . . .	. . .	. . . .	. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Apr. 22	1	Anon. $9^h 16^m 34^s$	6.5	3	V, VII, IX.	50 40 7.0	18.1	9.8	20.2	12.2	16.2	13.92	36.411	−0.220	36.195
	2	Anon. $9^h 26^m 24^s$	8.3	3	III–VII.	87 19 59.1	71.2	61.8	74.1	64.8	66.9	66.32	30.173	. .	29.958
	3	Anon. $9^h 35^m 10^s$	8.5	3	III–VII.	94 10 0.2	12.4	3.1	15.2	5.9	7.3	7.35	28.906	. .	28.693
	4	Lacaille 4030	7.0	3	III–VII.	95 49 57.8	71.7	62.1	73.9	64.2	66.5	66.03	26.198	. .	25.985
	5	Anon. $9^h 55^m 39^s$	8.3	3	IV–VI.	97 35 5.4	19.7	8.9	20.8	11.7	13.5	13.33	30.393	. .	30.175
	6	Lacaille 4107	7.5	2	VII, IX.	" " "	"	"	"	"	"	"	22.390	. .	22.220
	7	Lacaille 4192	6.8	3	IV–VI.	90 45 1.2	14.4	4.9	16.2	6.8	8.8	8.72	33.126	. .	31.908
	8	43 Leonis	. .	3	III–VII.	51 40 3.7	16.0	6.9	19.8	9.9	13.6	11.65	28.571	. .	28.350
	9	Lacaille 4317	7.0	3	III–VII.	84 40 3.8	16.5	9.1	20.8	10.2	13.1	12.25	28.741	. .	28.526
	10	Weisse X, 520	5.8	3	V, VII, IX.	70 25 2.7	16.6	6.8	19.2	8.8	12.1	11.03	31.235	. .	31.026
	11	Weisse (2) X, 774	9.5	2	IV, VI.	22 35 4.2	16.6	6.8	18.4	8.9	12.9	11.30	38.304	. .	38.081
	12	O. Arg. S. 10974	7.5	3	III–VII.	88 30 3.9	17.4	6.8	18.5	9.6	12.1	11.38	30.301	. .	30.086
	13	Anon. $10^h 59^m 3^s$	9.5	3	III–VII.	88 40 1.7	16.8	5.7	18.1	8.8	11.9	10.50	27.838	. .	27.623
	14	Lacaille 4665	6.3	3	III–VII.	91 25 0.0	15.3	4.6	16.8	7.2	8.0	8.65	25.208	. .	24.994
	15	Lacaille 4735	7.0	3	III–VII.	92 25 0.7	14.8	4.2	17.2	6.3	8.4	8.60	30.090	. .	29.876
	16	Weisse XI, 403	7.0	3	III–VII.	64 54 58.9	70.8	61.8	74.5	64.6	64.8	65.90	34.296	. .	34.077
	17	Lacaille 4814	7.0	3	III–VII.	97 30 2.9	17.2	6.9	19.9	8.8	10.9	11.10	34.411	. .	34.199
	18	Weisse XI, 674	8.3	3	III–VII.	65 55 1.8	12.8	4.8	17.4	6.9	9.6	8.88	29.289	. .	29.070
	19	Anon. $11^h 44^m 38^s$	7.0	3	V, VII, IX.	95 0 1.7	17.2	6.8	21.2	10.1	12.1	11.52	24.621	. .	24.423
	20	Anon. $11^h 53^m 8^s$	8.5	2	I, IX.	24 10 3.4	16.2	7.7	20.8	9.7	12.2	11.67	25.903	. .	25.716
	21	Lalande 22566	6.0	3	IV–VI.	" " "	"	"	"	"	"	"	34.193	. .	33.971
	22	O. Arg. S. 11917	7.2	3	V, VII, IX.	89 35 1.7	17.4	6.2	20.0	8.7	10.9	10.82	35.785	. .	35.584
	23	Rumker 3911	7.0	3	III–VII.	52 30 5.1	17.1	8.2	21.4	10.7	14.2	12.78	31.461	. .	31.240
	24	Anon. $12^h 21^m 58^s$	7.7	2	I, IX.	96 5 3.8	19.5	8.9	21.5	10.3	13.2	12.87	30.910	. .	30.727
	25	Anon. $12^h 22^m 1^s$	8.5	3	III–VII.	" " "	"	"	"	"	"	"	24.989	. .	24.776
	26	Lacaille 5226	6.8	3	III–VII.	96 55 0.3	13.8	4.9	17.8	6.8	9.0	8.77	31.142	. .	30.929
	27	Anon. $12^h 38^m 26^s$	8.3	3	III–VII.	95 55 0.6	15.4	5.2	18.4	7.8	10.2	9.60	27.510	. .	27.297
	28	Anon. $12^h 44^m 41^s$	8.8	3	III–VII.	84 0 1.3	14.8	6.1	19.2	8.7	9.9	10.00	31.949	. .	31.734
	29	Lacaille 5346	7.5	3	III–VII.	97 15 1.7	15.8	6.8	19.8	8.3	10.4	10.47	32.923	. .	32.711
	30	Anon. $12^h 58^m 36^s$	7.0	3	IV–VI.	93 15 1.2	16.4	4.7	19.9	6.9	9.7	9.80	29.624	. .	29.406
	31	Nadir	. .	.	. . .	260 0 1.3	14.7	8.0	15.8	9.9	7.2	9.48	30.405	. .	. .
23	32	Lacaille 3920	7.0	3	III–VII.	85 50 1.0	11.9	6.8	11.2	11.6	5.8	8.05	33.625	. .	33.410
	33	Anon. $9^h 32^m 41^s$	8.5	2	VII, IX.	95 9 59.3	69.8	63.8	67.9	69.2	64.0	65.67	28.136	. .	27.950
	34	Weisse (2) IX, 867	8.0	3	III–VII.	40 14 59.4	70.2	64.1	67.5	68.3	65.7	65.87	32.913	. .	32.690
	35	Anon. $9^h 48^m 5^s$	8 5	3	V, VII, IX.	96 40 5.3	17.7	10.4	15.5	16.1	10.1	12.52	34.637	. .	34.440
	36	Weisse (2) IX, 1255	7.5	2	I, IX.	28 45 1.0	11.8	6.6	10.4	12.3	6.6	8.12	31.080	. .	30.832
	37	Weisse (2) IX, 1257	9.0	3	III–VII.	" " "	"	"	"	"	"	"	24.978	. .	24.752
	38	Lacaille 4190	7.5	3	III–VII	87 45 5.7	17.1	9.8	14.2	15.1	9.2	11.85	34.303	. .	34.088
	39	43 Leonis	6.0	3	III–VII.	51 40 3.8	13.5	7.9	13.6	13.7	8.9	10.23	28.493	. .	28.272
	40	O. Arg. N. 10861	6.6	3	IV–VI.	354 0 6.7	16.6	13.0	15.0	17.1	11.2	13.27	23.470	. .	33.244
	41	Lacaille 4364	6.3	3	III–VII.	85 50 1.5	12.7	8.1	12.3	12.3	6.2	8.85	28.980	. .	28.765
	42	Lacaille 4419	6.7	3	III–VII.	89 55 1.7	13.3	5.8	10.9	10.0	4.8	7.75	28.551	. .	28.337
	43	Lacaille 4526	7.0	3	III–VII.	89 20 0.4	12.6	5.3	9.0	9.8	4.7	6.97	26.730	. .	26.516
	44	Weisse X, 1044	7.8	2	VII, IX.	45 39 58.0	68.9	64.5	67.7	68.8	62.9	65.13	35.970	. .	35.754
	45	O. Arg. S. 11267	. .	3	III–VII.	89 0 1.0	14.0	7.0	10.6	11.7	6.6	8.48	30.904	. .	30.690
	46	Lacaille 4753	6.5	3	III–VII.	93 25 1.3	14.8	6.6	11.9	10.9	5.8	8.55	25.622	. .	25.409
	47	B. A. C. 3929	. .	3	V, VII, IX.	98 40 0.0	14.1	5.6	10.2	10.3	3.9	7.35	27.701	. .	27.505
	48	Anon. $11^h 32^m 48^s$	. .	3	V, VII, IX.	85 0 1.8	13.2	8.6	12.8	12.9	7.0	9.38	31.895	. .	31.692
	49	B. A. C. 3994	5.5	3	III–VII.	84 55 0.0	12.4	7.3	12.0	10.8	6.0	8.08	33.473	. .	33.258
	50	Weisse XI, 926	6.8	3	III–VII.	45 45 1.9	13.6	8.3	10.8	12.3	6.7	8.93	26.376	. .	26.154
	51	O. Arg. S. 11920	6.7	3	IV–VI.	82 5 0.7	12.7	6.2	11.2	10.4	4.2	7.57	27.381	. .	27.162
	52	γ Corvi	4.5	3	III–VII.	75 40 0.0	12.0	5.6	10.3	8.8	2.2	6.48	27.411	. .	27.194
	53	B. A. C. 4175	6.0	3	III–VII.	97 0 0.4	13.3	7.1	12.7	10.4	3.6	7.92	28.321	. .	28.109
	54	Lacaille 5134	7.2	2	VII, IX.	" " "	"	"	"	"	"	"	27.956	. .	27.772
	55	Nadir	. .	.	. .	200 0 0.0	11.8	5.5	11.9	8.5	5.5	7.20	30.332	−0.220	. .
25	56	Anon. $9^h 36^m 17^s$	. .	3	III–VII.	96 45 2.8	17.9	10.7	16.3	13.3	7.1	11.35	31.676	−0.207	31.476
	57	Weisse (2) IX, 961	9.0	3	IV–VI.	40 40 2.6	14.8	9.5	14.9	11.5	8.7	10.33	35.778	. .	35.570
	58	Anon. $9^h 54^m 38^s$	7.5	3	III–VII.	93 30 4.4	17.2	11.0	17.8	13.2	8.9	12.08	26.411	. .	26.211
	59	Anon. $10^h 2^m 9^s$	6.5	3	III–VII.	37 54 58.3	71.3	66.5	71.2	67.8	63.2	66.38	29.974	. .	29.763
	60	γ Leonis, (2d *)	. .	3	III–VII.	38 25 3.8	17.3	12.4	17.0	15.7	9.4	12.60	33.521	. .	33.311
	61	Anon. $10^h 22^m 42^s$	. .	3	III–VII.	94 25 2.3	16.7	11.1	16.3	12.8	6.4	10.93	36.728	. .	36.528
	62	B. A. C. 3649	7.0	3	III–VII.	49 20 1.3	15.7	9.8	12.8	14.9	7.8	10.38	26.631	. .	26.422
	63	Weisse X, 1044	7.5	3	III–VII.	45 35 1.3	16.4	10.3	16.8	13.3	5.8	10.65	26.603	. .	26.394
	64	Lacaille 4668	7.7	3	III–VII.	96 35 1.7	18.7	11.1	17.5	13.4	5.9	11.38	32.799	. .	32.599
	65	Weisse (2) XI, 312	. .	3	III–VII.	27 10 4.1	20.7	13.6	19.8	15.7	8.4	13.72	30.356	. .	30.143
	66	B. A. C. 3926	5.5	3	III–VII.	89 15 3.8	21.0	11.9	18.8	13.8	8.3	12.93	33.535	−0.207	33.334

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.956	59.5	56.4	− 3 14.3	S. 30 36 59.6	34.0	+ 8 16 5.6	+ 5.9	Y.	April 22. Changed Nadir reading 100°,
2	. .	. .	. .	+ 0 1.3	67 20 7.6	2 16.7	− 28 28 45.1	+ 16.5	Y.	
3	29.960	59.1	55.5	+ 0 40.9	74 10 48.3	3 20.2	− 35 20 29.2	+ 17.7	Y.	
4	. .	. .	. .	+ 2 5.6	75 52 11.6	3 44.6	− 37 2 17.0	+ 17.8	Y.	
5	. .	. .	. .	− 0 5.5	77 35 7.8	4 15.7	− 38 45 44.3	+ 17.7	Y.	
6	. .	. .	. .	+ 4 3.2	77 39 16.6	4 17.2	− 38 49 54.5	+ 17.7	Y.	
7	29.970	58.7	54.7	− 1 31.1	70 43 37.6	2 43.3	− 31 52 41.7	+ 16.1	Y.	
8	. .	. .	. .	+ 0 51.7	31 41 3.3	35.6	+ 7 12 0.3	+ 5.7	Y.	
9	. .	. .	. .	+ 0 46.2	64 40 58.4	2 1.4	− 25 49 20.5	+ 14.2	Y.	
10	. .	. .	54.5	− 0 32.2	50 24 38.9	1 9.7	− 11 32 9.5	+ 10.8	Y.	
11	. .	. .	. .	− 4 13.5	2 30 57.8	2.5	+ 36 22 38.9	− 3.2	Y.	Very faint.
12	29.978	58.2	54.0	− 0 2.7	68 30 8.7	2 25.5	− 29 38 55.0	+ 14.1	Y.	
13	. .	. .	. .	+ 1 14.4	68 41 24.9	2 27.0	− 29 50 12.6	+ 13.7	Y.	Faint.
14	. .	. .	. .	+ 2 36.6	71 27 45.2	2 50.3	− 32 36 56.3	+ 13.7	Y.	
15	. .	. .	. .	+ 0 3.9	72 25 12.5	3 2.4	− 33 34 35.5	+ 13.4	Y.	
16	. .	. .	. .	− 2 7.8	44 52 58.1	57.5	− 6 0 16.4	+ 8.2	Y.	
17	29.980	57.8	53.7	− 2 11.6	77 27 59.5	4 14.1	− 38 38 34 3	+ 13.4	Y.	
18	. .	. .	. .	+ 0 29.1	45 55 38.0	59.6	− 7 2 58.4	+ 8.1	Y.	
19	. .	. .	. .	+ 2 54.4	75 3 6.0	3 33.2	− 36 12 59.9	+ 12.4	Y.	
20	. .	. .	. .	+ 2 14.0	4 12 25.7	4.2	+ 34 41 9.3	− 1.3	Y.	
21	. .	. .	. .	− 2 4.5	4 8 7.2	4.2	+ 34 45 27.9	− 1.3	Y.	
22	29.982	57.2	52.8	− 2 55.4	69 32 15.4	2 33.9	− 30 41 10.0	+ 11.0	Y.	
23	. .	. .	. .	− 0 38.8	32 29 33.9	36.9	+ 6 23 28.4	+ 5.0	Y.	
24	. .	. .	. .	− 0 22.8	76 4 50.1	3 50.0	− 37 15 0.9	+ 10.4	Y.	
25	. .	. .	. .	+ 2 43.4	76 7 56.3	3 50.4	− 37 18 7.4	+ 10.4	Y.	
26	29.984	56.9	52.2	− 0 29.1	76 54 39.7	4 4.2	− 38 5 4.6	+ 9.7	Y.	
27	. .	. .	. .	+ 1 24.6	75 56 34.2	3 47.3	− 37 6 42.3	+ 9.4	Y.	
28	. .	. .	. .	− 0 54.3	63 59 15.7	1 58.2	− 25 7 34.7	+ 8.4	Y.	
29	. .	. .	. .	− 1 25.0	77 13 45.5	4 10.3	− 38 24 16.5	+ 8.6	Y.	
30	29.986	56.6	52.1	+ 0 18.6	73 15 28.4	3 10.3	− 34 24 59.5	+ 8.1	Y.	
31	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
32	. .	. .	. .	− 1 46.9	65 48 21.1	2 6.1	− 26 56 48.0	+ 16.1	Y.	
33	30.016	64.4	61.4	+ 1 4.2	75 11 9.8	3 31.8	− 36 21 2.4	+ 18.0	Y.	
34	. .	. .	. .	− 1 24.3	20 13 41.6	21.0	+ 18 39 36.7	+ 2.1	Y.	
35	30.020	64.2	60.6	− 2 19.2	76 37 53.3	3 55.3	− 37 48 9.4	+ 17.8	Y.	
36	. .	. .	. .	− 0 26.1	8 44 42.1	8.8	+ 30 8 48.4	− 3.6	Y.	
37	. .	. .	. .	+ 2 44.2	8 47 52.3	8.8	+ 30 5 38.2	− 1.7	Y.	
38	30.024	63.6	59.7	− 2 8.1	67 43 3.7	2 18.6	− 28 51 43.2	+ 15.5	Y.	
39	. .	. .	. .	+ 0 54.1	S. 31 41 4.3	35.4	+ 7 11 59.6	+ 5.6	Y.	
40	. .	. .	. .	− 1 41.7	N. 26 1 28.4	28.0	+ 64 55 35.7	− 11.4	Y.	
41	. .	. .	. .	+ 0 38.7	S. 65 50 47.5	2 7.2	− 26 59 15.5	+ 14.3	Y.	
42	30.038	62.4	57.9	+ 0 52.1	69 55 59.8	2 35.8	− 31 4 56.3	+ 14.9	Y.	
43	. .	. .	. .	+ 1 49.0	69 21 56.0	2 31.3	− 30 30 48.1	+ 14.2	Y.	
44	30.044	61.7	57.1	− 3 0.5	25 37 4.7	27.6	+ 13 16 7.0	+ 3.6	Y.	Cloudy.
45	. .	. .	. .	− 0 21.6	68 59 46.9	2 28.8	− 30 8 36.4	+ 13.4	Y.	
46	. .	. .	56.2	+ 2 23.6	73 27 32.2	3 11.5	− 34 37 4.4	+ 13.5	Y.	
47	. .	. .	. .	+ 1 18.1	78 41 25.4	4 40.2	− 39 52 26.4	+ 13.8	Y.	
48	30.050	60.8	55.7	− 0 53.0	64 59 16.4	2 3.0	− 26 7 40.1	+ 11.8	Y.	
49	. .	. .	. .	− 1 42.1	64 53 26.0	2 2.5	− 26 1 49.2	+ 11.4	Y.	
50	30.052	60.2	55.0	+ 2 0.3	25 47 9.3	27.9	+ 13 6 2.1	+ 3.6	Y.	
51	. .	. .	. .	+ 1 28.8	62 6 36.4	1 48.8	− 23 14 45.9	+ 10.2	Y.	
52	. .	. .	. .	+ 1 27.8	55 41 34.3	1 24.6	− 16 49 19.6	+ 9.0	Y.	
53	. .	. .	. .	+ 0 59.2	77 1 7.1	4 5.8	− 38 11 33.6	+ 10.9	Y.	
54	30.060	59.6	54.1	+ 1 9.8	77 1 17.7	4 5.8	− 38 11 44.3	+ 10.9	Y.	
55										
56	30.214	60.5	54.6	− 0 46.2	76 44 25.1	4 1.6	− 37 54 47.5	+ 18.3	Y.	
57	. .	. .	. .	− 2 55.0	20 37 15.3	21.9	+ 18 16 2.0	+ 2.0	Y.	
58	. .	. .	53.8	+ 1 58.6	73 32 10.6	3 14.5	− 34 41 45.9	+ 17.1	Y.	
59	30.220	59.8	53.3	+ 0 7.4	17 55 13.8	18.8	+ 20 58 6.6	+ 1.1	Y.	
60	. .	. .	. .	− 1 43.8	18 23 28.8	19.4	+ 20 29 51.1	+ 1.2	Y.	
61	. .	. .	. .	− 3 24.8	74 21 46.2	3 25.5	− 35 31 32.4	+ 16.3	Y.	
62	30.216	59.0	52.2	+ 1 52.0	29 22 2.4	32.9	+ 9 31 4.0	+ 4.6	Y.	
63	. .	. .	51.0	+ 1 52.8	25 37 3.5	28.1	+ 13 16 7.7	+ 3.4	Y.	
64	. .	. .	. .	− 1 21.5	76 33 49.9	4 0.6	− 37 44 11.2	+ 14.7	Y.	
65	30.232	57.2	50.2	− 0 4.5	7 10 9.2	7.4	+ 31 43 22.6	− 1.8	Y.	
66	. .	. .	. .	− 1 44.5	S. 69 13 28.4	2 33.5	− 30 22 22.7	+ 13.9	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Apr. 25	1	Lacaille 4837.	6.7	3	III–VII.	96 15 0.9	19.7	11.3	18.2	13.6	6.6	11.72	34.082	—0.207	33.882
	2	Anon. $11^h\ 33^m\ 36^s$	9.0	1	IX.	" " "	"	"	"	"	"	"	34.031	. .	33.875
	3	O. Arg. S. 11656.	. .	2	II, VIII.	84 5 2.7	19.4	12.9	20.0	14.9	7.6	12.92	28.325	. .	28.131
	4	Anon. $11^h\ 40^m\ 34^s$	. .	2	V, VII.	" " "	"	"	"	"	"	"	25.548	. .	25.348
	5	Anon. $11^h\ 41^m\ 11^s$	8.5	1	IX.	" " "	"	"	"	"	"	"	26.682	. .	26.512
	6	O. Arg. N. 12195	8.5	2	VI, VII.	355 55 3.6	17.4	14.5	19.5	13.5	7.2	12.62	27.492	. .	27.272
	7	O. Arg. N. 12337	8.3	3	IV–VI.	343 30 0.6	15.3	11.1	15.5	11.6	5.0	9.85	29.562	. .	29.338
	8	Weisse XII, 177.	9.0	3	III–VII.	58 45 2.4	18.6	12.8	19.8	15.4	10.1	13.18	29.791	. .	29.584
	9	O. Arg. S. 12173.	8.0	3	III–VII.	88 15 0.1	14.9	7.8	14.8	9.3	3.9	8.47	33.768	. .	33.566
	10	O. Arg. S. 12258.	7.8	3	III–VII.	84 50 3.1	17.9	13.3	20.3	14.2	8.4	12.87	27.860	. .	27.658
	11	O. Arg. S. 12332.	8.2	3	III–VII.	85 0 2.2	18.7	13.3	20.7	14.1	7.1	12.68	33.190	. .	32.988
	12	Weisse XII, 757.	7.0	3	III–VII.	58 5 1.7	18.4	11.8	19.7	14.3	9.4	12.55	30.077	. .	29.870
	13	Weisse XII, 786.	8.8	3	III–VII.	" " "	"	"	"	"	"	"	32.778	. .	32.571
	14	Lacaille 5374.	6.8	3	III–VII.	87 50 2.1	18.2	11.2	20.0	13.0	7.2	11.95	32.041	. .	31.839
	15	Anon. $13^h\ 4^m\ 28^s$	8.0	3	III–VII.	95 30 1.5	17.9	11.4	17.4	11.9	4.0	10.68	26.055	. .	25.855
	16	Com. Polaris, S. P.	. .	1	V.	327 30 5.4	20.2	15.4	22.0	16.4	8.7	14.68	27.792	. .	27.585
	17	Weisse XIII, 303	9.0	3	III–VII.	56 30 2.6	17.4	11.8	20.8	12.7	7.8	12.18	33.878	. .	33.671
	18	Nadir	. .	.	. .	200 0 0.3	16.5	9.9	19.4	10.2	6.1	10.40	30.422	. .	. .
26	19	Weisse (2) IX, 837	. .	3	III–VII.	31 10 2.8	14.8	8.1	12.8	12.7	7.5	9.78	29.389	—0.232	29.152
	20	B. A. C. 3448	7.0	3	III–VII.	93 5 2.1	14.7	7.8	14.1	9.7	5.4	8.97	28.704	. .	28.478
	21	O. Arg. S. 10471.	6.0	3	III–VII.	82 0 0.4	12.2	6.2	11.2	9.6	3.4	7.17	25.968	. .	25.740
	22	24 Sextantis	6.0	3	III–VII.	59 5 1.9	13.7	8.8	12.5	12.7	8.5	9.68	25.383	. .	25.151
	23	30 Sextantis	5.7	3	III–VII.	58 50 2.8	13.6	7.8	12.3	12.7	8.0	9.48	28.095	. .	27.863
	24	Lacaille 4365.	6.8	3	III–VII.	91 25 0.1	13.6	7.0	11.4	10.1	4.2	7.73	26.614	. .	26.388
	25	Lacaille 4438.	. .	3	III–VII.	96 20 1.6	14.9	9.8	13.8	12.7	6.1	9.82	32.761	. .	34.536
	26	B. A. C. 3755.	5.8	3	III–VII.	95 14 59.4	71.3	66.2	69.8	69.0	63.1	66.47	27.179	. .	26.954
	27	O. Arg. S. 11114.	8.5	3	V, VII, IX.	88 35 2.6	14.7	8.4	12.2	11.8	6.0	9.28	29.448	. .	29.235
	28	O. Arg. N. 11584	8.3	3	VI, VII, IX.	0 0 4.9	15.4	11.8	15.7	13.6	7.7	11.52	33.624	. .	33.364
	29	83 Leonis, (1st *)	7.0	2	I, IX.	55 10 2.7	15.2	10.0	15.7	13.2	7.1	10.65	30.980	. .	30.745
	30	83 Leonis, (2d *)	7.5	3	IV–VI.	" " "	"	"	"	"	"	"	30.110	. .	29.878
	31	Lacaille 4789.	7.3	3	III–VII.	88 10 3.7	16.7	10.5	16.1	12.7	8.2	11.32	30.071	. .	29.844
	32	Weisse XI, 674	8.5	3	III–VII.	65 55 1.3	13.9	8.7	13.4	11.2	6.2	9.12	29.315	. .	29.084
	33	B. A. C. 4015.	5.8	3	III–VII.	92 0 4.3	17.7	11.8	16.9	13.9	7.6	12.03	26.685	. .	26.459
	34	O. Arg. S. 11831.	8.4	3	III–VII.	84 35 2.1	16.2	10.9	15.9	12.8	7.3	10.87	26.392	. .	26.165
	35	B. A. C. 4098.	. .	3	III–VII.	96 0 3.7	18.4	11.8	17.7	15.1	8.4	12.52	32.968	. .	32.743
	36	Anon. $12^h\ 20^m\ 20^s$	9.0	2	I, IX.	31 20 0.0	11.2	6.2	11.2	9.4	4.1	7.02	29.087	. .	28.830
	37	16 Comæ	5.5	3	IV–VI.	" " "	"	"	"	"	"	"	29.069	. .	28.835
	38	Nadir	. .	.	. .	199 59 58.5	71.0	66.0	71.2	67.9	64.1	66.45	30.319	. .	. .
30	39	Anon. $10^h\ 2^m\ 10^s$	6.5	3	IV–VI.	37 35 2.4	15.2	10.8	14.8	14.1	7.8	10.85	30.143	—0.197	29.944
	40	Lacaille 4196.	6.0	3	III–VII.	91 15 0.5	13.6	8.2	13.0	9.4	3.8	8.08	31.169	. .	30.978
	41	44 Leonis	7.7	3	IV–VI.	49 25 1.2	13.8	9.1	13.5	12.3	7.4	9.55	27.619	. .	27.422
	42	B. A. C. 3562.	6.0	2	I, IX.	" " "	"	"	"	"	"	"	26.567	. .	26.378
	43	Anon. $10^h\ 30^m\ 27^s$	9.3	2	VII, IX.	62 45 2.3	13.1	8.1	13.1	10.8	6.2	8.93	32.306	. .	32.122
	44	Lacaille 4419.	7.0	3	III–VII.	89 55 4.8	18.9	10.7	16.2	12.9	7.0	11.75	28.659	. .	28.468
	45	Lacaille 4481.	7.2	3	IV–VI.	100 29 59.1	70.7	64.3	68.8	65.8	58.9	64.60	31.593	. .	31.399
	46	O. Arg. S. 11020.	7.7	3	III–VII.	82 20 2.7	14.1	8.8	12.3	10.4	4.0	8.72	25.933	. .	25.740
	47	Anon. $10^h\ 59^m\ 28^s$	9.0	3	III–VII.	47 55 6.5	16.3	12.6	16.9	15.3	9.2	12.80	35.156	. .	34.957
	48	Weisse (2) XI, 98	9.0	3	IV–VI.	37 35 2.0	13.8	9.5	14.9	12.0	5.2	9.57	29.258	. .	29.060
	49	Lacaille 4709.	7.2	3	III–VII.	90 15 5.0	18.2	12.7	17.4	14.1	7.0	12.40	31.175	. .	30.984
	50	Weisse XI, 365	6.5	3	III–VII.	55 25 4.6	16.2	12.9	18.0	14.2	8.5	12.40	34.428	. .	34.230
	51	Anon. $11^h\ 27^m\ 58^s$	7.5	3	IV–VI.	99 20 2.2	15.7	9.8	14.0	10.2	3.9	9.30	39.660	. .	39.466
	52	Weisse XI, 597	8.8	1	V.	57 10 oblit.	19.7	14.5	19.8	18.7	13.5	15.66	30.545	. .	30.348
	53	Weisse XI, 605	9.2	3	V, VII, IX.	" " "	"	"	"	"	"	"	32.380	. .	32.189
	54	Anon. $11^h\ 46^m\ 12^s$	7.3	3	III–VII.	96 25 2.3	16.2	10.8	15.5	12.8	4.9	10.42	26.755	. .	26.565
	55	Anon. $11^h\ 56^m\ 1^s$	8.5	3	III–VII.	68 50 0.3	11.8	9.7	14.2	10.8	3.9	8.45	26.576	. .	26.381
	56	Anon. $12^h\ 4^m\ 4^s$	9.0	3	III–VII.	98 40 4.5	17.8	11.8	17.8	15.3	7.1	12.38	30.912	. .	30.723
	57	Weisse XII, 177.	9.0	3	III–VII.	58 45 4.7	16.9	12.6	17.1	15.0	10.5	12.80	29.696	. .	29.499
	58	Anon. $12^h\ 21^m\ 1^s$	9.0	3	III–VII.	65 44 59.1	71.8	67.8	72.6	70.3	63.1	67.45	31.563	. .	31.367
	59	O. Arg. S. 12269.	9.2	3	III–VII.	84 10 2.3	15.1	9.6	15.0	10.8	4.5	9.55	33.810	. .	33.618
	60	O. Arg. S. 12286.	8.3	3	IV–VI.	" " "	"	"	"	"	"	"	30.540	. .	30.344
	61	Lacaille 5261.	8.0	3	IV–VI.	93 15 1.3	14.2	8.1	14.8	8.8	3.2	8.40	30.400	. .	30.205
	62	Weisse XII, 757.	7.0	3	III–VII.	58 5 4.5	16.5	11.4	17.7	14.7	9.8	12.43	29.996	. .	29.799
	63	Lacaille 5363.	6.5	3	III–VII.	97 44 58.1	73.4	67.8	72.5	68.7	61.0	66.92	31.447	. .	31.258
	64	Lacaille 5426.	. .	3	III–VII.	93 15 2.4	17.4	10.0	18.3	10.8	5.4	10.72	26.942	. .	26.752
	65	O. Arg. S. 12802.	7.5	3	III–VII.	85 35 1.8	16.4	10.8	17.8	11.2	5.3	10.55	30.127	—0.197	29.935

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 1.7	S. 76 13 10.0	3 55.1	− 37 23 25.9	+ 13.5	Y.	Very faint; one second following Lacaille 4837.
2	. .	. .	. .	− 2 1.5	76 13 10.2	3 55.1	− 37 23 26.1	+ 13.5	Y.	
3	. .	. .	. .	+ 0 58.5	64 6 11.4	2 0.6	− 25 14 32.8	+ 11.5	Y.	
4	. .	. .	. .	+ 2 25.5	64 7 38.4	2 0.7	− 25 15 59.9	+ 11.5	Y.	
5	30.240	56.6	49.1	+ 1 49.2	S. 64 7 2.1	2 0.6	− 25 15 23.5	+ 11.4	Y.	
6	. .	. .	. .	+ 1 25.4	N. 24 3 22.0	26.3	+ 62 57 27.5	− 8.4	Y.	
7	. .	. .	. .	+ 0 20.7	N. 36 29 29.4	43.6	+ 75 23 52.3	− 10.3	Y.	
8	. .	. .	. .	+ 0 13.0	S. 38 45 26.2	47.3	+ 0 7 25.7	+ 6.0	Y.	
9	30.260	55.7	47.6	− 1 51.8	68 13 16.7	2 26.7	− 29 22 4.1	+ 10.2	Y.	
10	. .	. .	. .	+ 1 13.3	64 51 26.2	2 5.2	− 25 59 52.2	+ 9.5	Y.	
11	. .	. .	. .	− 1 33.6	64 58 39.1	2 6.1	− 26 7 5.8	+ 9.2	Y.	
12	. .	. .	. .	+ 0 4.1	58 5 16.6	46.4	+ 0 47 36.3	+ 5.4	Y.	
13	30.270	55.0	46.5	− 1 20.2	38 3 52.4	46.3	+ 0 49 0.6	+ 5.4	Y.	
14	. .	. .	. .	− 0 57.6	67 49 14.3	2 24.3	− 28 57 59.4	+ 8.4	Y.	
15	. .	. .	. .	+ 2 9.7	S. 75 32 20.4	3 45.9	− 36 42 27.0	+ 8.3	Y.	
16	. .	. .	. .	+ 1 15.6	N. 52 28 29.7	1 17.1	+ 88 36 33.9	+ 8.3	Y.	
17	30.272	54.1	45.6	− 1 55.1	S. 36 28 17.1	43.8	+ 2 24 38.3	+ 4.8	Y.	
18	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	Y.	
19	30.190	62.8	59.2	+ 0 26.5	11 10 36.3	11.4	+ 27 42 51.6	− 1.2	Y.	
20	. .	. .	. .	+ 0 47.7	73 5 56.6	3 7.4	− 34 15 24.8	+ 17.0	Y.	
21	30.192	62.8	57.6	+ 2 13.3	62 2 20.4	1 48.3	− 23 10 29.5	+ 14.2	Y.	
22	. .	. .	. .	+ 2 31.7	39 7 41.4	47.0	− 0 14 49.1	+ 7.7	Y.	
23	. .	. .	56.8	+ 1 6.9	38 51 16.4	46.5	+ 0 1 36.3	+ 7.5	Y.	
24	. .	. .	. .	+ 1 53.0	71 27 0.8	2 50.6	− 32 36 12.1	+ 15.6	Y.	
25	30.190	62.2	56.3	− 2 22.2	76 17 47.6	3 52.8	− 37 28 1.2	+ 16.1	Y.	Faint.
26	. .	. .	. .	+ 1 35.3	75 16 41.8	3 36.8	− 36 26 39.3	+ 15.4	Y.	
27	30.196	61.8	55.7	+ 0 23.9	S. 68 35 33.2	2 26.7	− 29 44 20.7	+ 14.0	Y.	
28	. .	. .	. .	− 1 45.5	N. 20 1 34.0	21.1	+ 58 55 34.3	− 9.3	Y.	
29	. .	. .	. .	− 0 23.3	S. 35 9 47.3	40.8	+ 3 43 11.1	+ 7.3	Y.	
30	. .	. .	. .	+ 0 3.8	35 10 14.5	40.9	+ 3 42 43.9	+ 7.3	Y.	
31	30.190	61.5	54.8	+ 0 4.8	68 10 16.1	2 23.9	− 29 19 0.8	+ 12.7	Y.	
32	. .	. .	. .	+ 0 28.7	45 55 37.8	59.9	− 7 2 58.5	+ 8.0	Y.	
33	. .	. .	. .	+ 1 50.8	72 2 2.8	2 57.2	− 33 11 20.8	+ 12.4	Y.	
34	. .	. .	. .	+ 2 0.0	64 37 10.9	2 2.0	− 25 45 33.6	+ 11.0	Y.	
35	30.186	60.9	53.6	− 1 26.0	76 58 46.6	3 48.8	− 37 8 56.1	+ 12.0	Y.	Faint.
36	. .	. .	. .	+ 0 36.6	11 20 43.6	11.7	+ 27 32 43.9	+ 0.1	Y.	
37	30.180	60.5	53.2	+ 0 36.5	11 20 43.5	11.7	+ 27 32 44.1	+ 0.1	Y.	
38	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	Y.	
39	29.966	63.2	60.4	+ 0 1.8	17 55 12.6	18.4	+ 20 58 8.2	+ 0.6	Y.	
40	. .	. .	. .	− 0 30.6	71 14 37.5	2 46.2	− 32 23 44.5	+ 16.5	Y.	
41	. .	. .	59.6	+ 1 20.7	29 27 30.2	32.2	+ 9 26 36.8	+ 4.4	Y.	
42	. .	. .	. .	+ 1 53.3	29 27 2.9	32.2	+ 9 26 4.1	+ 4.4	Y.	
43	. .	. .	. .	− 1 6.5	42 44 2.5	52.8	− 3 51 16.0	+ 8.4	Y.	
44	29.976	62.8	58.8	+ 0 48.0	69 55 59.7	2 35.2	− 31 4 55.7	+ 15.3	Y.	
45	. .	. .	. .	− 0 43.8	80 29 20.8	5 28.3	− 41 41 9.8	+ 16.9	Y.	
46	. .	. .	58.0	+ 2 13.3	62 22 22.0	1 48.9	− 23 30 31.7	+ 13.1	Y.	
47	. .	. .	. .	− 2 35.4	27 52 37.4	30.3	+ 11 0 31.6	+ 3.5	Y.	
48	29.976	62.3	57.4	+ 0 29.4	17 35 39.0	18.2	+ 21 17 42.0	+ 0.4	Y.	
49	. .	. .	. .	− 0 30.8	70 14 41.6	2 38.3	− 31 23 40.7	+ 13.9	Y.	
50	. .	. .	. .	− 2 12.6	35 22 59.8	40.8	+ 3 29 58.7	+ 5.5	Y.	
51	. .	. .	. .	− 4 57.1	79 15 12.2	4 53.5	− 40 26 26.4	+ 14.7	Y.	Corr. −0″.96 applied to mean of C, D, E, F.
52	. .	. .	. .	− 0 10.9	37 10 4.8	43.6	+ 1 42 51.0	+ 5.8	Y.	
53	. .	. .	. .	− 1 8.6	37 9 7.1	43.5	+ 1 43 48.6	+ 5.8	Y.	
54	29.984	61.5	55.6	+ 1 47.5	76 26 57.9	3 54.2	− 37 37 12.9	+ 13.4	Y.	
55	. .	. .	. .	+ 1 53.2	48 52 1.7	1 5.9	− 9 59 28.4	+ 8.2	Y.	
56	. .	. .	. .	− 0 22.7	78 39 49.7	4 39.5	− 39 50 50.0	+ 12.8	Y.	
57	. .	. .	. .	+ 0 15.7	38 45 28.5	46.3	+ 0 7 24.5	+ 6.7	Y.	
58	29.986	61.0	54.6	− 0 42.8	45 44 24.6	59.1	− 6 51 44.5	+ 7.0	Y.	
59	. .	. .	. .	− 1 53.4	64 8 16.1	1 58.5	− 25 16 35.3	+ 9.7	Y.	
60	. .	. .	. .	− 0 10.8	64 9 58.8	1 58.6	− 25 18 18.1	+ 9.7	Y.	
61	. .	. .	. .	− 0 6.4	73 15 2.0	3 9.4	− 34 24 32.1	+ 10.4	Y.	
62	29.980	60.2	53.8	+ 0 6.3	38 5 18.7	45.2	+ 0 47 35.3	+ 5.1	Y.	
63	. .	. .	. .	− 0 39.4	77 44 27.5	4 19.7	− 38 55 8.0	+ 9.7	Y.	
64	. .	. .	. .	+ 1 41.6	73 16 52.3	3 10.1	− 34 26 23.2	+ 8.8	Y.	
65	29.980	59.5	53.0	+ 0 2.0	S. 65 35 12.6	2 6.8	− 26 43 40.1	+ 7.8	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Apr. 30	1	Lacaille 5559	6.7	3	III–VII.	85	35	1.8	16.4	10.8	17.8	11.2	5.3	10.55	30.212	−0.197	30.020
	2	Lacaille 5563	7.0	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	31.377	. .	31.198
	3	Anon. 13^h 28^m 26^s	7.0	3	IV–VI.	90	35	0.5	14.2	7.7	13.0	8.1	1.7	7.53	33.369	. .	33.174
	4	Anon. 13^h 29^m 26^s	7.3	3	IV–VI.	“	“	“	“	“	“	“	“	“	29.797	. .	29.602
	5	Anon. 13^h 38^m 42^s	8.0	3	I–IX.	93	20	3.4	17.9	10.2	17.8	12.8	6.2	11.38	27.171	. .	26.996
	6	Lacaille 5743	6.7	3	III–VII.	92	50	2.7	17.4	9.6	17.2	11.2	4.9	10.50	34.494	. .	34.303
	7	Nadir	. .	.	. .	200	0	5.0	18.2	12.0	19.4	12.7	9.0	12.72	30.488	. .	. .
May 4	8	γ Antliæ	. .	3	III–VII.	87	50	3.8	13.7	6.6	11.3	12.3	8.9	9.43	28.231	−0.199	28.037
	9	Lalande 20482	8.0	3	III–VII.	69	20	0.3	10.4	6.0	8.1	10.2	6.1	6.85	30.913	. .	30.716
	10	33 Sextantis	6.0	3	III–VII.	59	54	59.0	68.0	63.1	64.7	68.2	64.9	64.65	27.383	. .	27.184
	11	O. Arg. S. 10887	. .	3	III–VII.	89	44	58.8	69.8	63.1	66.0	68.2	63.9	64.97	27.415	. .	27.222
	12	55 Leonis	6.0	3	III–VII.	57	30	1.8	11.5	6.3	7.8	11.8	7.9	7.85	35.622	. .	35.423
	13	Lacaille 4599	6.5	3	III–VII.	90	45	3.9	13.4	8.2	9.9	12.8	8.3	9.42	31.887	. .	31.694
	14	Weisse (2) XI, 58	8.7	3	III–VII.	25	35	1.2	10.8	5.8	6.0	10.4	5.3	6.58	31.895	. .	31.690
	15	Weisse XI, 211	. .	3	III–VII.	72	55	4.7	15.6	8.2	12.7	14.6	9.1	10.82	28.626	. .	28.429
	16	Weisse XI, 358	. .	3	V, VII, IX.	59	5	0.0	10.1	4.7	5.9	10.8	6.8	6.38	32.465	. .	32.273
	17	Lacaille 4802	. .	3	III–VII.	94	15	3.3	12.6	7.8	10.4	13.6	8.9	9.43	30.815	. .	30.623
	18	Nadir	. .	.	. .	200	0	4.2	13.4	8.7	11.1	12.8	11.2	10.23	30.408	. .	. .
	19	Nadir	. .	.	. .	199	55	1.4	11.8	6.2	10.4	11.1	8.4	8.22	20.750	. .	. .
	20	Nadir	. .	.	. .	200	0	0.9	11.8	5.4	9.8	10.9	8.1	7.82	30.333	. .	. .
	21	Nadir	. .	.	. .	200	5	1.9	13.0	6.6	12.5	11.6	9.0	9.10	39.936	. .	. .
	22	Nadir	. .	.	. .	200	0	0.6	12.4	5.3	10.2	10.9	8.0	7.90	30.332	. .	. .
6	23	Nadir	. .	.	. .	200	0	1.8	10.6	6.8	9.8	9.6	6.6	7.53	30.298	. .	. .
	24	Nadir	. .	.	. .	200	5	1.5	11.2	7.0	10.9	9.6	6.5	7.78	39.864	. .	. .
	25	Nadir	. .	.	. .	200	0	2.2	12.5	7.8	12.3	11.6	7.9	9.05	30.356	. .	. .
	26	Nadir	. .	.	. .	199	55	1.7	12.5	7.8	11.2	11.2	7.5	8.65	20.740	. .	. .
	27	Nadir	. .	.	. .	200	0	0.8	11.8	7.3	11.1	10.7	6.6	8.05	30.332	. .	. .
7	28	B. A. C. 3563	. .	3	V, VII, IX.	65	15	1.3	11.1	6.4	10.8	10.2	4.1	7.32	26.266	−0.188	26.087
	29	50 Leonis	6.0	3	III–VII.	42	5	4.1	16.4	11.3	14.5	14.6	8.8	11.62	30.365	. .	30.174
	30	Weisse X, 702	8.5	3	III–VII.	44	50	3.5	14.9	10.2	13.2	13.5	7.3	10.43	31.543	. .	31.353
	31	O. Arg. S. 10941	8.5	3	III–VII.	88	20	0.7	12.1	6.9	10.3	9.1	3.6	7.12	28.254	. .	28.071
	32	Lacaille 4607	6.0	3	III–VII.	96	35	0.5	14.2	8.9	12.9	11.2	4.8	8.75	35.487	. .	35.306
	33	ξ Ursæ Majoris	. .	3	III–VII.	26	35	4.2	16.7	12.1	14.8	13.6	8.0	11.57	25.046	. .	24.852
	34	B. A. C. 3928	. .	3	III–VII.	90	0	2.2	16.2	10.2	13.3	11.4	5.9	9.87	31.166	. .	30.984
	35	Nadir	. .	.	. .	200	0	4.2	15.1	10.5	16.4	11.2	10.0	11.23	30.429	. .	. .
	36	Anon. 12^h 13^m 14^s	7.0	2	IV, IX.	86	40	2.5	15.8	11.4	17.1	12.7	7.8	11.22	30.904	. .	30.735
	37	Weisse XII, 452	. .	3	III–VII.	52	10	2.7	13.8	10.2	15.6	11.9	8.2	10.40	26.475	. .	26.286
9	38	Anon. 10^h 26^m 49^s	8.3	3	V, VII, IX.	54	0	2.0	12.2	7.1	10.2	10.2	4.4	7.68	35.621	−0.181	35.445
	39	Carrington 1637	8.3	3	IV–VI.	337	10	3.2	12.4	11.2	12.4	11.7	6.5	9.57	30.758	. .	30.557
	40	Anon. 11^h 0^m 58^s	8.0	3	V, VII, IX.	91	40	5.2	17.0	12.0	16.8	14.8	8.9	12.45	26.297	. .	26.136
	41	Weisse XI, 137	9.0	3	III–VII.	61	50	2.3	13.2	8.1	11.9	10.7	6.9	8.85	32.592	. .	32.411
	42	O. Arg. S. 11410	. .	3	III–VII.	82	0	2.2	13.1	8.5	12.9	11.2	5.2	8.85	32.882	. .	32.705
	43	Lacaille 4814	7.0	3	V, VII, IX.	97	30	4.1	17.5	11.8	15.9	13.7	7.2	11.70	34.106	. .	33.949
	44	Lacaille 4830	8.3	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	31.293	. .	31.136
	45	Anon. 11^h 42^m 6^s	6.8	3	IV–VI.	94	10	4.1	15.4	10.3	15.3	13.1	7.5	10.95	37.262	. .	37.083
	46	Anon. 11^h 48^m 58^s	8.8	3	V, VII, IX.	47	44	59.0	68.3	64.4	67.7	68.1	63.1	65.10	23.611	. .	23.433
	47	O. Arg. S. 11917	6.5	3	III–VII.	89	35	3.5	16.4	10.2	14.8	12.1	7.1	10.68	35.609	. .	35.434
	48	Weisse XII, 221	9.5	2	V, IX.	50	20	3.4	13.6	9.8	13.9	12.9	8.5	10.35	36.664	. .	36.486
	49	Anon. 12^h 37^m 11^s	8.5	3	III–VII.	95	20	4.9	17.2	11.8	16.4	14.1	8.1	12.08	27.437	. .	27.263
	50	Lacaille 5302	6.5	3	III–VII.	89	20	1.4	13.2	8.1	11.8	9.2	3.9	7.93	28.494	. .	28.319
	51	Lacaille 5347	. .	3	III–VII.	101	45	1.7	14.2	7.7	13.0	9.6	3.2	8.23	25.179	. .	25.007
	52	a^1 Ursæ Minoris, S. P.	. .	3	5, 4, V.	327	30	2.8	13.2	11.2	14.0	12.2	5.4	9.80	27.833	. .	27.655
	53	B. A. C. 4536	5.5	3	III–VII.	21	0	0.6	12.7	8.0	12.8	10.5	4.7	8.22	25.392	. .	25.204
	54	Nadir	. .	.	. .	200	0	4.2	16.1	11.1	17.1	12.6	10.0	11.85	30.440	. .	. .
11	55	43 Leonis Minoris	. .	3	III–VII.	28	45	0.0	13.9	8.8	15.1	10.7	4.2	8.78	26.168	−0.187	25.975
	56	Lacaille 4543	7.0	3	III–VII.	93	15	2.4	16.9	11.5	19.3	11.1	5.4	11.10	25.573	. .	25.393
	57	Lacaille 4616	7.0	3	III–VII.	97	35	3.3	18.9	12.6	18.9	13.1	6.2	12.17	29.021	. .	28.842
	58	Anon. 11^h 9^m 22^s	7.2	3	III–VII.	96	20	4.1	19.4	13.6	19.8	15.2	7.5	13.32	24.840	. .	24.660
	59	Lacaille 4746	7.8	3	III–VII.	96	15	1.5	17.4	12.6	17.2	11.9	5.0	10.93	27.397	. .	27.217
	60	Anon. 11^h 27^m 55^s	6.8	3	III–VII.	99	15	2.4	17.3	11.2	17.6	11.5	4.4	10.73	30.220	. .	30.041
	61	Lacaille 4881	6.7	3	III–VII.	86	5	2.6	17.4	12.2	19.5	13.8	6.1	11.93	28.302	. .	28.120
	62	Anon. 11^h 46^m 11^s	7.0	3	III–VII.	96	25	2.2	19.2	12.2	19.8	13.8	6.1	12.22	26.796	. .	26.616
	63	Anon. 11^h 56^m 5^s	8.5	3	III–VII.	68	45	0.0	14.6	9.7	17.1	9.8	2.6	8.97	24.350	. .	24.165
	64	Lacaille 5065	5.5	3	III–VII.	97	0	3.2	19.8	14.1	21.0	14.3	7.0	13.23	26.575	. .	26.396
	65	Lacaille 5102	7.3	3	III–VII.	95	55	0.0	15.9	10.0	16.1	10.7	2.7	9.23	31.006	−0.187	30.826

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 0.6	S. 65 35 9.9	2 6.8	− 26 43 37.5	+ 7.4	Y.	
2	. .	. .	. .	− 0 37.5	65 34 33.0	2 6.7	− 26 43 0.5	+ 7.4	Y.	
3	. .	. .	. .	− 1 39.5	70 33 28.1	2 42.4	− 31 42 31.3	+ 7.4	Y.	
4	. .	. .	. .	+ 0 12.4	70 35 20.0	2 42.7	− 31 44 23.4	+ 7.3	Y.	
5	. .	. .	. .	+ 1 34.0	73 21 45.4	3 11.7	− 34 31 17.8	+ 6.9	Y.	
6	29.980	58.8	52.6	− 2 14.9	72 47 55.6	3 4.8	− 33 57 21.2	+ 6.4	Y.	
7	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
8	29.768	69.9	71.3	+ 1 4.4	67 51 10.9	2 15.2	− 28 59 46.8	+ 15.6	Y.	
9	. .	. .	. .	− 0 22.4	49 19 44.4	1 4.4	− 10 27 9.6	+ 10.4	Y.	
10	. .	. .	70.5	+ 1 28.1	39 56 32.8	46.4	− 1 3 39.9	+ 7.5	Y.	
11	. .	. .	. .	+ 1 26.9	69 46 31.9	2 29.3	− 30 55 22.0	+ 15.4	Y.	
12	29.770	69.4	70.2	− 2 50.0	37 27 17.8	42.5	+ 1 25 38.9	+ 6.5	Y.	
13	. .	. .	. .	− 0 53.1	70 44 16.4	2 37.7	− 31 53 14.8	+ 15.0	Y.	
14	. .	. .	. .	− 0 52.9	5 34 13.6	5.4	+ 33 19 20.2	− 3.4	Y.	
15	. .	. .	. .	+ 0 49.2	52 56 0.0	1 13.7	− 14 3 34.4	+ 10.4	Y.	
16	29.780	68.9	67.3	− 1 11.2	39 3 55.2	45.3	− 0 11 1.2	+ 6.5	Y.	
17	. .	. .	. .	− 0 19.5	74 14 49.9	3 15.1	− 35 24 25.8	+ 14.4	Y.	
18	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	Y.	
19	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
20	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
22	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
23	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
24	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
25	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
26	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
27	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
28	29.502	66.6	59.4	+ 2 2.4	45 17 9.8	57.6	− 6 24 28.1	+ 9.3	Y.	
29	. .	. .	. .	− 0 5.5	22 5 6.2	23.2	+ 16 48 9.9	+ 1.4	Y.	
30	. .	. .	58.9	− 0 42.4	24 49 28.0	26.4	+ 14 3 44.8	+ 2.2	Y.	
31	. .	. .	. .	+ 1 0.4	68 21 7.5	2 22.8	− 29 29 51.0	+ 15.1	Y.	
32	29.502	65.2	58.9	− 2 46.3	76 32 22.4	3 50.4	− 37 42 33.6	+ 16.3	Y.	
33	. .	. .	. .	+ 2 41.0	6 37 52.6	6.6	+ 32 15 40.1	− 3.6	Y.	
34	. .	. .	58.2	− 0 30.8	69 59 39.1	2 33.2	− 31 8 33.1	+ 14.1	Y.	Cloudy.
35	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
36	29.502	64.1	58.2	− 0 23.0	66 39 48.2	2 9.8	− 27 48 18.7	+ 11.5	Y.	Cloudy.
37	. .	. .	. .	+ 1 56.2	32 12 6.6	35.5	+ 6 40 57.2	+ 3.7	Y.	
38	29.824	68.0	63.4	− 2 50.7	S. 23 57 17.0	38.0	+ 4 55 44.3	+ 5.3	Y.	
39	. .	. .	. .	− 0 17.4	N. 42 50 7.9	52.4	+ 81 44 39.5	− 16.1	Y.	
40	. .	. .	62.2	+ 2 0.9	S. 71 42 13.4	2 49.2	− 32 51 23.3	+ 15.5	Y.	
41	. .	. .	. .	− 1 15.6	41 48 53.3	50.6	− 2 56 4.6	+ 7.3	Y.	
42	29.830	67.3	61.2	− 1 24.8	61 58 44.1	1 45.9	− 23 6 50.8	+ 12.6	Y.	
43	. .	. .	. .	− 2 3.8	77 28 7.9	4 8.9	− 38 38 37.6	+ 15.4	Y.	
44	. .	. .	. .	− 0 35.6	77 29 36.1	4 9.4	− 38 40 6.2	+ 15.4	Y.	
45	. .	. .	. .	− 3 42.2	74 6 28.8	3 16.1	− 35 16 5.6	+ 14.4	Y.	
46	29.840	66.8	61.1	+ 3 25.3	27 48 30.4	29.9	+ 11 4 38.9	+ 2.6	Y.	
47	. .	. .	. .	− 2 50.4	69 32 20.3	2 30.7	− 30 41 11.8	+ 12.7	Y.	
48	29.836	66.2	60.0	− 3 23.5	30 16 46.9	33.1	+ 8 36 19.2	+ 3.2	Y.	
49	. .	. .	. .	+ 1 25.7	75 21 37.7	3 33.8	− 36 31 32.3	+ 11.9	Y.	
50	. .	. .	. .	+ 0 52.6	69 21 0.6	2 29.6	− 30 29 50.9	+ 10.7	Y.	
51	29.846	65.5	59.0	+ 2 36.2	S. 81 47 44.4	6 23.5	− 43 0 28.7	+ 11.8	Y.	
52	. .	. .	58.7	+ 1 13.4	N. 52 28 36.8	1 15.7	+ 88 36 28.2	+ 11.8	Y.	
53	. .	. .	. .	+ 2 30.0	S. 1 2 38.2	1.1	+ 37 50 59.9	− 2.8	Y.	
54	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
55	29.832	59.5	52.7	+ 2 5.9	8 47 14.7	8.9	+ 30 6 15.6	− 3.6	Y.	
56	. .	. .	. .	+ 2 24.1	73 17 35.2	3 9.7	− 34 27 5.6	+ 16.1	Y.	
57	29.840	58.9	51.7	+ 0 36.2	77 35 48.4	4 16.5	− 38 46 25.7	+ 16.7	Y.	
58	. .	. .	. .	+ 2 47.0	76 23 0.4	3 53.9	− 37 33 15.0	+ 16.2	Y.	
59	. .	. .	. .	+ 1 27.1	76 16 38.0	3 52.3	− 37 26 51.1	+ 15.0	Y.	
60	29.850	58.1	50.8	− 0 1.3	79 15 9.4	4 55.6	− 40 26 25.8	+ 16.0	Y.	
61	. .	. .	. .	+ 0 58.8	66 6 10.8	2 9.9	− 27 14 41.4	+ 12.9	Y.	
62	29.858	57.6	50.4	+ 1 45.9	76 26 58.1	3 55.7	− 37 37 14.6	+ 14.7	Y.	
63	. .	. .	. .	+ 3 2.5	48 48 11.5	1 6.1	− 9 55 38.4	+ 8.2	Y.	
64	. .	. .	. .	+ 1 52.8	77 2 6.0	4 6.6	− 38 12 33.3	+ 13.9	Y.	
65	29.872	57.0	50.0	− 1 25.9	S. 75 54 43.4	3 47.0	− 37 4 51.1	+ 13.4	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. May 11	1	B. A. C. 4202. . .	5.8	3	III–VII.	97 10 2.4	18.8	12.3	19.9	13.2	5.5	12.02	32.520	−0.187	32.341
	2	Anon. $12^h\ 26^m\ 48^s$.	8.2	3	III–VII.	91 25 3.4	20.2	13.4	19.7	14.5	6.5	12.95	32.285	. .	32.104
	3	Lacaille 5234. . .	7.7	3	III–VII.	96 0 0.7	16.5	10.9	17.8	11.5	3.9	10.22	33.187	. .	33.007
	4	Anon. $12^h\ 38^m\ 35^s$.	7.5	3	III–VII.	“ “ “	“	“	“	“	“	“	37.025	. .	36.845
	5	Anon. $12^h\ 43^m\ 40^s$.	7.0	3	III–VII.	71 10 2.6	16.8	12.2	19.4	12.4	6.8	11.70	26.517	. .	26.332
	6	Lacaille 5340. . .	7.2	3	III–VII.	90 25 4.0	19.8	13.5	19.5	13.5	6.2	12.75	26.977	. .	26.796
	7	Anon. $12^h\ 57^m\ 19^s$.	9.0	3	III–VII.	95 55 1.2	18.2	11.8	18.0	12.2	4.8	11.03	29.211	. .	29.031
	8	Anon. $13^h\ 4^m\ 26^s$.	7.5	3	III–VII.	95 30 1.8	17.5	11.9	18.7	12.1	4.9	11.15	25.852	. .	25.672
	9	Weisse XIII, 312 .	8.5	3	III–VII.	57 0 oblit.	15.9	11.2	18.6	11.8	6.1	11.18	33.405	. .	33.218
	10	Anon. $13^h\ 27^m\ 35^s$.	9.0	3	III–VII.	85 30 1.1	16.3	12.2	19.4	11.2	4.2	10.73	32.280	. .	32.098
	11	Anon. $13^h\ 35^m\ 25^s$.	9.0	3	III–VII.	96 30 0.6	17.2	10.9	17.8	11.1	3.1	10.12	29.528	. .	29.348
	12	Lacaille 5686. . .	7.5	3	III–VII.	86 34 59.0	74.4	69.9	78.1	69.9	62.4	68.95	31.296	. .	31.114
	13	Lacaille 5769. . .	7.2	3	III–VII.	96 20 0.0	16.6	10.2	17.9	10.4	1.6	9.45	27.025	. .	26.845
	14	Anon. $13^h\ 53^m\ 1^s$.	7.5	3	III–VII.	“ “ “	“	“	“	“	“	“	31.682	. .	31.502
	15	O. Arg. S. 13394. .	8.0	3	V, VII, IX.	85 35 1.0	15.7	13.0	20.0	12.2	4.0	10.98	30.326	. .	30.157
	16	Anon. $14^h\ 7^m\ 57^s$.	8.8	3	III–VII.	95 50 4.1	21.8	15.7	23.5	15.8	8.9	14.97	31.605	. .	31.425
	17	Lacaille 5923. . .	5.8	3	III–VII.	91 20 1.7	18.8	12.1	18.9	12.2	4.7	11.40	29.459	. .	29.278
	18	Lacaille 5967. . .	7.5	3	III–VII.	92 55 4.4	21.6	13.9	22.2	14.1	6.9	13.85	27.392	. .	27.212
	19	Anon. $14^h\ 29^m\ 41^s$.	8.3	2	I, IX.	86 34 59.1	74.8	70.4	78.2	69.9	63.3	69.28	29.382	. .	29.221
	20	Anon. $14^h\ 29^m\ 32^s$.	8.6	2	V, VII.	“ “ “	“	“	“	“	“	“	36.406	. .	36.227
	21	Nadir	. .	.	. .	200 0 1.2	16.7	11.8	21.1	9.4	6.5	11.12	30.424	. .	. .
14	22	Lacaille 4672. . .	. .	3	III–VII.	97 25 3.3	15.4	10.1	13.3	12.7	8.3	10.52	26.381	−0.186	26.203
	23	Weisse (2) XI, 340 .	8.0	3	III–VII.	37 45 2.2	12.1	7.5	10.8	11.4	7.9	8.65	27.552	. .	27.362
	24	B. A. C. 3927 . .	5.5	3	III–VII.	98 30 3.9	15.2	8.2	12.3	12.7	8.2	10.08	25.346	. .	25.168
	25	Lacaille 4833. . .	7.7	3	III–VII.	93 5 2.7	14.6	7.5	12.5	10.2	7.8	9.22	27.456	. .	27.276
	26	Lacaille 4886. . .	5.5	3	III–VII.	94 0 0.4	10.2	3.9	7.8	8.8	4.0	5.85	27.088	. .	26.909
	27	Anon. $11^h\ 56^m\ 0^s$.	8.5	3	III–VII.	68 50 2.8	12.8	8.5	12.1	11.8	7.9	9.32	26.534	. .	26.350
	28	O. Arg. S. 11944. .	9.0	3	V, VII, IX.	86 10 1.3	12.6	8.5	12.4	12.4	7.4	9.10	35.746	. .	35.565
	29	Anon. $12^h\ 14^m\ 7^s$.	8.8	3	III–VII.	84 30 1.8	12.5	9.2	12.8	12.5	7.4	9.37	27.125	. .	26.944
	30	16 Comæ.	5.5	3	III–VII.	31 20 3.4	15.3	9.4	13.9	14.7	11.0	11.28	29.258	. .	29.067
	31	B. A. C. 4255. . .	6.0	3	III–VII.	62 35 2.2	12.5	7.5	12.2	12.1	8.8	9.22	35.498	. .	35.313
	32	B. A. C. 4297. . .	5.5	3	III–VII.	85 45 4.0	13.4	9.7	13.6	13.3	8.0	10.33	30.754	. .	30.573
	33	Weisse XII, 834. .	7.2	3	III–VII.	73 10 3.1	14.8	9.9	15.5	13.6	8.0	10.82	36.006	. .	35.822
	34	Anon. $12^h\ 51^m\ 15^s$.	6.0	3	III–VII.	“ “ “	“	“	“	“	“	“	31.664	. .	31.480
	35	Lacaille 5426. . .	5.5	3	III–VII.	93 15 0.9	11.6	6.1	11.1	8.9	5.3	7.32	26.533	. .	26.354
	36	Lacaille 5478. . .	6.0	3	III–VII.	86 30 0.2	10.9	6.6	11.0	8.9	5.9	7.25	29.836	. .	29.655
	37	69 Virginis	5.0	3	III–VII.	74 10 0.2	10.7	6.2	11.2	9.7	4.3	7.05	29.655	. .	29.472
	38	Anon. $13^h\ 30^m\ 3^s$.	. .	3	III–VII.	94 45 2.7	14.6	9.5	14.5	12.8	6.8	10.15	30.716	. .	30.537
	39	Anon. $13^h\ 36^m\ 43^s$.	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	31.229	. .	31.050
	40	O. Arg. S. 13158. .	7.0	3	III–VII.	80 55 1.8	12.1	6.9	11.3	9.8	5.4	7.88	27.391	. .	27.209
	41	Anon. $13^h\ 49^m\ 7^s$.	8.0	3	IV–VI.	96 30 0.8	13.8	7.3	11.9	10.6	4.8	8.20	19.910	. .	19.726
	42	B. A. C. 4680. . .	6.0	3	III–VII.	67 30 2.1	12.8	8.3	12.8	11.5	7.7	9.20	29.332	. .	29.147
	43	Lacaille 5877. . .	6.5	3	III–VII.	93 15 3.4	13.9	8.6	14.2	11.2	7.9	9.87	30.906	. .	30.727
	44	Lacaille 5915. . .	7.2	3	IV–VI.	84 59 59.4	70.8	66.3	70.9	68.4	64.1	66.65	24.179	. .	23.994
	45	B. A. C. 4800. . .	7.0	3	III–VII.	83 35 0.8	12.2	6.7	12.0	9.4	5.2	7.72	28.624	. .	28.442
	46	Lacaille 6020. . .	6.5	3	III–VII.	93 35 2.4	14.2	7.9	14.1	11.7	7.0	9.55	34.078	. .	33.899
	47	Nadir	. .	.	. .	200 0 1.4	12.7	7.2	13.1	10.3	7.5	8.70	30.344	. .	. .
16	48	Anon. $11^h\ 14^m\ 25^s$.	. .	3	III–VII.	93 50 1.4	9.5	5.3	6.7	10.2	6.0	6.52	28.143	−0.201	27.949
	49	O. Arg. S. 11446. .	7.5	3	III–VII.	86 55 3 1	11.1	8.1	8.9	12.1	7.9	8.53	27.599	. .	27.403
	50	Weisse (2) XI, 534 .	8.8	3	IV–VI.	31 9 57.7	65.7	62.9	61.2	67.4	62.0	62.82	26.866	. .	26.663
	51	Weisse XI, 680 . .	7.5	3	III–VII.	61 10 0.9	9.0	6.1	6.2	9.3	6.1	6.27	30.826	. .	30.625
	52	Lalande 22566 . .	. .	3	III–VII.	24 10 1.7	9.5	6.7	5.0	10.8	5.3	6.50	34.129	. .	33.927
	53	O. Arg. S. 11944. .	9.0	2	VIII, IX.	86 5 0.0	8.3	5.9	6.4	9.2	3.5	5.55	25.739	. .	25.570
	54	Weisse XII, 221. .	9.2	3	IV, VI, VIII.	50 20 0.2	7.1	5.1	4.1	8.7	5.0	5.03	29.231	. .	29.029
	55	O. Arg. S. 12173. .	8.3	3	III–VII.	88 15 3.2	11.3	7.8	7.8	10.8	7.1	8.00	33.427	. .	33.231
	56	O. Arg. S. 12243. .	8.8	3	III–VII.	81 40 2.9	11.6	7.8	8.1	10.5	5.9	7.80	30.928	. .	30.731
	57	Anon. $12^h\ 36^m\ 15^s$.	9.0	2	III, VI.	94 10 2.2	11.2	7.3	8.8	10.7	6.7	7.82	33.364	. .	33.168
	58	B. A. C. 4331. . .	. .	3	III–VII.	102 15 0.3	9.7	5.9	7.2	8.8	4.2	6.02	32.803	. .	32.611
	59	Lacaille 5374. . .	7.5	3	III–VII.	87 50 4.4	12.1	9.1	10.1	11.8	7.2	9.12	31.516	. .	31.320
	60	Lacaille 5440. . .	7.5	3	III–VII.	87 15 2.3	10.4	7.2	8.9	10.2	5.5	7.42	28.208	. .	28.012
	61	Lacaille 5502. . .	7.5	3	III–VII.	97 0 2.8	13.1	9.1	10.9	11.8	6.5	9.03	30.383	. .	30.190
	62	B. A. C. 4507. . .	3.5	3	III–VII.	97 35 1.2	12.1	8.2	9.1	10.8	5.0	7.73	32.706	. .	32.513
	63	Lacaille 5636. . .	7.0	3	III–VII.	92 35 1.8	11.2	7.2	8.9	9.7	4.2	7.17	34.698	. .	34.503
	64	Weisse XIII, 694 .	7.0	3	III–VII.	66 15 3.3	12.2	10.2	10.9	13.2	7.9	9.62	30.419	. .	30.219
	65	Lalande 25635 . .	5.0	3	III–VII.	81 15 0.9	10.3	6.8	7.1	8.3	3.9	6.22	29.873	. .	29.676
	66	O. Arg. S. 13387. .	6.7	3	III–VII.	85 34 59.6	68.8	67.2	68.8	69.4	62.4	66.03	29.155	−0.201	28.959

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 1 13.4	S. 77 8 58.6	4 8.9	— 38 19 28.3	+ 13.2	Y.	
2	. .	. .	. .	— 1 5.9	71 24 7.0	2 50.7	— 32 33 18.5	+ 12.0	Y.	
3	. .	. .	. .	— 1 34.2	75 58 36.0	3 48.1	— 37 8 44.8	+ 12.4	Y.	
4	29.886	56.7	50.1	— 3 34.7	75 56 35.5	3 47.6	— 37 6 43.8	+ 12.1	Y.	
5	. .	. .	. .	+ 1 54.8	51 12 6.5	1 12.1	— 12 19 39.3	+ 7.5	Y.	
6	. .	. .	. .	+ 1 40.2	70 26 53.0	2 41.8	— 31 35 55.6	+ 10.7	Y.	
7	. .	. .	. .	+ 0 30.3	75 55 41.4	3 47.5	— 37 5 49.6	+ 11.1	Y.	
8	29.876	56.3	49.6	+ 2 15.4	75 32 26.6	3 41.4	— 36 42 28.7	+ 10.6	Y.	Corr. —0′.74 applied to mean of C, D, E, F.
9	. .	. .	. .	— 1 40.9	36 58 30.3	43.7	+ 1 54 25.2	+ 3.9	Y.	
10	. .	. .	. .	— 1 5.7	65 29 5.0	2 6.7	— 26 37 32.4	+ 8.2	Y.	
11	. .	. .	. .	+ 0 20.4	76 30 30.5	3 57.4	— 37 40 48.7	+ 9.0	Y.	
12	29.870	55.8	49.2	— 0 34.9	66 34 34.0	2 13.3	— 27 43 8.1	+ 7.7	Y.	
13	. .	. .	. .	+ 1 38.7	76 21 48.2	3 55.0	— 37 32 3.9	+ 8.0	Y.	
14	. .	. .	. .	— 0 47.1	76 19 22.4	3 54.3	— 37 29 37.4	+ 7.9	Y.	
15	. .	. .	. .	— 0 4.9	65 35 6.0	2 7.4	— 26 43 34.1	+ 6.6	Y.	
16	29.876	55.4	48.9	— 0 44.7	75 49 30.3	3 46.2	— 36 59 37.2	+ 6.9	Y.	
17	. .	. .	. .	+ 0 22.6	71 20 34.0	2 50.5	— 32 29 45.3	+ 6.2	Y.	
18	. .	. .	. .	+ 1 27.2	72 56 41.1	3 7.3	— 34 6 9.2	+ 5.8	Y.	
19	. .	. .	. .	+ 0 24.4	66 35 33.7	2 13.6	— 27 44 8.0	+ 5.2	Y.	
20	29.876	55.2	48.7	— 3 15.3	66 31 54.0	2 13.2	— 27 40 27.9	+ 5.2	Y.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
22	30.004	69.0	65.8	+ 1 58.8	77 27 9.3	4 7.7	— 38 37 37.8	+ 16.5	Y.	
23	. .	. .	. .	+ 1 22.6	17 46 31.2	18.1	+ 21 6 49.9	— 1.0	Y.	
24	. .	. .	65.4	+ 2 31.2	78 32 41.2	4 31.0	— 39 43 33.0	+ 16.1	Y.	
25	. .	. .	. .	+ 1 25.2	73 6 34.5	3 3.8	— 34 15 59.0	+ 14.8	Y.	
26	30.006	68.4	64.7	+ 1 36.7	74 1 42.6	3 14.8	— 35 11 18.1	+ 14.7	Y.	
27	. .	. .	. .	+ 1 54.2	48 52 3.5	1 4.8	— 9 59 29.0	+ 8.1	Y.	
28	. .	. .	. .	— 2 54.8	66 7 14.3	2 7.3	— 27 15 42.3	+ 12.4	Y.	
29	. .	. .	. .	+ 1 35.6	64 31 45.0	1 58.5	— 25 40 4.2	+ 11.4	Y.	
30	30.012	67.7	62.8	+ 0 29.2	11 20 40.5	11.4	+ 27 32 47.4	— 2.8	Y.	
31	. .	. .	. .	— 2 46.6	42 32 22.7	52.1	— 3 39 35.5	+ 5.6	Y.	
32	. .	. .	62.4	— 0 17.9	65 44 52.4	2 5.4	— 26 53 18.5	+ 10.5	Y.	
33	. .	. .	. .	— 3 2.6	53 7 8.2	1 15.6	— 14 14 44.6	+ 7.7	Y.	
34	30.018	67.1	62.6	— 0 46.4	53 9 24.4	1 15.7	— 14 17 0.9	+ 7.7	Y.	
35	. .	. .	. .	+ 0 54.1	73 17 1.4	3 6.8	— 34 26 29.0	+ 10.6	Y.	
36	. .	. .	62.0	+ 0 10.8	66 30 18.0	2 10.0	— 27 38 48.8	+ 9.3	Y.	
37	. .	. .	. .	+ 0 16.5	54 10 23.6	1 18.6	— 15 18 2.9	+ 6.9	Y.	
38	. .	. .	. .	— 0 16.8	74 44 53.3	3 25.4	— 35 54 39.5	+ 9.4	Y.	
39	30.022	66.5	62.0	— 0 32.9	74 44 37.2	3 25.4	— 35 54 23.4	+ 9.0	Y.	
40	. .	. .	. .	+ 1 27.3	60 56 35.2	1 42.1	— 22 4 38.0	+ 7.1	Y.	
41	. .	. .	. .	+ 5 21.0	76 35 29.2	3 54.0	— 37 45 43.9	+ 8.4	Y.	
42	. .	. .	61.8	+ 0 26.7	47 30 35.9	1 2.1	— 8 37 58.7	+ 4.6	Y.	
43	. .	. .	. .	— 0 22.8	73 14 47.1	3 6.9	— 34 24 14.7	+ 7.0	Y.	
44	30.024	65.7	59.8	+ 3 7.8	65 3 14.5	2 2.2	— 26 11 37.4	+ 6.0	Y.	
45	. .	. .	. .	+ 0 48.8	63 35 56.5	1 54.7	— 24 44 11.9	+ 5.5	Y.	
46	30.020	65.3	59.0	— 2 22.2	73 33 7.3	3 11.3	— 34 42 39.4	+ 5.7	Y.	
47	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
48	29.846	75.2	73.2	+ 1 4.2	73 51 10.7	3 8.4	— 35 0 39.9	+ 15.8	Y.	
49	. .	. .	. .	+ 1 21.3	66 56 29.8	2 9.3	— 28 4 59.8	+ 13.8	Y.	
50	. .	. .	72.4	+ 1 44.4	11 11 47.3	11.0	+ 27 41 41.0	— 3.3	Y.	
51	. .	. .	. .	— 0 19.6	41 9 46.7	48.4	— 2 16 55.9	+ 6.2	Y.	
52	29.848	74.8	71.7	— 2 3.1	4 8 3.4	4.0	+ 34 45 31.8	— 5.3	Y.	
53	. .	. .	. .	+ 2 18.6	66 7 24.1	2 4.8	— 27 15 49.7	+ 12.3	Y.	
54	. .	. .	. .	+ 0 30.4	30 20 35.4	32.6	+ 8 32 31.2	+ 2.5	Y.	
55	. .	. .	. .	— 1 41.3	68 13 26.7	2 18.4	— 29 22 5.9	+ 12.1	Y.	
56	29.858	73.7	69.2	— 0 22.9	61 39 44.9	1 43.0	— 22 47 48.6	+ 11.5	Y.	Very faint.
57	. .	. .	. .	— 1 39.3	74 8 28.5	3 13.6	— 35 18 2.9	+ 12.5	Y.	
58	. .	. .	68.0	— 1 21.8	82 13 44.2	6 26.0	— 43 26 31.0	+ 13.1	Y.	
59	. .	. .	. .	— 0 41.3	67 49 27.8	2 16.3	— 28 58 4.9	+ 10.4	Y.	
60	29.856	72.6	66.7	+ 1 2.2	67 16 9.6	2 12.9	— 28 24 43.2	+ 9.9	Y.	
61	. .	. .	. .	— 0 6.0	77 0 3.1	3 57.7	— 38 10 21.5	+ 10.8	Y.	
62	. .	. .	66.1	— 1 18.8	77 33 49.0	4 8.5	— 38 44 18.2	+ 10.4	Y.	
63	. .	. .	. .	— 2 21.2	72 32 46.0	2 56.5	— 33 42 3.2	+ 9.2	Y.	
64	29.854	72.0	65.2	— 0 6.9	46 15 2.7	58.6	— 7 22 22.1	+ 4.9	Y.	
65	. .	. .	. .	+ 0 10.1	61 15 16.4	1 42.1	— 22 23 19.2	+ 6.9	Y.	
66	. .	. .	. .	+ 0 32.6	S. 65 35 38.6	2 3.2	— 26 44 2.5	+ 7.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
May 16	1	Lacaille 5886. . .	. .	3	III–VII.	95 15 0.8	10.8	8.2	9.1	10.2	3.0	7.02	31.727	—0.201	31.533
	2	O. Arg. S. 13626. .	. .	3	III–VII.	86 10 1.8	12.2	9.8	12.3	13.4	6.3	9.30	27.461	. .	27.265
	3	σ Bootis.	. .	3	III–VII.	28 35 2.0	10.2	9.0	9.5	12.4	6.3	8.23	30.804	. .	30.597
	4	5 Libræ	5.0	3	III–VII.	73 45 2.9	11.4	10.7	12.7	12.3	6.1	9.35	26.577	. .	26.379
	5	12 Libræ	4.5	3	V, VII, IX.	83 0 1.3	11.5	8.2	10.2	10.2	4.2	7.60	33.412	. .	33.232
	6	Lacaille 6218. . .	6.5	3	III–VII.	88 20 2.0	12.5	8.5	9.6	10.6	5.3	8.08	29.960	. .	29.764
	7	Anon. 15^h 6^m 16^s .	8.0	3	III–VII.	84 25 2.2	14.2	11.1	11.9	13.3	7.5	10.03	29.491	. .	29.295
	8	o^2 Libræ	5.5	3	III–VII.	73 30 4.9	14.0	12.1	14.1	14.3	8.3	11.28	25.704	. .	25.506
	9	Nadir	. .	.	. .	200 0 1.3	11.1	7.8	10.1	9.4	7.1	7.80	30.330	. .	. .
18	10	Weisse XII, 261. .	8.7	3	III–VII.	46 14 58.7	70.2	67.5	68.9	68.6	61.2	65.85	30.987	—0.192	30.793
	11	Nadir	. .	.	. .	200 0 2.3	11.1	9.2	13.1	9.5	6.5	8.62	30.347	. .	. .
19	12	B. A. C. 3906 . .	. .	2	I, 5	337 5 2.3	10.1	11.1	10.6	11.4	5.0	8.42	32.982	. .	32.779
	13	Anon. 11^h 32^m 58^s .	7.7	3	V, VII, IX.	85 0 3.7	12.4	10.9	12.9	11.7	6.5	9.68	31.679	—0.202	31.494
	14	Anon. 11^h 40^m 12^s .	9.5	3	IV–VI.	34 10 1.2	9.2	7.1	8.7	9.4	3.7	6.55	27.567	. .	27.363
	15	Lacaille 4939. . .	6.8	3	III–VII.	83 0 1.8	11.7	8.5	11.2	10.2	3.3	7.78	30.088	. .	29.890
	16	Anon. 11^h 56^m 8^s .	8.5	3	III–VII.	68 50 2.6	12.3	10.6	13.1	12.7	5.9	9.53	26.536	. .	26.336
	17	Anon. 12^h 2^m 13^s .	8.5	2	VII, IX.	91 9 59.1	69.7	66.1	68.1	68.2	60.8	65.33	24.832	. .	24.661
	18	Lacaille 5109. . .	. .	3	III–VII.	100 40 4.0	12.1	9.6	11.9	10.2	4.6	8.73	32.685	. .	32.492
	19	B. A. C. 4202 . .	5.7	3	III–VII.	97 10 0.2	11.1	7.8	8.9	9.2	2.1	6.55	32.073	. .	31.879
	20	Anon. 12^h 26^m 58^s .	9.0	3	V, VII, IX.	91 25 3.5	14.2	10.2	11.7	12.5	5.9	9.67	31.961	. .	31.779
	21	Lacaille 5238. . .	. .	3	III–VII.	102 9 58.4	69.5	64.8	68.1	66.2	59.5	64.42	29.081	. .	28.888
	22	Weisse XII, 722. .	9.0	3	III–VII.	71 15 4.4	13.4	10.4	13.8	13.1	7.5	10.43	33.149	. .	32.949
	23	Weisse XII, 728. .	8.0	1	IX.	" " "	"	"	"	"	"	"	35.939	. .	35.762
	24	Anon. 12^h 57^m 17^s .	8.3	3	III–VII.	75 49 59.4	68.5	67.4	68.2	68.4	60.3	65.37	34.937	. .	34.738
	25	Anon. 13^h 6^m 40^s .	8.5	3	III–VII.	94 5 0.3	9.4	6.8	9.6	8.4	1.3	5.97	28.683	. .	28.488
	26	O. Arg. S. 12800. .	8.5	3	III–VII.	82 40 0.0	8.9	6.8	8.6	7.1	0.4	5.30	27.533	. .	27.335
	27	Lacaille 5499. . .	7.3	3	V, VII, IX.	" " "	"	"	"	"	"	"	31.691	. .	31.505
	28	B. A. C. 4507 . .	4.0	3	III–VII.	97 35 0.4	11.3	7.2	9.7	8.4	1.3	6.38	32.699	. .	32.505
	29	Lacaille 5625. . .	6.0	3	III–VII.	98 15 0.0	9.5	5.3	7.7	7.7	0.7	5.15	34.642	. .	34.448
	30	*i* Centauri	5.0	3	IV–VI.	91 14 57.7	68.4	64.8	67.3	65.9	59.1	63.87	31.884	. .	31.684
	31	B. A. C. 4636 . .	5.7	3	III–VII.	86 45 2.3	12.8	10.1	13.7	11.1	5.1	9.18	26.320	. .	26.123
	32	Weisse (2) XIII, 1167	8.4	3	III–VII.	35 20 1.2	10.8	8.7	10.8	10.2	4.6	7.72	31.410	. .	31.204
	33	O. Arg. S. 13387. .	7.8	3	IV–VI.	85 35 0.1	9.2	8.1	10.9	8.4	1.9	6.43	29.193	. .	28.993
	34	O. Arg. S. 13541. .	7.2	3	III–VII.	86 20 3.6	14.2	12.1	15.4	12.9	7.3	10.92	33.312	. .	33.115
	35	O. Arg. S. 13611. .	7.5	3	III–VII.	85 30 1.1	10.6	9.8	12.0	10.2	4.2	7.98	30.671	. .	30.474
	36	O. Arg. S. 13813. .	6.5	3	IV–VI.	84 35 5.1	16.8	14.8	16.5	14.5	8.9	12.77	33.593	. .	33.392
	37	O. Arg. S. 13814. .	9.0	1	IX.	" " "	"	"	"	"	"	"	34.516	. .	34.351
	38	O. Arg. S. 13996. .	8.0	3	III–VII.	82 35 1.8	11.3	9.2	11.5	9.9	2.9	7.77	26.608	. .	26.410
	39	14 Libræ	7.0	3	IV–VI.	83 45 3.6	15.7	12.3	15.3	12.9	6.9	11.12	27.160	. .	26.959
	40	Nadir	. .	.	. .	199 59 58.3	68.0	65.5	68.5	66.3	63.0	64.93	30.239	. .	. .
21	41	92 Leonis	. .	2	VIII, IX.	36 49 58.1	66.4	63.3	62.4	67.3	61.8	63.22	32.445	. .	32.226
	42	B. A. C. 4006 . .	5.5	3	III–VII.	63 30 3.2	9.7	6.2	7.1	10.8	6.8	7.30	31.362	—0.215	31.148
	43	Lalande 22566 . .	. .	3	V, VII, IX.	24 10 5.5	12.6	10.5	9.5	14.6	9.2	10.32	34.247	. .	34.021
	44	B. A. C. 4106 . .	6.0	3	IV–VI.	336 30 4.5	10.8	12.5	8.3	14.2	8.1	9.73	33.873	. .	33.626
	45	Anon. 12^h 5^m 39^s .	8.5	3	IV–VI.	" " "	"	"	"	"	"	"	34.429	. .	34.182
	46	4 Canum Venaticorum	6.0	3	IV, VI, VIII.	15 40 3.3	10.7	8.2	6.9	11.3	5.4	7.63	34.620	. .	34.421
	47	Nadir	. .	.	. .	200 0 0.1	5.6	4.8	4.5	6.8	5.2	4.50	30.239	. .	. .
June 7	48	62 Virginis	. .	3	III–VII.	69 30 0.9	9.7	7.7	6.8	10.5	6.3	6.98	30.605	—0.180	30.427
	49	O. Arg. N. 13647 .	. .	2	V, VI.	357 0 11.7	21.2	20.1	20.1	24.6	oblit.	18.89	33.918	. .	33.736
	50	Lacaille 5645. . .	6.0	3	III–VII.	91 44 57.9	67.2	64.8	64.7	68.3	62.1	64.17	25.694	. .	25.520
	51	Weisse (2) XIII, 900	. .	3	V, VII, IX.	18 0 2.0	11.1	9.6	7.9	13.7	6.9	8.53	30.741	. .	30.550
	52	Anon. 13^h 51^m 28^s .	7.0	3	III–VII.	95 44 58.4	66.7	65.2	64.4	68.8	61.4	64.15	24.710	. .	24.537
	53	Brisbane 4727 . .	6.5	3	III–VII.	" " "	"	"	"	"	"	"	38.911	. .	38.738
	54	ψ Centauri	5.0	3	III–VII.	96 5 0.4	10.4	6.3	5.5	10.4	3.8	6.13	25.925	. .	25.752
	55	O. Arg. S. 13626. .	8.3	3	III–VII.	86 9 57.9	66.4	65.8	64.8	68.2	61.2	64.05	27.017	. .	26.842
	56	Anon. 14^h 34^m 13^s .	8.8	3	III–VII.	91 5 1.7	8.7	7.1	7.3	10.1	3.8	6.45	27.603	. .	27.429
	57	Lacaille 6054. . .	7.5	1	IX.	" " "	"	"	"	"	"	"	33.087	. .	32.952
	58	Anon. 14^h 49^m 23^s .	8.0	3	III–VII.	85 10 1.1	8.6	8.1	7.9	11.2	5.2	7.02	33.801	. .	33.626
	59	Anon. 14^h 58^m 35^s .	7.0	3	III–VII.	80 45 1.0	9.6	6.9	5.3	9.4	3.1	5.88	28.595	. .	28.419
	60	26 Libræ	6.0	3	III–VII.	76 10 1.5	8.5	8.8	7.2	12.0	4.0	7.00	31.949	. .	31.772
	61	Lacaille 6344. . .	8.0	3	III–VII.	92 35 4.1	12.4	9.1	10.2	12.4	6.8	9.17	35.879	. .	35.705
	62	Anon. 15^h 22^m 31^s .	7.8	3	III–VII.	92 0 2.9	11.9	9.3	9.4	12.2	5.2	8.48	32.796	. .	32.622
	63	Anon. 15^h 29^m 23^s .	9.0	3	III–VII.	90 55 2.2	10.6	8.4	8.6	11.2	5.8	7.80	31.801	. .	31.627
	64	Anon. 15^h 36^m 10^s .	8.0	3	III–VII.	89 9 57.7	67.8	64.1	62.5	66.3	61.3	63.28	31.984	—0.180	31.810

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 48.0	S. 75 14 19.0	3 29.8	− 36 24 9.5	+ 7.2	Y.	
2	29.846	71.2	65.0	+ 1 25.6	66 11 34.9	2 12.8	− 27 20 8.4	+ 6.1	Y.	Faint.
3	. .	. .	. .	− 0 18.7	8 34 49.5	8.5	+ 30 18 41.3	− 1.4	Y.	
4	. .	. .	65.0	+ 1 53.3	53 47 2.7	1 16.5	− 14 54 39.9	+ 4.2	Y.	
5	. .	. .	. .	− 1 41.3	62 58 26.3	1 49.5	− 24 6 36.5	+ 4.5	Y.	
6	29.854	71.0	66.4	+ 0 7.4	68 20 15.5	2 20.1	− 29 28 56.3	+ 4.2	Y.	
7	. .	. .	. .	+ 0 22.1	64 25 32.1	1 56.5	− 25 33 49.3	+ 3.6	Y.	
8	29.858	71.0	67.2	+ 2 20.6	53 32 31.9	1 15.6	− 14 40 8.3	+ 2.8	Y.	
9	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	Y.	
10	30.270	68.8	62.8	− 0 24.8	S. 26 14 41.0	28.2	+ 12 38 30.0	+ 1.1	Y.	
11	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	Y.	
12	30.172	71.9	70.4	− 1 27.1	N. 42 56 18.7	52.3	+ 81 50 50.2	+ 16.6	Y.	
13	. .	. .	. .	− 0 46.8	S. 64 59 22.9	1 59.9	− 26 7 43.6	+ 13.3	Y.	
14	. .	. .	. .	+ 1 22.5	14 11 29.1	14.2	+ 24 41 55.9	− 2.6	Y.	Very faint.
15	. .	. .	. .	+ 0 3.4	63 0 11.2	1 50.0	− 24 8 22.0	+ 12.2	Y.	
16	30.164	71.5	69.5	+ 1 54.6	48 52 4.1	1 4.4	− 9 59 29.2	+ 8.2	Y.	
17	. .	. .	. .	+ 2 47.0	71 12 52.3	2 43.9	− 32 21 57.0	+ 13.7	Y.	
18	30.166	71.3	69.0	− 1 18.1	80 38 50.6	5 28.3	− 41 50 39.7	+ 15.0	Y.	
19	. .	. .	. .	− 0 58.9	77 9 7.7	4 1.7	− 38 19 30.2	+ 14.1	Y.	
20	. .	. .	68.5	− 0 55.7	71 24 13.9	2 45.9	− 32 33 20.6	+ 12.7	Y.	Faint.
21	30.170	71.2	68.4	+ 0 34.8	82 10 39.2	6 27.9	− 43 23 27.9	+ 14.3	Y.	
22	. .	. .	. .	− 1 32.4	51 13 38.0	1 10.2	− 12 21 8.9	+ 7.6	Y.	
23	. .	. .	. .	− 3 0.7	51 12 9.7	1 10.1	− 12 19 40.6	+ 7.6	Y.	
24	. .	. .	68.3	− 2 28.5	55 47 36.8	1 22.8	− 16 55 20.4	+ 8.2	Y.	
25	. .	. .	68.4	+ 0 47.3	74 5 53.3	3 15.2	− 35 15 29.3	+ 11.3	Y.	
26	. .	. .	. .	+ 1 23.4	62 41 28.7	1 48.8	− 23 49 38.3	+ 9.0	Y.	
27	30.174	70.8	68.5	− 0 47.2	62 39 18.1	1 48.7	− 23 47 27.6	+ 8.9	Y.	
28	. .	. .	. .	− 1 18.5	77 33 47.9	4 9.9	− 38 44 18.5	+ 10.9	Y.	
29	. .	. .	. .	− 2 19.4	78 12 45.7	4 23.4	− 39 23 29.9	+ 10.4	Y.	
30	30.176	70.7	68.3	− 0 52.8	71 14 11.1	2 43.0	− 32 23 14.9	+ 9.2	Y.	
31	. .	. .	. .	+ 2 1.3	66 47 10.5	2 10.9	− 27 55 42.1	+ 8.2	Y.	
32	. .	. .	. .	− 0 37.7	15 19 30.0	15.5	+ 23 33 53.8	− 1.3	Y.	
33	. .	. .	. .	+ 0 31.5	65 35 38.0	2 3.9	− 26 44 2.6	+ 7.4	Y.	
34	. .	. .	. .	− 1 37.6	66 18 33.3	2 8.2	− 27 27 2.2	+ 6.8	Y.	
35	. .	. .	. .	− 0 14.8	65 29 53.1	2 3.5	− 26 38 17.4	+ 6.4	Y.	
36	. .	. .	. .	− 1 46.4	64 33 26.4	1 58.4	− 25 41 45.5	+ 5.5	Y.	
37	30.160	70.1	66.7	− 2 16.4	64 32 56.4	1 58.4	− 25 41 15.5	+ 5.6	Y.	
38	. .	. .	. .	+ 1 52.3	62 37 0.1	1 48.9	− 23 45 9.7	+ 4.9	Y.	
39	30.162	70.0	66.5	+ 1 35.2	63 46 46.3	1 54.4	− 24 55 1.5	+ 4.7	Y.	
40	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
41	29.974	78.0	77.0	− 1 9.8	16 48 53.5	16.7	+ 22 4 29.1	+ 2.0	Y.	
42	. .	. .	. .	− 0 36.0	43 29 31.3	52.3	− 4 36 44.4	+ 6.7	Y.	
43	. .	. .	76.4	− 2 6.0	S. 4 8 4.3	4.0	+ 34 45 31.0	− 6.0	Y.	Observed as one star.
44	. .	. .	. .	− 1 53.7	N. 43 31 44.0	52.4	+ 82 26 15.7	− 11.3	Y.	
45	29.974	77.6	76.0	− 2 11.1	43 32 1.4	52.5	+ 82 26 33.1	− 11.3	Y.	
46	. .	. .	75.7	− 2 18.6	N. 4 22 11.0	4.2	+ 43 15 54.4	− 8.1	Y.	
47	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
48	29.973	75.7	73.3	− 0 13.4	S. 49 29 53.6	1 6.5	− 10 37 20.8	+ 5.8	Y.	
49	. .	. .	. .	− 1 57.1	N. 23 1 38.2	24.2	+ 61 55 41.7	− 13.6	Y.	Corr. +0″.61 applied to mean of A, B, C, D.
50	29.968	75.5	72.6	+ 2 20.2	S. 71 47 24.3	2 47.2	− 32 56 32.3	+ 11.0	Y.	
51	. .	. .	. .	− 0 17.2	N. 20 8.7	2.0	+ 40 53 49.9	− 8.9	Y.	
52	. .	. .	. .	+ 2 50.9	S. 75 47 55.0	3 35.9	− 36 57 51.6	+ 11.0	Y.	
53	29.974	75.2	72.2	− 4 34.2	75 40 30.0	3 34.1	− 36 50 24.8	+ 10.8	Y.	
54	29.974	75.0	71.8	+ 2 12.9	76 7 19.0	3 41.1	− 37 17 20.9	+ 9.9	Y.	
55	. .	. .	. .	+ 1 38.8	66 11 42.9	2 5.5	− 27 20 9.2	+ 7.6	Y.	
56	. .	. .	. .	+ 1 20.5	71 6 26.9	2 41.2	− 32 15 28.9	+ 7.8	Y.	
57	29.972	74.5	71.2	− 1 32.5	71 3 34.0	2 40.9	− 32 12 35.6	+ 7.8	Y.	
58	. .	. .	70.8	− 1 53.7	65 8 13.3	1 59.8	− 26 16 33.8	+ 6.2	Y.	
59	. .	. .	. .	+ 0 49.5	60 45 55.4	1 39.4	− 21 53 55.5	+ 4.8	Y.	
60	29.974	74.0	70.4	− 0 55.5	56 9 11.5	1 23.1	− 17 16 55.3	+ 3.6	Y.	
61	. .	. .	. .	− 2 58.9	72 32 10.2	2 55.4	− 33 41 26.4	+ 5.7	Y.	
62	. .	. .	. .	− 1 22.2	71 58 46.3	2 49.8	− 33 7 56.9	+ 5.1	Y.	
63	. .	. .	. .	− 0 51.0	70 54 16.8	2 39.8	− 32 3 17.4	+ 4.6	Y.	
64	. .	. .	. .	− 0 56.7	S. 69 9 6.6	2 25.6	− 30 17 52.9	+ 4.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. June 7	1	Anon. $15^h 36^m 48^s$	7.5	2	VII, IX.	89 9 57.7	67.8	64.1	62.5	66.3	61.3	63.28	34.774	−0.180	34.623
	2	Anon. $15^h 46^m 29^s$	7.5	3	III–VII.	77 25 3.7	11.9	10.8	11.0	14.0	7.7	9.85	28.602	. .	28.425
	3	B. A. C. 5299	7.0	3	V, VII, IX.	89 40 1.4	10.4	8.2	7.2	10.6	4.7	7.08	32.562	. .	32.401
	4	O. Arg. S. 15225.	9.2	3	III–VII.	80 25 0.7	10.8	7.2	6.6	11.2	4.5	6.83	28.506	. .	28.330
	5	Nadir	. .	.	. .	200 0 0.6	9.9	7.2	7.9	10.1	5.7	6.90	30.284	. .	. .
10	6	Lacaille 5457.	. .	2	VII, IX.	94 30 1.3	10.1	8.4	9.9	10.2	5.0	7.48	27.513	−0.161	27.385
	7	Anon. $13^h 20^m 53^s$	. .	3	V, VII, IX.	84 35 0.6	10.1	9.6	9.2	10.7	4.2	7.40	29.432	. .	29.288
	8	Anon. $14^h 32^m 40^s$	. .	3	V, VII, IX.	85 20 2.1	11.2	10.9	11.2	13.2	5.3	8.98	28.128	. .	27.984
	9	Weisse (2) XIII, 891	6.0	2	VII, IX.	27 0 2.2	11.9	9.8	9.1	12.4	5.0	8.40	24.300	. .	24.131
	10	Lacaille 5769.	. .	3	III–VII.	96 19 58.7	68.5	67.3	66.4	70.7	61.5	65.52	26.427	. .	26.273
	11	Anon. $13^h 53^m 1^s$	. .	3	III–VII.	" " "	"	"	"	"	"	"	31.101	. .	30.947
	12	Weisse (2) XIV, 196.	6.0	3	III–VII.	38 10 2.0	12.2	10.9	10.7	14.6	6.5	9.48	31.428	. .	31.263
	13	Lacaille 5925	7.0	3	III–VII.	95 39 59.0	69.8	67.2	67.4	69.8	61.7	65.82	27.406	. .	27.252
	14	Anon. $14^h 23^m 28^s$	9.0	3	III–VII.	84 25 2.3	13.2	11.3	11.7	14.2	6.9	9.93	33.032	. .	32.876
	15	Anon. $14^h 37^m 27^s$	. .	3	III–VII.	96 14 58.9	71.2	67.6	69.2	71.2	61.5	66.60	31.798	. .	31.644
	16	Nadir	. .	.	. .	200 0 0.0	9.1	7.0	8.9	8.8	4.2	6.33	30.243	. .	. .
	17	Anon. $15^h 31^m 40^s$	. .	3	III–VII.	97 4 58.8	70.0	67.1	66.9	69.6	60.9	65.55	26.924	. .	26.771
	18	Anon. $15^h 39^m 58^s$	8.0	3	III–VII.	79 40 0.5	11.4	11.0	9.2	13.0	3.0	8.02	27.034	. .	26.877
11	19	Lacaille 5739	. .	3	III–VII.	87 0 4.6	13.8	12.2	14.1	13.2	7.9	10.97	34.932	−0.140	34.797
	20	B. A. C. 4680	6.0	3	III–VII.	67 30 2.2	12.2	10.2	12.7	12.5	5.9	9.28	29.241	. .	29.102
	21	Anon. $14^h 4^m 17^s$	8.3	3	III–VII.	83 25 0.1	11.3	7.4	9.5	9.2	2.5	6.67	28.516	. .	28.380
	22	B. A. C. 4757	5.8	3	V, VII, IX.	93 5 3.5	14.9	10.5	14.0	12.1	7.0	10.33	35.770	. .	35.651
	23	Anon. $14^h 24^m 21^s$	. .	2	VII, IX.	82 50 2.8	13.8	9.9	12.7	12.5	4.5	9.37	28.954	. .	28.839
	24	Anon. $14^h 34^m 2^s$	8.5	3	III, VII.	91 5 3.4	13.6	10.2	12.1	11.8	5.0	9.35	27.793	. .	27.659
	25	Lacaille 6054.	7.0	2	VII, IX.	" " "	"	"	"	"	"	"	33.222	. .	33.113
	26	O. Arg. S. 14080	6.0	3	III–VII.	84 40 0.9	10.5	9.8	10.3	10.3	3.4	7.53	35.689	. .	35.554
	27	Anon. $14^h 56^m 19^s$	8.0	3	III–VII.	86 25 0.9	10.8	8.9	11.4	10.7	3.3	7.67	31.172	. .	31.037
	28	Weisse XIV, 1149	7.5	2	VII, IX.	70 10 1.7	12.3	9.9	11.8	12.2	5.7	8.93	30.460	. .	30.337
	29	O. Arg. S. 14402.	8.5	3	III–VII.	79 20 2.8	14.2	11.8	13.1	13.6	7.0	10.42	31.649	. .	31.513
	30	Lacaille 6343	7.0	3	IV–VI.	93 5 4.4	15.2	12.6	14.2	12.7	6.8	10.98	30.430	. .	30.292
	31	Lacaille 6354	8.2	3	IV–VI.	" " "	"	"	"	"	"	"	26.344	. .	26.206
	32	Lacaille 6410.	7.3	3	III–VII.	96 29 57.7	69.9	67.0	67.3	68.3	59.1	64.88	35.161	. .	35.028
	33	Anon. $15^h 31^m 38^s$	9.0	3	III–VII.	94 50 1.8	11.7	9.9	11.8	10.8	2.6	8.10	28.619	. .	28.486
	34	O. Arg. S. 14855.	8.5	3	IV–VI.	84 25 0.0	9.9	9.7	9.5	10.6	2.1	6.97	29.094	. .	28.955
	35	O. Arg. S. 14861.	9.2	2	I, IX.	" " "	"	"	"	"	"	"	32.894	. .	32.777
	36	O. Arg. S. 15179.	9.2	3	III–VII.	79 50 1.6	12.8	10.8	12.0	11.7	4.0	8.82	27.415	. .	27.279
	37	O. Arg. S. 15359.	8.5	3	III–VII.	88 40 3.8	17.2	12.2	14.4	14.8	7.4	11.63	30.273	. .	30.139
	38	Nadir	. .	.	. .	199 59 59.2	69.4	67.2	69.7	69.1	63.5	66.35	30.223	. .	. .
14	39	83 Virginis	. .	3	IV, VI, VIII.	74 25 4.7	12.6	11.9	12.5	12.9	7.9	10.42	32.554	−0.137	32.420
	40	Weisse XIII, 708	8.0	3	III–VII.	66 25 1.9	10.8	8.9	8.5	12.5	6.9	8.25	30.113	. .	29.977
	41	Lacaille 5774.	7.5	3	V, VII, IX.	88 0 0.4	7.8	5.6	5.5	9.0	2.8	5.18	34.170	. .	34.052
	42	O. Arg. S. 13432.	8.2	3	III–VII.	85 35 1.8	10.3	7.9	8.4	10.2	4.0	7.10	31.819	. .	31.686
	43	ψ Centauri	5.0	3	III–VII.	96 4 59.3	69.5	66.9	65.5	69.5	63.1	65.63	25.936	. .	25.806
	44	Anon. $14^h 18^m 18^s$	8.0	3	III–VII.	85 0 0.5	8.8	8.1	7.9	10.7	3.9	6.65	29.451	. .	29.319
	45	Anon. $14^h 24^m 21^s$	8.3	3	III–VII.	82 50 1.9	10.4	8.6	8.7	11.5	4.0	7.52	28.858	. .	28.725
	46	Anon. $14^h 34^m 11^s$	9.0	3	III, IV, V.	91 5 3.9	13.0	10.5	11.3	14.0	6.3	9.83	27.715	. .	27.580
	47	Lacaille 6054	7.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	33.195	. .	33.078
	48	Anon. $14^h 41^m 58^s$	7.0	3	III–VII.	90 45 1.6	9.6	7.7	6.9	10.2	2.9	6.48	32.036	. .	31.905
	49	Anon. $14^h 42^m 52^s$	7.8	3	V, VII, IX.	" " "	"	"	"	"	"	"	27.725	. .	27.608
	50	Anon. $14^h 51^m 12^s$	9.1	2	V, VII.	9 15 3.5	12.9	10.9	11.9	14.7	6.8	10.12	32.244	. .	32.103
	51	Anon. $14^h 52^m 58^s$	9.3	2	VIII, IX.	" " "	"	"	"	"	"	"	26.403	. .	26.241
	52	*i* Bootis,(1st, & south'd)	. .	3	V, VII, IX.	10 45 2.9	11.4	11.1	10.5	14.4	6.5	9.47	32.366	. .	32.213
	53	O. Arg. S. 14429.	9.0	3	III–VII.	88 50 1.0	9.9	7.9	7.0	10.5	4.0	6.72	28.034	. .	27.903
	54	Lacaille 6368.	7.3	3	III–VII.	98 15 4.2	14.1	10.8	11.1	14.2	7.9	10.38	30.336	. .	30.207
	55	Weisse (2) XV, 518	5.8	3	V, VII, IX.	19 45 1.7	10.1	8.9	7.1	11.9	3.4	7.18	33.987	. .	33.840
	56	Anon. $15^h 31^m 32^s$	8.8	3	III–VII.	94 50 1.7	11.2	9.5	10.1	11.9	4.7	8.18	28.620	. .	28.490
	57	O. Arg. S. 14581.	9.2	3	III–VII.	77 50 4.0	13.8	11.9	11.7	15.7	7.8	10.82	31.341	. .	31.207
	58	Anon. $15^h 48^m 9^s$	9.5	3	III–VII.	75 45 5.2	13.5	14.1	13.0	15.9	7.8	11.58	31.573	. .	31.439
	59	51 Libræ, (2d *)	. .	3	III–VII.	69 55 1.5	11.8	10.5	11.1	13.7	6.9	9.25	33.807	. .	33.672
	60	Weisse (2) XVI, 154	9.0	3	III–VII.	16 45 4.7	14.1	11.8	10.7	14.9	5.9	10.35	32.817	. .	32.671
	61	Nadir	. .	. .	. .	200 0 1.4	10.2	8.7	10.1	10.6	6.3	7.88	30.272	. .	. .
17	62	Lacaille 5645.	6.0	3	III–VII.	91 45 2.2	11.7	9.1	10.0	12.3	5.4	8.45	25.806	−0.156	25.656
	63	B. A. C. 4614	6.0	3	VI, VII, VIII.	340 10 5.2	12.4	14.0	12.5	15.8	7.3	11.20	28.285	. .	28.057
	64	Lacaille 5785.	7.0	3	III–VII.	84 30 0.0	7.8	7.0	6.4	10.0	4.0	5.87	31.066	. .	30.915
	65	O. Arg. S. 13432.	8.3	3	III–VII.	83 35 1.1	7.8	6.9	7.1	9.5	3.0	5.90	31.755	−0.156	31.603

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.976	73.6	70.0	− 2 24.9	S. 69 7 38.3	2 25.4	− 30 16 24.5	+ 4.0	Y.	
2	. .	. .	. .	+ 0 49.3	57 25 59.2	1 27.3	− 18 33 47.2	+ 2.2	Y.	
3	. .	. .	. .	− 1 15.2	69 38 51.8	2 29.5	− 30 47 42.1	+ 3.2	Y.	
4	29.970	73.2	69.3	+ 0 52.3	60 25 59.1	1 38.3	− 21 33 58.2	+ 1.1	Y.	
5	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
6	29.744	73.5	69.2	+ 1 21.8	74 31 29.3	3 17.6	− 35 41 7.6	+ 13.0	Y.	
7	. .	. .	. .	+ 0 22.3	64 35 29.7	1 56.4	− 25 43 46.8	+ 10.4	Y.	
8	. .	. .	68.6	+ 1 3.1	65 21 12.1	2 0.6	− 26 29 33.4	+ 9.5	Y.	Faint.
9	. .	. .	. .	+ 3 3.6	7 3 12.0	6.9	+ 31 50 20.4	− 7.3	Y.	
10	. .	. .	. .	+ 1 56.6	76 22 2.1	3 45.2	− 37 32 8.1	+ 11.4	Y.	
11	29.762	73.0	67.7	− 0 29.7	76 19 35.9	3 44.6	− 37 29 41.3	+ 11.1	Y.	
12	. .	. .	. .	− 0 39.6	18 9 29.9	18.3	+ 20 43 51.0	− 4.2	Y.	
13	. .	. .	. .	+ 1 26.0	75 41 31.8	3 34.9	− 36 51 27.5	+ 9.7	Y.	
14	29.762	72.5	67.0	− 1 30.1	64 23 39.8	1 55.9	− 25 31 56.5	+ 7.0	Y.	Faint.
15	. .	. .	66.7	− 0 51.5	76 14 15.1	3 43.6	− 37 24 19.4	+ 8.6	Y.	
16	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
17	29.772	71.8	64.0	+ 1 41.0	77 6 46.6	4 0.2	− 38 17 7.5	+ 5.4	Y.	Faint.
18	. .	. .	. .	+ 1 37.7	59 41 45.7	1 36.0	− 20 49 42.5	+ 2.7	Y.	Cloudy.
19	29.840	71.8	63.4	− 2 30.4	66 57 40.6	2 11.7	− 28 6 13.0	+ 9.3	Y.	
20	. .	. .	. .	+ 0 28.1	47 30 37.4	1 4.5	− 8 37 59.6	+ 3.8	Y.	
21	. .	. .	63.3	+ 0 50.7	63 25 57.4	1 52.3	− 24 34 10.4	+ 7.7	Y.	
22	29.842	70.8	63.1	− 2 57.2	73 2 13.1	3 2.4	− 34 11 36.3	+ 9.4	Y.	
23	. .	. .	. .	+ 0 36.3	62 50 45.7	1 49.5	− 23 58 56.0	+ 6.7	Y.	
24	. .	. .	. .	+ 1 13.3	71 6 22.6	2 43.3	− 32 15 26.6	+ 7.9	Y.	
25	. .	. .	. .	− 1 37.6	71 3 31.8	2 43.0	− 32 12 35.5	+ 7.9	Y.	
26	29.856	69.8	62.5	− 2 54.2	64 37 13.4	1 58.5	− 25 45 32.6	+ 5.9	Y.	
27	. .	. .	. .	− 0 32.5	66 24 35.2	2 8.6	− 27 33 4.6	+ 5.9	Y.	
28	. .	. .	. .	− 0 10.6	50 9 58.4	1 7.7	− 11 17 26.8	+ 2.5	Y.	
29	. .	. .	. .	− 0 47.4	59 19 23.0	1 35.0	− 20 27 18.8	+ 4.0	Y.	
30	. .	. .	. .	− 0 9.2	73 5 1.8	3 3.6	− 34 14 26.2	+ 6.0	Y.	
31	29.856	69.0	62.1	+ 1 58.7	73 7 9.7	3 4.0	− 34 16 34.5	+ 5.9	Y.	
32	. .	. .	. .	− 2 37.6	76 27 27.3	3 50.2	− 27 37 38.2	+ 4.4	Y.	
33	. .	. .	. .	+ 0 47.4	74 50 55.5	3 25.7	− 36 0 41.9	+ 5.2	Y.	
34	. .	. .	. .	+ 0 32.7	64 25 39.7	1 57.7	− 25 33 58.1	+ 3.3	Y.	
35	. .	. .	. .	− 1 27.0	64 23 39.9	1 57.5	− 25 31 58.2	+ 3.3	Y.	
36	29.876	68.2	62.0	+ 1 25.2	59 51 34.0	1 37.2	− 20 59 31.9	+ 1.9	Y.	Very faint.
37	. .	. .	. .	− 0 4.4	68 40 7.2	2 23.9	− 29 48 51.9	+ 2.4	Y.	
38	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
39	. .	. .	. .	− 1 15.8	54 23 54.6	1 17.6	− 15 31 33.0	+ 6.4	Y.	
40	29.950	75.6	71.3	+ 0 0.7	46 25 9.0	58.5	− 7 32 28.2	+ 3.3	Y.	
41	. .	. .	. .	− 2 7.0	67 57 58.2	2 16.7	− 29 6 35.6	+ 9.6	Y.	
42	29.946	75.2	70.6	− 0 52.8	63 34 14.3	1 51.7	− 24 42 26.7	+ 7.9	Y.	
43	. .	. .	. .	+ 2 11.2	76 7 16.8	3 42.0	− 37 17 19.6	+ 10.4	Y.	
44	. .	. .	. .	+ 0 21.3	65 0 28.0	1 59.1	− 26 8 47.8	+ 7.6	Y.	
45	. .	. .	. .	+ 0 39.9	62 50 47.5	1 48.3	− 23 58 56.5	+ 6.8	Y.	
46	. .	. .	. .	+ 1 15.8	71 6 25.6	2 41.5	− 32 15 27.8	+ 8.2	Y.	
47	29.954	75.0	70.0	− 1 36.5	71 3 33.4	2 41.1	− 32 12 35.2	+ 8.2	Y.	
48	. .	. .	. .	− 0 59.7	70 44 6.8	2 38.3	− 31 53 5.8	+ 7.7	Y.	
49	. .	. .	. .	+ 1 14.9	S. 70 46 21.4	2 38.6	− 31 55 20.7	+ 7.6	Y.	
50	. .	. .	. .	− 1 5.9	N. 10 45 55.8	10.6	+ 49 39 45.6	− 10.5	Y.	
51	. .	. .	. .	+ 1 57.6	10 42 52.3	10.6	+ 49 36 42.1	− 10.4	Y.	
52	29.954	74.3	69.3	− 1 9.3	N. 9 15 59.9	9.1	+ 48 9 48.2	− 9.9	Y.	
53	. .	. .	. .	+ 1 5.6	S. 68 51 12.3	2 23.5	− 29 59 56.6	+ 5.9	Y.	
54	. .	. .	68.7	− 0 6.5	S. 78 15 3.9	4 22.1	− 39 25 46.8	+ 6.9	Y.	
55	. .	. .	. .	− 2 0.4	N. 0 16 53.2	0.3	+ 39 10 32.7	− 7.7	Y.	
56	29.960	74.0	68.3	+ 0 47.3	S. 74 50 55.5	3 23.7	− 36 0 39.9	+ 5.5	Y.	
57	. .	. .	. .	− 0 37.8	57 49 33.0	1 28.9	− 18 57 22.6	+ 2.5	Y.	
58	. .	. .	68.0	− 0 45.1	55 44 26.5	1 22.1	− 16 52 9.4	+ 1.8	Y.	Faint.
59	. .	. .	. .	− 1 55.1	S. 49 53 14.1	1 6.5	− 11 0 41.4	+ 0.6	Y.	
60	29.960	73.2	67.4	− 1 23.7	N. 3 16 13.4	3.2	+ 42 9 55.8	− 6.8	Y.	
61	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
62	30.000	76.5	72.8	+ 2 15.9	S. 71 47 24.4	2 47.3	− 32 56 32.4	+ 11.4	Y.	
63	. .	. .	. .	+ 1 0.8	N. 39 48 48.0	46.4	+ 78 43 13.6	− 16.5	Y.	
64	. .	. .	72.3	− 0 28.7	S. 64 29 37.2	1 56.2	− 25 37 54.2	+ 8.7	Y.	
65	. .	. .	. .	− 0 50.2	S. 63 34 15.7	1 51.7	− 24 42 28.1	+ 8.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. June 17	1	Lacaille 5910.	7.0	3	III–VII.	86 35 0.9	9.3	7.6	8.9	10.6	3.4	6.78	31.496	−0.156	31.345
	2	Anon. 14^h 17^m 42^s	7.3	3	IV–VI.	86 25 1.2	9.4	8.7	9.0	10.9	4.5	7.28	32.150	. .	31.996
	3	O. Arg. S. 13747.	8.5	3	IV–VI.	86 35 5.0	12.8	11.8	12.0	14.2	7.9	10.62	34.556	. .	34.402
	4	Anon. 14^h 29^m 44^s	9.0	2	V, IX.	" " "	"	"	"	"	"	"	29.184	. .	29.048
	5	Anon. 14^h 37^m 22^s	. .	3	III–VII.	96 15 3.2	13.4	11.3	10.8	14.2	7.1	10.00	31.926	. .	31.777
	6	14 Libræ	7.0	3	III–VII.	83 45 2.5	11.0	9.2	9.3	11.4	5.0	8.07	26.883	. .	26.731
	7	Lacaille 6221.	6.7	3	III–VII.	94 35 5.0	14.3	12.1	12.6	15.8	7.9	11.28	28.767	. .	28.618
	8	Lacaille 6289.	7.5	3	III–VII.	97 55 3.3	12.2	11.2	10.6	13.1	5.7	9.35	32.057	. .	31.909
	9	O. Arg. S. 14487.	9.0	3	IV–VI.	88 44 58.8	69.1	66.0	65.7	68.9	62.9	65.23	28.401	. .	28.247
	10	Rumker 5093	6.8	3	III–VII.	14 10 2.7	10.7	10.1	7.8	11.8	5.1	8.03	34.085	. .	33.919
	11	Anon. 15^h 29^m 57^s	6.7	3	III–VII.	80 35 2.3	12.1	9.7	9.9	12.2	5.0	8.53	33.919	. .	33.167
	12	Anon. 15^h 36^m 45^s	8.0	3	IV–VI.	89 10 2.6	12.7	10.2	9.8	12.1	5.7	8.85	35.003	. .	34.849
	13	Lacaille 6624.	7.0	3	III–VII.	91 50 0.4	10.3	8.8	7.9	10.2	2.1	6.62	27.328	. .	27.178
	14	B. A. C. 5368	6.0	3	III–VII.	41 30 6.4	14.9	13.8	13.1	17.5	10.8	12.75	32.419	. .	32.260
	15	B. A. C. 5476	. .	3	III–VII.	88 30 4.2	12.6	10.9	10.2	12.9	7.1	9.65	33.229	. .	33.078
	16	O. Arg. S. 15694.	. .	3	III–VII.	" " "	"	"	"	"	"	"	35.126	. .	34.975
	17	Lacaille 6894.	. .	3	III–VII.	94 30 3.8	12.4	11.8	12.1	14.1	6.3	10.08	32.104	. .	31.955
	18	O. Arg. S. 16031.	. .	3	III–VII.	80 20 2.2	13.8	12.5	10.5	13.7	6.3	9.83	34.727	. .	34.575
	19	Anon. 16^h 49^m 28^s	. .	3	V, VII, IX.	85 20 0.0	9.7	8.5	10.0	10.9	2.9	7.17	30.017	. .	29.866
	20	Nadir	. .	.	. .	200 0 0.0	8.4	7.9	8.9	9.6	4.1	6.48	30.243	. .	. .
20	21	B. A. C. 4667	. .	3	III–VII.	98 25 2.2	8.9	6.3	5.9	10.2	4.0	6.25	30.419	−0.164	30.263
	22	Lacaille 5897.	. .	3	III–VII.	86 20 2.7	9.9	8.7	9.8	12.0	6.2	8.22	33.010	. .	32.851
	23	Anon. 14^h 25^m 29^s	6.0	3	III–VII.	89 0 2.2	10.2	7.8	7.1	11.7	6.7	7.62	30.948	. .	30.790
	24	Lacaille 6053.	. .	3	III–VII.	87 40 1.9	8.2	5.8	5.8	9.6	3.3	5.79	31.453	. .	31.294
	25	B. A. C. 4884	6.7	3	III–VII.	83 50 0.8	8.9	7.5	6.3	10.2	4.1	6.30	32.647	. .	32.487
	26	Anon. 14^h 51^m 2^s	8.5	3	IV–VI.	9 15 2.7	11.1	10.7	8.7	13.8	5.2	8.70	32.362	. .	32.195
	27	Anon. 14^h 51^m 34^s	9.2	3	VI, VII, VII.	" " "	"	"	"	"	"	"	26.346	. .	26.171
	28	O. Arg. S. 14277.	8.5	3	IV–VI.	85 5 3.6	10.8	11.9	10.7	14.5	8.4	9.98	31.353	. .	31.190
	29	Anon. 15^h 6^m 16^s	8.0	3	IV–VI.	84 25 2.2	10.1	9.5	8.1	12.4	5.9	8.03	29.341	. .	29.178
	30	O. Arg. N. 15259	8.3	3	V, VI, VII.	351 35 2.1	10.6	12.4	8.9	15.4	5.6	9.17	33.477	. .	33.302
	31	O. Arg. S. 14554.	8.3	3	V, VII, IX.	80 54 59.1	65.6	64.5	64.4	67.5	62.1	63.87	30.526	. .	30.378
	32	Anon. 15^h 36^m 5^s	8.3	3	III–VII.	89 10 2.7	12.8	8.8	8.3	12.8	6.9	8.72	32.142	. .	31.984
	33	Anon. 15^h 47^m 7^s	7.3	3	III–VII.	69 35 3.3	13.3	12.0	11.5	14.2	8.9	10.53	31.001	. .	30.839
	34	49 Libræ	5.0	3	IV–VI.	74 59 58.8	68.0	67.5	65.7	69.7	62.5	65.37	27.881	. .	27.718
	35	B. A. C. 5368	5.5	3	III–VII.	41 29 59.6	67.6	65.8	64.9	70.7	63.9	65.42	32.239	. .	32.072
	36	Anon. 16^h 26^m 3^s	8.7	3	III–VII.	82 55 1.1	9.2	7.6	7.9	9.9	3.8	6.58	34.958	. .	34.798
	37	B. A. C. 5569	6.0	3	III–VII.	86 25 2.6	9.8	9.0	8.8	11.2	5.1	7.75	30.784	. .	30.638
	38	O. Arg. S. 15950.	8.5	3	V, VII, IX.	87 35 3.0	10.2	8.9	9.2	12.3	6.3	8.32	30.988	. .	30.829
	39	Anon. 16^h 59^m 53^s	8.5	3	III–VII.	95 59 58.2	67.6	66.0	64.8	68.1	61.9	64.43	34.543	. .	34.386
	40	Lacaille 7230.	7.8	3	III–VII.	96 45 0.7	9.9	8.1	7.5	10.4	2.4	6.50	34.506	. .	34.349
	41	Lacaille 7312.	7.0	3	III–VII.	92 30 2.9	12.4	9.3	9.8	11.6	4.8	8.47	35.647	. .	35.489
	42	Nadir	. .	.	. .	200 0 0.0	7.4	7.1	6.7	8.7	4.2	5.68	30.224	. .	. .
21	43	B. A. C. 4620.	. .	3	III–VII.	94 35 2.0	9.8	8.0	9.1	10.3	3.9	7.18	25.452	−0.144	25.315
	44	Anon. 13^h 54^m 37^s	8.3	3	VI, VII, VIII.	341 45 0.2	7.8	11.3	6.4	11.8	1.4	6.48	28.630	. .	28.429
	45	Weisse XIV, 209	8.8	3	III–VII.	63 25 1.1	8.8	7.4	7.2	8.9	3.5	6.15	29.175	. .	29.032
	46	Anon. 14^h 51^m 23^s	9.0	1	V.	15 0 0.1	8.7	7.7	6.9	8.8	1.1	5.55	24.252	. .	24.108
	47	B. A. C. 4965	6.5	3	V, VII, IX.	13 45 3.9	14.7	12.7	11.9	13.4	7.1	10.62	31.708	. .	31.550
	48	Lacaille 6293.	6.5	3	III–VII.	96 50 2.7	13.9	11.9	11.9	13.4	5.3	9.85	34.826	. .	34.689
	49	Weisse XV, 254.	9.0	3	III–VII.	72 0 2.3	11.0	9.2	10.9	11.7	5.0	8.35	30.187	. .	30.045
	50	Anon. 15^h 25^m 26^s	8.5	3	IV–VI.	91 35 0.2	10.4	8.1	8.9	9.2	1.3	6.35	28.735	. .	28.597
	51	Lacaille 6421.	6.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	30.815	. .	30.691
	52	Anon. 15^h 33^m 50^s	9.0	2	V, VII.	15 45 2.0	10.6	10.2	8.6	11.1	3.4	7.65	37.938	. .	37.791
	53	Radcliffe 3431	6.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	27.572	. .	27.405
	54	O. Arg. N. 15688	8.3	3	III–VII.	352 40 2.6	10.9	12.5	11.2	12.3	4.9	9.07	34.143	. .	33.977
	55	O. Arg. N. 15681	8.5	1	V.	" " "	"	"	"	"	"	"	33.880	. .	33.736
	56	B. A. C. 5333	6.5	3	III–VII.	78 10 0.8	11.8	10.3	9.8	11.8	3.5	8.00	27.383	. .	27.242
	57	c^2 Scorpii	5.0	3	III–VII.	86 25 1.3	10.9	10.7	11.8	10.8	3.8	8.22	27.049	. .	26.910
	58	*o* Scorpii, (Companion)	9.0	3	V, VII, IX.	84 10 0.2	9.9	8.9	10.6	9.5	2.9	7.00	33.381	. .	33.254
	59	Nadir	. .	.	. .	199 59 58.4	68.3	67.2	68.9	67.7	63.0	65.58	30.201	. .	. .
22	60	B. A. C. 4636.	. .	3	IV–VI.	86 45 0.0	7.0	6.1	8.1	7.6	1.6	5.07	26.076	−0.157	25.921
	61	Lacaille 5812.	. .	3	III–VII.	95 55 2.4	11.0	9.3	9.2	10.3	4.8	7.83	27.575	. .	27.425
	62	Lacaille 5910.	6.0	3	III–VII.	86 35 0.9	8.5	7.9	9.1	9.5	3.3	6.53	31.531	. .	31.379
	63	Lacaille 5959.	7.0	3	III–VII.	83 50 2.5	11.2	9.8	10.5	11.5	4.9	8.40	31.460	. .	31.307
	64	Anon. 14^h 51^m 12^s	. .	2	V, VII.	9 15 2.8	12.4	10.5	10.8	13.2	3.9	8.93	32.298	. .	32.137
	65	Anon. 14^h 51^m 12^s	. .	3	VI, VII, VIII.	" " "	"	"	"	"	"	"	26.342	−0.157	26.174

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.006	75.9	71.2	— 0 42.2	S. 66 34 24.6	2 8.0	— 27 42 53.4	+ 8.3	Y.	
2	. .	. .	. .	— 1 2.5	66 24 4.8	2 7.1	— 27 32 32.6	+ 8.2	Y.	
3	. .	. .	. .	— 2 18.0	66 32 52.6	2 8.0	— 27 41 21.4	+ 7.6	Y.	
4	. .	. .	. .	+ 0 29.8	66 35 40.4	2 8.4	— 27 44 9.5	+ 7.6	Y.	Faint.
5	. .	. .	. .	— 0 55.7	76 14 14.3	3 43.9	— 37 24 19.0	+ 9.4	Y.	Very faint.
6	30.010	75.3	69.8	+ 1 42.3	63 46 50.4	1 53.1	— 24 55 4.2	+ 6.0	Y.	
7	. .	. .	. .	+ 0 43.3	74 35 54.6	3 20.1	— 35 45 35.4	+ 7.9	Y.	
8	. .	. .	68.8	— 0 59.8	77 54 9.5	4 14.9	— 39 4 45.2	+ 7.8	Y.	
9	. .	. .	68.8	+ 0 54.9	S. 68 46 0.1	2 23.1	— 29 54 44.0	+ 5.8	Y.	
10	. .	. .	. .	— 2 2.8	N. 5 51 54.8	5.8	+ 44 45 39.8	— 9.1	Y.	
11	30.010	74.5	68.5	— 1 58.1	S. 60 33 10.4	2 4.7	— 21 41 35.9	+ 3.5	Y.	
12	. .	. .	. .	— 2 32.0	69 7 36.8	2 26.0	— 30 16 23.6	+ 4.6	Y.	
13	. .	. .	. .	+ 1 28.3	71 51 34.9	2 49.6	— 33 0 45.3	+ 4.2	Y.	
14	. .	. .	. .	— 1 10.8	21 29 1.9	22.1	+ 17 24 15.2	— 4.1	Y.	
15	30.022	73.5	67.4	— 1 36.5	68 28 33.2	2 21.6	— 29 37 15.5	+ 2.2	Y.	
16	. .	. .	. .	— 2 36.0	68 27 33.7	2 21.5	— 29 36 15.9	+ 1.8	Y.	
17	. .	. .	. .	— 1 1.2	74 29 8.8	3 19.6	— 35 38 49.2	+ 2.2	Y.	
18	. .	. .	67.3	— 2 23.4	60 17 46.4	1 38.3	— 21 25 45.5	0.0	Y.	Faint.
19	30.022	73.0	67.3	+ 0 4.2	65 20 11.4	2 1.9	— 26 28 34.0	+ 0.1	Y.	
20	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
21	29.877	79.8	76.4	— 0 8.2	78 24 58.0	4 21.1	— 39 35 39.9	+ 12.3	Y.	
22	. .	. .	75.6	— 1 29.3	66 18 38.9	2 4.9	— 27 27 4.5	+ 8.4	Y.	
23	29.888	79.0	75.2	— 0 24.8	68 59 42.9	2 22.6	— 30 8 26.2	+ 8.4	Y.	
24	. .	. .	. .	— 0 40.5	67 39 25.2	2 13.3	— 28 47 59.3	+ 7.8	Y.	
25	. .	. .	75.0	— 1 17.9	S. 63 48 48.4	1 51.7	— 24 57 0.8	+ 6.8	Y.	
26	. .	. .	. .	— 1 8.8	N. 10 46 0.1	10.5	+ 49 39 49.8	— 10.9	Y.	
27	29.892	78.6	75.2	+ 1 59.8	N. 10 42 51.5	10.4	+ 49 36 41.2	— 11.6	Y.	
28	. .	. .	. .	— 0 37.3	S. 65 4 32.7	1 58.2	— 26 12 51.6	+ 5.9	Y.	
29	. .	. .	. .	+ 0 25.7	S. 64 25 33.8	1 54.8	— 25 33 49.3	+ 5.5	Y.	
30	. .	. .	. .	— 0 43.5	N. 28 25 34.4	29.9	+ 67 19 43.5	— 13.2	Y.	
31	29.888	78.3	75.0	— 0 11.8	S. 60 54 52.0	1 38.9	— 22 2 51.7	+ 4.1	Y.	
32	. .	. .	. .	— 1 2.2	69 9 6.6	2 23.8	— 30 17 51.1	+ 4.9	Y.	
33	. .	. .	74.6	— 0 26.3	49 34 44.3	1 2.5	— 10 42 7.5	+ 0.7	Y.	
34	. .	. .	. .	+ 1 11.4	55 1 16.8	1 18.8	— 16 8 56.4	+ 1.3	Y.	
35	29.884	78.0	74.4	— 1 4.9	21 29 0.5	21.8	+ 17 24 17.0	— 4.6	Y.	
36	29.880	77.7	73.7	— 2 30.4	62 52 36.2	1 47.5	— 24 0 44.5	+ 1.2	Y.	
37	. .	. .	. .	— 0 20.0	66 24 47.8	2 6.0	— 27 33 14.5	+ 1.2	Y.	
38	. .	. .	. .	— 0 26.0	67 34 42.4	2 13.2	— 28 43 16.3	+ 1.0	Y.	
39	. .	. .	. .	— 2 17.5	75 57 46.9	3 37.4	— 37 7 45.0	+ 0.5	Y.	Faint.
40	. .	. .	. .	— 2 16.3	76 42 50.2	3 49.7	— 37 53 0.6	— 0.3	Y.	
41	29.876	77.0	72.8	— 2 52.1	72 27 16.4	2 53.2	— 33 36 30.3	— 1.2	Y.	
42	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
43	30.098	76.7	72.4	+ 2 26.6	S. 74 37 33.7	3 20.0	— 35 47 14.5	+ 11.8	Y.	
44	. .	. .	. .	+ 0 49.2	N. 38 14 4.3	44.0	+ 77 8 27.7	— 16.7	Y.	
45	30.092	75.8	70.4	+ 0 30.3	S. 43 25 36.5	53.0	— 4 32 50.2	+ 1.8	Y.	
46	30.104	75.0	68.2	+ 3 4.3	N. 4 56 50.2	4.9	+ 43 50 34.3	— 10.8	Y.	Faint; cloudy,
47	. .	. .	. .	— 0 48.6	N. 6 15 37.9	6.2	+ 45 9 23.4	— 10.8	Y.	
48	30.116	74.7	67.2	— 2 27.0	S. 76 47 42.8	3 55.5	— 37 57 59.1	+ 7.9	Y.	
49	. .	. .	. .	— 0 1.4	52 0 6.9	1 12.2	— 13 7 39.9	+ 2.2	Y.	
50	. .	. .	. .	+ 0 43.9	71 35 50.3	2 48.1	— 32 44 59.2	+ 6.0	Y.	
51	. .	. .	. .	— 0 21.7	S. 71 34 44.7	2 48.0	— 32 43 53.5	+ 5.9	Y.	
52	. .	. .	. .	— 4 4.4	N. 4 18 56.8	4.3	+ 43 12 40.3	— 9.6	Y.	
53	30.122	73.9	65.8	+ 1 21.2	4 13 31.1	4.2	+ 43 7 14.6	— 9.5	Y.	
54	. .	. .	. .	— 2 4.7	27 21 55.6	29.3	+ 66 16 4.2	— 11.8	Y.	
55	. .	. .	. .	— 1 57.1	N. 27 21 48.0	29.3	+ 66 15 56.6	— 11.9	Y.	
56	. .	. .	. .	+ 1 26.3	S. 58 11 34.3	1 31.1	— 19 19 26.2	+ 1.8	Y.	
57	. .	. .	. .	+ 1 36.7	66 26 44.9	2 9.2	— 27 35 14.9	+ 2.9	Y.	
58	30.128	73.0	65.3	— 1 42.0	64 8 25.0	1 56.4	— 25 16 42.2	+ 2.0	Y.	
59	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
60	30.232	76.2	73.2	+ 2 7.6	66 47 12.7	2 9.8	— 27 55 43.3	+ 9.5	Y.	
61	. .	. .	. .	+ 1 20.6	75 56 28.4	3 39.9	— 37 6 29.1	+ 11.5	Y.	
62	. .	. .	. .	— 0 43.2	66 34 23.3	2 8.9	— 27 42 53.0	+ 8.4	Y.	
63	. .	. .	. .	— 0 40.9	S. 63 49 27.5	1 54.0	— 24 57 42.2	+ 7.3	Y.	
64	. .	. .	. .	— 1 7.0	N. 10 45 58.0	10.7	+ 49 39 48.0	— 12.0	Y.	
65	30.234	75.1	69.0	+ 1 59.7	N. 10 42 51.4	10.7	+ 49 36 41.3	— 12.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
June 22	1	O. Arg. S. 14277.	8.0	3	III–VII.	85 5 1.2	9.9	9.6	9.8	10.7	4.0	7.53	31.333	—0.157	31.181
	2	O. Arg. S. 14508.	. .	3	IV–VI.	85 40 0.8	9.3	9.0	9.5	10.3	2.4	6.88	32.101	. .	31.946
	3	B. A. C. 5066.	7.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	26.534	. .	26.372
	4	B. A. C. 5111, (1st *)	6.5	2	I, IX.	82 55 1.7	10.1	8.9	9.7	9.8	3.2	7.23	31.142	. .	31.007
	5	B. A. C. 5111, (2d *)	6.0	3	III–VII.	“ “ “	“	“	“	“	“	“	30.991	. .	30.838
	6	Lacaille 6491.	6.5	3	IV–VI.	90 35 0.8	9.0	7.3	8.0	8.4	0.9	5.73	26.354	. .	26.199
	7	μ Serpentis.	4.5	3	III–VII.	61 55 3.1	11.2	9.8	11.0	12.2	5.3	8.77	31.230	. .	31.074
	8	Radcliffe 3462	8.3	3	V, VII, IX.	15 55 1.1	9.9	9.8	7.2	10.9	3.5	7.07	30.083	. .	29.913
	9	O. Arg. S. 15225.	8.8	3	III–VII.	80 25 0.1	10.2	8.1	8.5	9.8	2.4	6.52	28.426	. .	28.273
	10	Anon. 16^{h} 12^{m} 3^{s}	9.5	2	V, IX.	93 30 1.2	9.8	7.8	9.8	9.2	2.8	6.77	29.958	. .	29.825
	11	O. Arg. S. 15712.	9.0	3	III–VII.	79 24 58.9	70.2	67.7	67.8	68.1	62.1	65.80	35.775	. .	35.622
	12	Anon. 16^{h} 32^{m} 16^{s}	7.3	3	III–VII.	84 55 2.7	11.9	13.3	12.8	13.0	6.1	9.97	29.598	. .	29.446
	13	Weisse XVI, 760	8.3	3	III–VII.	65 0 2.0	10.0	10.0	10.9	10.2	3.1	7.70	32.727	. .	32.571
	14	Anon. 16^{h} 47^{m} 16^{s}	8.3	3	III–VII.	90 0 1.9	12.2	9.9	10.9	9.5	2.5	7.82	33.968	. .	33.817
	15	B. A. C. 5690.	7.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	36.560	. .	36.433
	16	Anon. 16^{h} 57^{m} 39^{s}	7.7	3	III–VII.	95 45 1.2	11.7	10.1	11.2	10.8	3.6	8.10	30.397	. .	30.247
	17	38 Ophiuchi.	. .	3	IV–VI.	85 20 1.8	11.2	11.1	12.9	11.7	4.0	8.78	29.387	. .	29.231
	18	Anon. 17^{h} 18^{m} 14^{s}	9.0	3	III–VII.	90 20 0.3	11.4	8.9	9.0	9.2	1.9	6.78	29.485	. .	29.334
	19	Anon. 17^{h} 25^{m} 56^{s}	9.0	1	IX.	91 20 0.8	10.5	9.0	9.2	8.9	1.2	6.60	32.542	. .	32.430
	20	Nadir	. .	.	. .	200 0 0.0	9.6	8.2	11.4	8.4	4.5	7.02	30.264	. .	. .
23	21	n Virginis.	. .	3	III–VII.	65 5 0.8	4.9	5.2	10.1	8.1	2.6	5.28	32.156	—0.113	32.044
	22	Anon. 14^{n} 0^{m} 46^{s}	. .	3	V, VII, IX.	91 20 3.0	10.8	8.9	14.3	11.9	6.3	9.20	35.954	. .	35.861
	23	Lacaille 5906.	. .	3	III–VII.	85 34 58.7	64.3	65.7	71.3	67.7	61.0	64.78	29.814	. .	29.706
	24	Lamont 4482.	8.3	3	III–VII.	58 40 2.1	10.1	8.8	13.9	12.6	8.1	9.27	27.079	. .	26.966
	25	Lacaille 6190.	6.0	3	III–VII.	92 39 59.8	66.2	63.8	68.6	67.2	60.3	64.32	27.641	. .	27.534
	26	Weisse XIV, 1121	. .	2	I, IX.	60 40 4.2	10.9	10.2	15.2	13.1	9.4	10.50	31.358	. .	31.246
	27	Weisse XIV, 1118	. .	2	IV, VI.	“ “ “	“	“	“	“	“	“	29.484	. .	29.371
	28	Weisse (2) XV, 301	7.5	3	III–VII.	13 25 0.1	9.2	8.2	11.9	11.3	4.1	7.47	31.998	. .	31.875
	29	O. Arg. S. 14648.	8.0	3	III–VII.	83 35 0.0	5.4	5.1	9.8	6.4	1.2	4.65	35.990	. .	35.881
	30	O. Arg. S. 14665.	8.7	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	36.265	. .	36.169
	31	Lalande 28740	7.2	3	IV–VI.	352 39 58.7	65.7	67.0	69.9	68.8	61.5	65.27	28.237	. .	28.117
	32	O. Arg. S. 15023.	7.4	3	III–VII.	84 25 3.5	10.5	11.3	14.8	12.7	7.8	10.10	30.684	. .	30.576
	33	Lacaille 6641.	7.0	3	III–VII.	95 15 2.1	9.1	10.0	14.0	10.8	4.2	8.37	34.619	. .	34.513
	34	B. A. C. 5359.	5.5	3	III–VII.	48 40 2.1	9.4	8.8	15.0	12.1	6.6	9.00	33.124	. .	33.009
	35	O. Arg. S. 15788.	8.8	3	III–VII.	82 45 0.1	7.4	7.1	13.3	7.8	1.1	6.13	32.466	. .	32.357
	36	Lacaille 6976.	8.0	3	III–VII.	91 35 1.2	9.8	8.2	13.9	9.2	3.3	7.60	33.574	. .	33.467
	37	Anon. 16^{h} 44^{m} 8^{s}	7.7	3	III–VII.	95 39 59.2	68.3	67.2	72.4	67.3	62.1	66.08	35.443	. .	35.337
	38	Nadir	. .	.	. .	199 59 56.0	62.5	62.3	68.3	63.5	59.3	61.98	30.054	. .	. .
24	39	Lacaille 5906.	. .	3	V, VII, IX.	85 35 2.4	6.4	7.6	3.8	10.4	6.1	6.12	29.863	—0.171	29.705
	40	54 Hydræ, (1st *)	. .	2	I, IX.	83 45 0.2	6.1	4.8	1.5	7.3	3.5	3.90	29.762	. .	29.614
	41	54 Hydræ, (2d *)	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	29.583	. .	29.416
	42	Anon. 14^{h} 52^{m} 32^{s}	8.0	3	IV–VI.	18 10 3.7	10.6	10.2	4.3	13.9	7.2	8.32	25.806	. .	25.632
	43	Weisse (2) XIV, 1147	9.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	32.600	. .	32.414
	44	Anon. 15^{h} 2^{m} 2^{s}.	8.0	3	III–VII.	95 50 2.2	9.6	8.3	3.3	10.8	6.6	6.80	32.733	. .	32.569
	45	O. Arg. S. 14511	8.5	3	III–VII.	85 20 0.9	5.3	7.2	2.9	9.6	4.1	5.00	27.531	. .	27.365
	46	Lacaille 6415.	6.0	3	III–VII.	98 25 1.0	8.6	6.7	2.3	10.3	4.7	5.60	26.798	. .	26.635
	47	Anon. 15^{h} 32^{m} 8^{s}	9.0	3	III–VII.	81 20 4.9	11.5	9.7	4.9	11.8	7.1	8.32	30.495	. .	30.328
	48	O. Arg. S. 14882.	9.2	3	III–VII.	78 10 1.7	8.4	8.1	3.1	11.2	5.0	6.25	30.250	. .	30.082
	49	B. A. C. 5297.	6.6	3	III–VII.	88 4 58.7	64.8	62.7	57.0	64.8	60.0	61.33	26.626	. .	26.460
	50	O. Arg. S. 15235.	8.8	3	III–VII.	80 35 3.1	9.7	8.5	4.7	11.4	5.3	7.12	31.416	. .	31.249
	51	Weisse (2) XVI, 154	9.0	3	IV, V, VII.	16 44 58.0	65.7	64.8	57.6	66.4	61.0	62.25	32.664	. .	32.488
	52	(* 120) Washington.	10.0	1	V.	339 20 2.2	8.4	12.3	4.8	12.8	6.1	7.77	31.673	. .	31.502
	53	Weisse (2) XVI, 788	6.0	3	III–VII.	25 5 0.8	7.3	7.3	2.0	8.5	3.9	4.97	28.714	. .	28.537
	54	B. A. C. 5583.	7.0	2	I, IX.	99 40 3.3	11.2	8.9	5.0	9.2	4.9	7.08	28.620	. .	28.490
	55	B. A. C. 5584.	6.5	3	III–VII.	“ “ “	“	“	“	“	“	“	29.310	. .	29.147
	56	Lacaille 7023.	7.3	3	IV–VI.	90 30 4.9	12.4	10.8	6.9	12.2	6.1	8.88	29.335	. .	29.166
	57	Lacaille 7087.	6.0	3	I, III, V.	92 0 0.1	7.8	6.6	2.4	7.8	0.9	4.27	28.157	. .	27.992
	58	Anon. 17^{h} 5^{m} 11^{s}	9.3	3	III–VII.	94 0 3.4	10.2	8.8	5.3	11.7	4.9	7.38	31.582	. .	31.418
	59	Anon. 17^{h} 9^{m} 9^{s}	8.3	3	IV–VI.	“ “ “	“	“	“	“	“	“	39.705	. .	39.536
	60	Anon. 17^{h} 13^{m} 10^{s}	8.3	1	V.	“ “ “	“	“	“	“	“	“	24.212	. .	24.041
	61	Anon. 17^{h} 13^{m} 56^{s}	8.3	1	V.	“ “ “	“	“	“	“	“	“	20.122	. .	19.951
	62	Anon. 17^{h} 23^{m} 46^{s}	9.5	1	V.	94 0 3.4	10.1	8.7	5.0	11.6	5.2	7.33	38.975	. .	38.804
	63	Anon. 17^{h} 30^{m} 48^{s}	9.5	1	V.	“ “ “	“	“	“	“	“	“	33.040	. .	32.869
	64	Anon. 17^{h} 34^{m} 59^{s}	7.2	2	VII, IX.	“ “ “	“	“	“	“	“	“	27.092	. .	26.955
	65	O. Arg. S. 17249	8.0	3	III–VII.	85 40 3.3	10.8	10.9	7.3	12.7	5.4	8.40	35.118	. .	34.952
	66	Nadir	. .	.	. .	199 59 59.4	65.8	66.0	62.5	67.2	63.6	64.08	30.179	—0.171	. .

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 37.0	S. 65 4 30.5	2 0.9	− 26 12 52.2	+ 5.9	Y.	
2	. .	. .	. .	− 1 1.0	65 39 5.9	2 4.2	− 26 47 30.9	+ 5.3	Y.	
3	. .	. .	. .	+ 1 53.5	65 42 0.4	2 4.5	− 26 50 25.7	+ 5.2	Y.	
4	. .	. .	. .	− 0 31.6	62 54 35.7	1 50.2	− 24 2 46.6	+ 4.0	Y.	
5	30.234	74.1	67.9	− 0 26.2	62 54 41.0	1 50.2	− 24 2 51.9	+ 4.0	Y.	
6	. .	. .	. .	+ 1 58.9	70 37 4.7	2 39.5	− 31 46 4.9	+ 5.3	Y.	
7	. .	. .	67.2	− 0 33.7	S. 41 54 35.1	50.8	− 3 1 46.7	− 0.9	Y.	
8	. .	. .	. .	+ 0 2.7	N. 4 4 50.2	4.0	+ 42 58 33.5	− 9.4	Y.	
9	30.232	73.2	66.4	+ 0 54.1	S. 60 26 0.6	1 39.7	− 21 34 1.0	+ 2.1	Y.	
10	. .	. .	. .	+ 0 5.5	73 30 12.2	3 9.2	− 34 39 42.2	+ 3.5	Y.	
11	30.232	72.5	66.1	− 2 56.3	59 22 9.5	1 35.6	− 20 30 5.9	+ 0.8	Y.	
12	. .	. .	. .	+ 0 17.3	64 55 27.3	2 0.8	− 26 3 48.8	+ 1.2	Y.	
13	. .	. .	. .	− 1 20.6	44 58 47.1	56.7	− 6 6 4.6	− 1.8	Y.	
14	. .	. .	. .	− 1 59.7	69 58 8.2	2 34.5	− 31 7 3.4	+ 0.9	Y.	
15	. .	. .	. .	− 3 21.5	69 56 46.4	2 34.4	− 31 5 41.5	+ 0.8	Y.	
16	30.232	71.8	65.6	− 0 7.8	75 45 0.4	3 39.9	− 36 55 1.0	+ 0.6	Y.	
17	. .	. .	. .	+ 0 24.1	65 20 32.8	2 3.2	− 26 28 56.8	− 0.8	Y.	
18	. .	. .	. .	+ 0 20.8	70 20 27.6	2 37.8	− 31 29 26.2	− 1.0	Y.	
19	30.232	71.4	65.0	− 1 16.2	71 18 50.4	2 46.6	− 32 27 57.8	− 1.4	Y.	
20	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
21	30.196	78.8	79.2	− 1 4.0	45 4 1.2	55.3	− 6 11 17.3	+ 2.9	Y.	
22	. .	. .	77.1	− 3 3.8	71 17 5.4	2 42.1	− 32 26 8.3	+ 10.2	Y.	
23	30.188	78.5	76.2	+ 0 9.2	65 35 14.0	2 1.9	− 26 43 36.6	+ 8.1	Y.	
24	. .	. .	74.3	+ 1 34.9	38 41 44.2	44.7	+ 0 11 10.4	− 0.3	Y.	
25	30.192	77.9	74.2	+ 1 17.2	72 41 21.5	2 57.0	− 33 50 39.3	+ 8.0	Y.	
26	. .	. .	. .	− 0 39.0	40 39 31.5	48.0	− 1 46 40.2	− 0.3	Y.	
27	. .	. .	. .	+ 0 19.7	S. 40 40 30.2	48.0	− 1 47 38.9	− 0.3	Y.	
28	. .	. .	73.5	− 0 58.8	N 6 35 51.3	6.5	+ 45 29 37.0	− 11.0	Y.	
29	. .	. .	. .	− 3 4.4	S. 63 32 0.2	1 51.9	− 24 40 12.9	+ 4.3	Y.	
30	30.190	77.0	73.0	− 3 13.5	S. 63 31 51.2	1 51.9	− 24 40 3.8	+ 4.2	Y.	
31	. .	. .	. .	+ 0 58.9	N 27 18 55.8	28.9	+ 66 13 4.0	− 12.8	Y.	
32	. .	. .	. .	− 0 18.0	S. 64 24 52.1	1 56.5	− 25 33 9.4	+ 3.4	Y.	
33	30.192	76.2	71.4	− 2 21.5	75 12 46.9	3 29.1	− 36 22 36.8	+ 5.0	Y.	
34	. .	. .	. .	− 1 34.3	28 38 34.7	30.7	+ 10 14 33.8	− 3.9	Y.	
35	30.184	75.3	70.3	− 1 13.9	62 43 52.2	1 48.6	− 23 52 1.6	+ 0.9	Y.	
36	. .	. .	. .	− 1 48.7	71 33 18.9	2 46.9	− 32 42 26.6	+ 2.4	Y.	
37	30.190	75.1	70.1	− 2 47.3	75 37 18.8	3 35.6	− 36 47 15.2	+ 1.7	Y.	
38	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
39	30.140	80.8	80.0	+ 0 9.2	65 35 15.3	2 0.8	− 26 43 36.8	+ 8.1	Y.	
40	. .	. .	. .	+ 0 12.1	63 45 16.0	1 51.7	− 24 53 28.4	+ 6.6	Y.	
41	30.140	80.7	78.0	+ 0 18.3	S. 63 45 22.2	1 51.7	− 24 53 34.6	+ 6.6	Y.	
42	. .	. .	. .	+ 2 16.7	N. 1 47 35.0	1.7	+ 40 41 16.0	− 10.8	Y.	
43	. .	. .	. .	− 1 15.7	N. 1 51 7.3	1.8	+ 40 44 48.4	− 10.8	Y.	
44	30.138	80.2	76.7	− 1 20.5	S. 75 48 46.3	3 35.4	− 36 58 42.4	+ 8.3	Y.	
45	. .	. .	. .	+ 1 22.5	65 21 27.5	2 0.5	− 26 29 48.7	+ 5.2	Y.	
46	30.140	79.7	75.3	+ 1 45.3	78 26 50.9	4 24.7	− 39 37 36.4	+ 4.2	Y.	
47	. .	. .	. .	− 0 10.3	61 19 58.0	1 41.4	− 22 28 0.2	+ 3.5	Y.	
48	. .	. .	74.8	− 0 2.6	58 10 3.7	1 29.5	− 19 17 53.9	+ 2.5	Y.	
49	30.144	79.1	74.4	+ 1 50.8	68 6 52.1	2 17.8	− 29 15 30.6	+ 3.9	Y.	
50	. .	. .	. .	− 0 39.1	S. 60 34 28.0	1 38.5	− 21 42 27.3	+ 2.1	Y.	
51	. .	. .	74.0	− 1 18.0	N. 3 16 15.7	3.2	+ 42 9 58.2	− 9.3	Y.	
52	. .	. .	. .	− 0 47.1	N. 40 40 39.3	47.9	+ 79 35 6.5	− 11.9	Y.	
53	30.146	78.1	73.5	+ 0 45.8	S. 5 5 50.8	5.0	+ 33 47 43.5	− 7.6	Y.	
54	. .	. .	. .	+ 0 47.3	79 40 54.4	4 56.4	− 40 52 11.5	+ 2.9	Y.	
55	. .	. .	. .	+ 0 26.7	79 40 33.8	4 56.2	− 40 51 50.7	+ 2.9	Y.	
56	. .	. .	. .	+ 0 26.1	70 30 35.0	2 36.3	− 31 39 32.1	+ 1.2	Y.	
57	30.140	77.8	72.8	+ 1 2.8	72 1 7.1	2 50.3	− 33 10 18.2	+ 0.8	Y.	
58	. .	. .	. .	− 0 44.4	73 59 22.9	3 12.1	− 35 8 55.8	+ 0.2	Y.	
59	. .	. .	. .	− 4 59.3	73 55 8.1	3 11.3	− 35 4 40.1	− 0.1	Y.	
60	. .	. .	. .	+ 3 6.4	74 3 13.8	3 13.0	− 35 12 47.5	− 0.3	Y.	
61	. .	. .	72.4	+ 5 14.0	74 5 21.4	3 13.4	− 35 14 55.5	− 0.4	Y.	
62	. .	. .	. .	− 4 36.2	73 55 31.1	3 11.5	− 35 5 3.3	− 1.0	Y.	
63	. .	. .	. .	− 1 29.9	73 58 37.4	3 12.2	− 35 8 10.4	− 1.5	Y.	
64	. .	. .	. .	+ 1 35.3	74 1 42.6	3 12.9	− 35 11 16.2	− 1.8	Y.	
65	30.140	77.1	71.5	− 2 35.2	S. 65 37 33.2	2 3.0	− 26 45 56.9	− 2.6	Y.	
66	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. June 25	1	B. A. C. 4691	. .	3	III–VII.	74 25 2.0	6.0	6.1	1.2	9.7	4.4	4.90	27.251	−0.170	27.084
	2	B. A. C. 4757	5.7	3	III–VII.	93 5 2.1	6.8	4.9	0.9	6.8	4.8	4.38	35.375	. .	35.211
	3	B. A. C. 4941	6.0	3	III–VII.	61 5 1.3	5.6	4.9	58.9	8.8	5.1	6.10	26.279	. .	26.109
	4	O. Arg. S. 14257.	8.3	2	VIII, IX.	87 50 6.6	10.6	9.1	5.0	13.6	8.4	8.88	27.580	. .	27.445
	5	O. Arg. S. 14435.	9.0	3	III–VII.	89 10 6.1	11.7	10.1	4.8	13.2	8.9	9.13	26.252	. .	26.088
	6	Anon. 15^h 16^m 50^s	8.5	2	VII, IX.	95 50 4.8	10.8	10.1	4.7	12.9	8.9	8.70	25.761	. .	25.626
	7	Anon. 15^h 17^m 47^s	8.0	1	IX.	“ “ “	“	“	“	“	“	“	27.469	. .	27.351
	8	11 Serpentis	6.0	3	III–VII.	59 35 4.6	9.7	9.7	3.5	13.1	9.5	8.35	25.719	. .	25.549
	9	Anon. 15^h 32^m 8^s	9.0	3	IV–VI.	81 20 0.0	6.2	5.2	0.0	7.7	2.7	3.63	30.282	. .	30.113
	10	O. Arg. S. 14871.	7.5	3	III–VII.	84 20 2.2	7.8	8.1	1.9	10.9	5.4	6.05	31.399	. .	31.234
	11	Lacaille 6641.	6.5	3	III–VII.	95 15 4.9	10.4	11.0	5.1	12.7	7.3	8.57	34.599	. .	34.436
	12	Anon. 15^h 59^m 27^s	7.5	3	IV–VI.	70 25 0.7	7.4	6.3	2.0	8.8	5.8	5.17	29.125	. .	28.956
	13	(120*) Washington	10.0	3	IV–VI.	339 20 1.1	6.2	10.7	1.8	11.3	4.8	5.98	31.619	. .	31.425
	14	Anon. 16^h 12^m 28^s	10.0	2	VII, VIII.	“ “ “	“	“	“	“	“	“	31.032	. .	30.754
	15	O. Arg. S. 15788.	8.0	3	III–VII.	87 30 5.6	10.0	10.5	6.0	12.3	8.4	8.80	30.583	. .	30.418
	16	Lacaille 6970.	5.5	3	III, VII, IX.	98 0 1.6	8.5	7.7	2.1	9.4	4.2	5.58	34.949	. .	34.805
	17	B. A. C. 5665	8.0	3	IV–VI.	89 25 3.0	9.3	9.1	3.1	10.8	6.4	6.95	33.583	. .	33.415
	18	Anon. 16^h 45^m 56^s	7.3	2	I, IX.	“ “ “	“	“	“	“	“	“	37.272	. .	37.131
	19	Anon. 16^h 56^m 43^s	8.5	3	III–VII.	90 5 2.9	9.1	8.7	3.5	10.3	5.0	6.58	35.470	. .	35.306
	20	Anon. 17^h 14^m 2^s	8.3	1	V.	94 10 3.7	10.6	9.2	6.0	11.9	6.8	8.03	39.366	. .	39.196
	21	Nadir	. .	.	. .	199 59 58.7	64.8	64.9	60.0	65.9	63.5	62.97	30.144	. .	. .
28	22	19 Scorpii	5.5	3	III–VII.	82 45 4.0	9.2	9.5	4.6	9.8	5.0	7.02	33.943	−0.197	33.750
	23	Weisse XVI, 794	. .	3	III–VII.	45 5 3.9	8.2	9.9	3.9	11.8	5.7	7.23	32.825	. .	32.626
	24	Nadir	. .	.	. . .	199 59 53.7	59.2	60.5	55.7	61.1	57.6	57.97	30.004	. .	. .
	25	Anon. 17^h 29^m 47^s	8.0	3	III–VII.	79 30 3.4	11.9	12.3	5.9	12.1	6.2	8.63	33.473	. .	33.277
	26	B. A. C. 6015	6.5	3	IV–VI.	85 50 2.9	9.0	10.9	4.7	11.2	3.2	6.98	35.981	. .	35.786
	27	Anon. 17^h 53^m 54^s	8.2	3	III–VII.	83 0 0.0	8.0	8.1	2.1	7.9	1.2	4.55	28.731	. .	28.538
	28	Lacaille 7588.	6.5	3	III–VII.	91 34 59.0	66.2	66.7	60.1	66.2	58.7	62.82	30.607	. .	30.416
30	29	c Bootis.	5.0	3	V, VII, IX.	33 29 59.4	66.4	66.1	61.1	68.8	61.9	63.95	29.012	−0.187	28.818
	30	O. Arg. S. 14531.	7.5	3	III–VII.	80 25 4.4	11.8	11.8	5.1	12.6	6.9	8.77	26.663	. .	26.480
	31	Radcliffe 3398	7.0	3	IV–VI.	3 15 4.7	11.9	13.1	6.0	15.5	7.4	9.77	30.087	. .	29.896
	32	Anon. 15^h 34^m 16^s	9.2	1	V.	15 45 2.3	7.8	8.8	1.2	9.8	3.0	5.48	32.075	. .	31.888
	33	Radcliffe 3431	7.7	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	27.631	. .	27.432
	34	Anon. 15^h 49^m 12^s	8.5	3	III–VII.	80 45 2.0	8.4	7.9	2.7	8.5	2.7	5.37	35.421	. .	35.238
	35	O. Arg. S. 15205	6.0	3	III–VII.	82 9 59.6	65.9	66.6	60.9	67.6	61.3	63.65	36.082	. .	35.899
	36	O. Arg. N. 15952	7.7	3	V, VI, VII.	353 50 2.8	8.1	11.8	4.4	13.1	5.2	7.57	26.700	. .	26.503
	37	O. Arg. S. 15694.	9.0	3	III–VII.	88 30 1.9	7.2	7.7	1.0	8.6	3.0	4.90	34.719	. .	34.537
	38	O. Arg. S. 15782.	9.0	3	III–VII.	“ “ “	“	“	“	“	“	“	32.237	. .	32.055
	39	O. Arg. S. 15868.	9.0	3	III–VII.	80 0 0.2	7.4	8.3	2.6	9.3	3.1	5.15	34.953	. .	34.770
	40	B. A. C. 5630	7.0	3	III–VII.	90 15 3.9	10.9	9.8	5.1	10.9	4.5	7.52	27.744	. .	27.563
	41	Anon. 16^h 42^m 30^s	8.5	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	29.141	. .	28.975
	42	Anon. 16^h 49^m 26^s	9.0	3	III–VII.	85 20 1.3	7.7	10.1	4.8	10.8	3.0	6.28	29.840	. .	29.658
	43	Anon. 16^h 55^m 48^s	9.0	3	IV–VI.	82 55 0.6	6.2	6.8	0.9	6.2	0.6	3.55	25.601	. .	25.415
	44	Anon. 16^h 56^m 9^s	8.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	23.982	. .	23.821
	45	Anon. 17^h 8^m 10^s	. .	1	V.	94 10 3.8	9.8	11.4	6.0	11.8	6.2	8.17	29.836	. .	29.649
	46	O. Arg. S. 16659.	8.5	3	III–VII.	81 30 3.0	10.2	9.4	4.9	10.2	4.2	6.98	32.359	. .	32.176
	47	Anon. 17^h 22^m 35^s	7.7	3	III–VII.	99 45 0.2	5.8	6.1	0.1	5.1	58.3	2.60	30.282	. .	30.103
	48	Anon. 17^h 31^m 35^s	8.0	2	III, V.	90 55 4.5	10.1	11.2	5.6	11.2	5.3	7.98	28.427	. .	28.240
	49	Anon. 17^h 31^m 28^s	9.0	2	VII, IX.	“ “ “	“	“	“	“	“	“	26.877	. .	26.721
	50	O. Arg. S. 17270.	7.5	3	III–VII.	81 45 3.3	10.0	10.8	5.1	11.3	4.8	7.55	31.208	. .	31.025
	51	O. Arg. S. 17426.	9.0	2	IV, VI.	84 0 0.0	7.8	8.2	2.8	9.2	1.8	4.97	26.207	. .	26.021
	52	O. Arg. S. 17447.	8.7	2	V, VII.	“ “ “	“	“	“	“	“	“	28.945	. .	28.765
	53	O. Arg. S. 17449.	8.5	1	IX.	“ “ “	“	“	“	“	“	“	37.531	. .	37.382
	54	ε Telescopii	5.5	3	III–VII.	104 45 3.8	11.9	12.3	7.1	12.1	4.8	8.67	33.638	. .	33.461
	55	Anon. 18^h 9^m 17^s	9.0	3	V, VII, IX.	77 30 3.8	12.2	12.9	6.9	12.9	6.6	9.22	35.134	. .	34.962
	56	Anon. 18^h 15^m 37^s	8.5	2	V, VII.	97 30 4.2	12.2	12.3	7.3	11.9	5.9	8.97	30.161	. .	29.984
	57	Anon. 18^h 16^m 10^s	8.3	2	VII, IX.	“ “ “	“	“	“	“	“	“	34.319	. .	34.169
	58	Nadir	. .	.	. .	200 0 0.2	6.1	8.2	2.7	8.2	4.6	5.00	30.221	. .	. .
July 5	59	ε Bootis, (1st and N.*)	. .	3	III–VII.	31 14 59.5	67.2	66.1	60.4	70.7	62.5	64.40	28.658	−0.164	28.489
	60	B. A. C. 4941	6.0	3	III–VII.	61 5 2.7	10.3	8.6	4.8	12.4	7.0	7.63	26.376	. .	26.212
	61	i Bootis, (1st *)	. .	2	V, VI.	10 45 1.9	10.3	10.5	4.9	14.1	5.1	7.80	32.450	. .	32.285
	62	i Bootis, (2d *)	. .	2	VIII, IX.	“ “ “	“	“	“	“	“	“	32.539	. .	32.345
	63	O. Arg. S. 14531.	8.0	3	III–VII.	80 25 4.3	12.8	11.7	6.2	15.4	6.9	9.55	26.660	. .	26.500
	64	Radcliffe 3398	7.0	3	III–VII.	3 15 0.1	8.3	9.1	2.9	12.3	2.8	5.92	29.954	. .	29.776
	65	Weisse XV, 822	9.0	3	III–VII.	15 45 0.0	7.4	8.0	0.8	9.6	2.0	4.63	31.863	−0.164	31.690

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.068	83.7	83.3	+ 1 31.2	S. 54 26 36.2	1 16.3	− 15 34 13.2	+ 5.3	Y.	
2	. .	. .	. .	− 2 43.4	73 2 21.0	2 57.1	− 34 11 38.9	+ 10.1	Y.	
3	30.076	83.0	79.2	+ 2 1.8	41 7 7.8	48.1	− 2 14 16.7	− 0.2	Y.	
4	. .	. .	. .	+ 1 20.0	67 51 28.8	2 14.5	− 29 0 4.1	+ 6.6	Y.	
5	30.080	82.9	78.8	+ 2 2.4	69 12 11.5	2 24.0	− 30 20 56.3	+ 6.4	Y.	
6	. .	. .	. .	+ 2 16.8	75 52 25.5	3 35.2	− 37 2 21.5	+ 7.5	Y.	
7	. .	. .	. .	+ 1 22.9	75 51 31.6	3 35.1	− 37 1 27.5	+ 7.5	Y.	
8	. .	. .	. .	+ 2 19.2	39 37 27.6	45.7	− 0 44 34.1	− 1.3	Y.	
9	30.080	82.5	77.6	− 0 3.6	61 20 0.1	1 40.7	− 22 28 1.6	+ 3.5	Y.	
10	. .	. .	. .	− 0 38.7	64 19 27.4	1 54.5	− 25 27 42.6	+ 3.8	Y.	
11	. .	. .	76.7	− 2 19.1	75 12 49.5	3 26.2	− 36 22 36.4	+ 5.1	Y.	
12	. .	. .	. .	+ 0 32.7	S. 50 25 37.9	1 6.9	− 11 33 5.5	+ 0.1	Y.	
13	. .	. .	. .	− 0 44.7	N. 40 40 38.7	47.6	+ 79 35 5.6	− 12.2	Y.	Very faint.
14	30.072	81.2	75.8	− 0 23.6	N. 40 40 17.6	47.6	+ 79 34 44.5	− 12.5	Y.	Very faint.
15	. .	. .	. .	− 0 13.1	S. 67 29 55.7	2 13.1	− 28 38 29.6	+ 1.6	Y.	
16	. .	. .	. .	− 2 30.6	77 57 35.0	4 13.8	− 39 8 9.5	+ 2.5	Y.	
17	. .	. .	. .	− 1 47.1	69 23 19.9	2 26.5	− 30 32 7.2	+ 1.0	Y.	
18	30.080	80.8	74.7	− 3 43.7	69 21 23.3	2 26.3	− 30 30 10.3	+ 1.0	Y.	
19	. .	. .	. .	− 2 46.3	70 2 20.2	2 31.7	− 31 11 12.7	+ 0.4	Y.	
20	. .	. .	74.2	− 4 48.6	74 5 19.4	3 12.3	− 35 14 52.5	− 0.3	Y.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
22	29.916	84.2	81.0	− 1 57.6	62 43 9.5	1 45.5	− 23 51 15.7	+ 2.1	Y.	
23	. .	. .	80.4	− 1 22.3	25 3 44.9	25.6	+ 13 49 28.8	− 5.4	Y.	
24	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
25	29.890	83.5	80.0	− 1 42.7	59 28 25.9	1 32.4	− 20 36 19.1	− 2.4	Y.	
26	. .	. .	. .	− 3 1.5	65 47 5.5	2 0.9	− 26 55 27.2	− 2.4	Y.	
27	29.894	83.5	79.8	+ 0 45.8	63 0 50.3	1 47.0	− 24 8 58.0	− 3.3	Y.	
28	. .	. .	. .	− 0 13.0	71 34 49.8	2 42.5	− 32 43 53.0	− 3.4	Y.	
29	29.764	85.1	83.1	+ 0 37.0	13 30 41.0	13.0	+ 25 22 45.3	− 7.9	Y.	
30	. .	. .	. .	+ 1 50.2	S. 60 26 58.9	1 35.2	− 21 34 54.9	+ 4.4	Y.	
31	. .	. .	82.3	+ 0 3.2	N. 16 44 47.0	16.3	+ 55 38 42.6	− 13.5	Y.	
32	. .	. .	. .	− 0 59.2	4 15 53.7	4.0	+ 43 9 37.0	− 11.4	Y.	Faint.
33	29.760	85.0	82.0	+ 1 20.4	N. 4 13 34.1	4.0	+ 43 7 17.4	− 11.4	Y.	
34	. .	. .	. .	− 2 44.2	S. 60 42 21.2	1 36.4	− 21 50 18.2	+ 2.8	Y.	
35	. .	. .	. .	− 3 5.0	S. 62 6 58.6	1 42.1	− 23 15 1.5	+ 2.6	Y.	
36	. .	. .	. .	+ 1 49.4	N. 26 8 3.0	26.6	+ 65 2 8.9	− 13.1	Y.	
37	29.764	84.1	81.5	− 2 22.2	S. 68 27 42.7	2 16.5	− 29 36 20.0	+ 2.5	Y.	
38	. .	. .	. .	− 1 4.4	68 29 0.5	2 16.7	− 29 37 38.0	+ 2.1	Y.	
39	. .	. .	. .	− 2 29.5	59 57 35.6	1 33.6	− 21 5 30.0	+ 0.4	Y.	
40	. .	. .	. .	+ 1 16.3	70 16 23.8	2 30.1	− 31 25 14.6	+ 1.8	Y.	
41	. .	. .	. .	+ 0 32.1	70 15 39.6	2 30.0	− 31 24 30.3	+ 1.7	Y.	
42	29.766	84.0	81.3	+ 0 10.7	65 20 17.0	1 57.6	− 26 28 35.4	+ 0.5	Y.	
43	. .	. .	. .	+ 2 23.4	62 57 27.0	1 46.0	− 24 5 33.7	− 0.2	Y.	
44	. .	. .	. .	+ 3 13.2	62 58 16.8	1 46.0	− 24 6 23.6	+ 0.2	Y.	
45	. .	. .	. .	+ 0 11.0	74 10 19.1	3 8.9	− 35 19 48.8	+ 0.6	Y.	
46	29.750	83.7	80.6	− 1 8.2	61 28 58.8	1 39.7	− 22 36 59.2	− 1.3	Y.	
47	. .	. .	80.5	− 0 3.2	79 44 59.4	4 50.2	− 40 56 10.3	+ 0.1	Y.	
48	. .	. .	. .	+ 0 55.1	70 56 3.1	2 35.8	− 32 4 59.6	− 1.3	Y.	
49	. .	. .	. .	+ 1 42.6	70 56 50.6	2 35.9	− 32 5 47.2	− 1.2	Y.	Many stars in field.
50	29.748	83.3	80.4	− 0 32.1	61 44 35.4	1 40.8	− 22 52 37.0	− 2.8	Y.	
51	. .	. .	. .	+ 2 4.5	64 2 9.5	1 51.2	− 25 10 21.4	− 3.0	Y.	
52	. .	. .	. .	+ 0 38.7	64 0 43.6	1 51.1	− 25 8 55.5	− 3.1	Y.	Revolution hypothetical.
53	. .	. .	. .	− 3 51.6	63 56 13.4	1 50.7	− 25 4 24.8	− 3.1	Y.	
54	29.754	83.2	80.0	− 1 48.5	84 43 20.2	8 45.4	− 45 58 26.3	− 2.5	Y.	Good observation.
55	. .	. .	. .	− 2 35.6	57 27 33.7	1 25.1	− 18 35 19.5	− 4.3	Y.	
56	. .	. .	. .	+ 0 0.5	77 30 9.5	3 59.8	− 38 40 30.0	− 3.9	Y.	
57	. .	. .	. .	− 2 10.7	77 27 58.3	3 59.0	− 38 38 18.1	− 3.9	Y.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
59	30.018	78.8	78.2	+ 0 47.3	11 15 51.7	19.9	+ 27 37 36.6	− 10.9	Y.	
60	. .	. .	. .	+ 1 58.5	S. 41 7 6.2	48.1	− 2 14 15.0	− 0.8	Y.	
61	. .	. .	. .	− 1 11.6	N. 9 16 3.8	9.0	+ 48 9 52.0	− 13.7	Y.	
62	30.012	78.7	77.6	− 1 13.5	N. 9 16 5.7	9.0	+ 48 9 54.0	− 13.7	Y.	
63	. .	. .	. .	+ 1 49.5	S. 60 26 59.1	1 37.0	− 21 34 56.9	+ 4.2	Y.	
64	. .	. .	76.8	+ 0 7.0	N. 16 44 47.1	16.6	+ 55 38 43.0	− 14.4	Y.	
65	. .	. .	. .	− 0 52.9	N. 4 15 48.3	4.1	+ 43 9 31.7	− 12.3	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
July 5	1	Radcliffe 3431	8.0	2	VII, IX.	15 45 0.0	7.4	8.0	0.8	9.6	2.0	4.63	27.590	—0.164	27.408
	2	ε Coronæ Borealis	. .	3	III–VII.	31 40 0.9	7.9	8.0	1.8	11.2	3.0	6.47	34.252	. .	34.083
	3	51 Libræ, (2d *)	. .	3	III–VII.	69 55 4.8	11.3	11.2	7.0	14.1	7.5	9.32	33.773	. .	33.611
	4	Lacaille 6796	. .	3	IV, V, VII.	91 50 0.7	9.1	9.0	3.4	10.2	1.9	5.72	30.074	. .	29.914
	5	Lacaille 6797	. .	2	I, IX.	" " "	"	"	"	"	"	"	37.566	. .	37.423
	6	Radcliffe 3588	7.2	3	IV–VI.	9 45 4.8	14.0	13.8	8.9	17.1	6.8	10.90	27.726	. .	27.560
	7	Nadir	. .	.	. .	200 0 0.9	6.2	7.8	3.1	9.4	4.2	5.27	30.210	. .	. .
	8	u Herculis	. .	2	VII, IX.	25 40 0.8	8.7	7.8	1.6	10.0	2.0	5.15	32.383	. .	32.210
	9	Anon. 17^h 23^m 20^s	. .	3	V, VII, IX.	90 40 3.7	11.9	10.9	5.3	11.8	4.5	6.02	35.715	. .	35.582
	10	Rumker 5943	5.5	3	III–VII.	10 14 59.4	68.1	68.8	63.9	71.2	60.9	65.38	32.428	. .	32.253
	11	Anon. 17^h 43^m 13^s	8.0	3	III–VII.	90 15 2.8	11.5	10.3	6.1	12.4	3.7	7.80	33.337	. .	33.179
	12	B. A. C. 6070	8.0	3	IV–VI.	95 45 5.2	14.4	13.9	9.1	16.2	8.4	11.20	39.037	. .	38.875
	13	Lacaille 7516	9.0	1	IX.	" " "	"	"	"	"	"	"	29.851	. .	29.738
	14	Anon. 18^h 3^m 16^s	8.0	3	III–VII.	82 14 59.2	68.2	66.8	62.4	69.2	60.6	64.40	31.691	. .	31.531
	15	O. Arg. S. 18115, (1st *)	8.2	3	IV–VI.	74 0 3.7	12.7	12.6	9.6	13.2	5.1	9.48	28.050	. .	27.887
	16	O. Arg. S. 18115, (2d *)	8.2	2	I, IX.	" " "	"	"	"	"	"	"	28.354	. .	28.203
	17	B. A. C. 6284	6.0	3	III–VII.	73 35 0.8	9.8	9.6	6.1	11.2	2.7	6.70	35.709	. .	35.548
	18	O. Arg. S. 18505	9.0	3	III–VII.	84 30 3.7	12.6	12.8	7.9	13.9	6.5	9.57	33.485	. .	33.326
6	19	c Bootis	5.5	3	IV–VI.	33 30 6.7	14.7	12.8	9.2	16.5	9.1	11.50	29.197	—0.169	29.027
	20	Nadir	. .	.	. .	200 0 1.4	7.9	8.8	3.4	10.1	5.2	6.13	30.255	. .	. .
8	21	i Bootis, (1st *)	. .	3	VII, VIII, IX.	10 45 2.8	12.0	12.5	7.1	15.2	5.3	9.15	32.468	—0.144	32.302
	22	i Bootis, (2d *)	. .	3	IV–VI.	" " "	"	"	"	"	"	"	32.565	. .	32.418
	23	Lacaille 6368	. .	3	III–VII.	98 15 1.8	10.4	9.7	4.4	11.4	3.1	6.80	30.066	. .	29.930
	24	O. Arg. S. 14648	6.5	2	VII, IX.	83 35 0.8	9.5	9.0	5.0	9.7	2.0	6.00	36.000	. .	35.882
	25	O. Arg. S. 14665	8.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	36.287	. .	36.161
	26	O. Arg. S. 14674	8.0	1	IX.	" " "	"	"	"	"	"	"	30.961	. .	30.854
	27	O. Arg. S. 14855	8.5	2	V, VII.	84 25 2.9	11.6	12.9	7.0	13.2	5.1	8.78	29.054	. .	28.917
	28	O. Arg. S. 14861	9.0	1	IX.	" " "	"	"	"	"	"	"	32.848	. .	32.742
	29	Anon. 15^h 49^m 14^s	8.5	3	III–VII.	80 44 58.8	68.6	68.0	61.2	68.7	60.7	64.33	35.438	. .	35.298
	30	O. Arg. S. 15235	9.0	3	III–VII.	80 35 0.0	8.2	7.8	3.5	9.2	0.7	4.90	31.357	. .	31.217
	31	o Scorpii, (comp.)	9.5	3	III–VII.	84 10 2.7	10.8	11.5	7.0	11.7	3.9	7.93	33.306	. .	33.167
	32	Lacaille 6931	7.3	2	I, IX.	91 25 1.1	11.1	10.8	4.7	11.6	2.6	6.98	30.496	. .	30.383
	33	Anon. 16^h 33^m 50^s	8.5	3	III–VII.	" " "	"	"	"	"	"	"	31.733	. .	31.595
	34	Anon. 16^h 46^m 10^s	9.2	3	III–VII.	81 0 3.4	12.2	12.1	7.6	11.5	5.0	8.63	34.947	. .	34.807
	35	Anon. 16^h 53^m 11^s	7.5	1	V.	95 55 2.0	12.0	10.8	6.2	12.3	3.6	7.82	27.645	. .	27.501
	36	Lacaille 7123	6.0	1	V.	" " "	"	"	"	"	"	"	34.671	. .	34.527
	37	Lacaille 7207	6.5	3	III–VII.	96 50 2.2	13.3	12.9	7.8	13.6	4.3	9.02	28.758	. .	28.621
	38	B. A. C. 5890	5.5	3	IV, V, IX.	63 50 1.9	10.6	10.2	6.4	10.3	3.9	7.22	28.743	. .	28.604
	39	Anon. 17^h 26^m 32^s	9.0	1	V.	97 19 58.9	68.8	68.4	63.8	68.3	59.2	64.57	28.225	. .	28.081
	40	Anon. 17^h 27^m 0^s	8.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	30.423	. .	30.304
	41	Anon. 17^h 35^m 43^s	8.8	3	III–VII.	90 5 1.2	9.8	9.6	4.8	9.8	0.9	6.02	32.631	. .	32.493
	42	Lacaille 7469	7.3	3	III–VII.	" " "	"	"	"	"	"	"	23.669	. .	23.531
	43	Anon. 17^h 45^m 53^s	8.5	3	III–VII.	" " "	"	"	"	"	"	"	30.671	. .	30.533
	44	Lacaille 7514	6.0	3	III–VII.	100 15 3.2	11.4	11.1	6.9	10.8	3.3	7.78	27.153	. .	27.017
	45	Anon. 17^h 58^m 25^s	9.0	3	V, VII, IX.	80 19 58.9	68.9	69.8	64.2	69.7	61.2	65.45	30.155	. .	30.027
	46	O. Arg. S. 17861	7.8	3	III–VII.	87 45 3.8	12.4	12.0	9.0	12.3	4.4	8.98	33.018	. .	32.879
	47	Anon. 18^h 15^m 38^s	8.3	3	I, III, V.	97 30 3.6	13.8	13.1	9.4	12.7	4.8	9.57	30.395	. .	30.260
	48	Anon. 18^h 16^m 4^s	8.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	34.469	. .	34.350
	49	Nadir	. .	.	. .	200 0 1.4	11.2	11.9	8.0	10.7	5.4	8.10	30.281	. .	. .
9	50	Lacaille 6318	7.5	3	V, VII, IX.	93 15 1.9	9.2	9.1	6.1	9.7	3.4	6.57	25.149	. .	25.027
	51	Lacaille 6359	7.0	3	V, VII, IX.	96 30 2.0	11.9	10.6	7.9	12.6	3.9	8.15	25.919	. .	25.799
	52	O. Arg. S. 14665	8.3	3	III–VII.	83 35 1.3	10.2	9.8	5.4	10.8	3.7	6.87	36.293	. .	36.153
	53	Anon. 15^h 31^m 45^s	. .	2	VII, IX.	94 35 3.8	12.5	12.3	8.0	13.4	5.4	9.23	30.108	. .	29.998
	54	B. A. C. 5220	. .	3	V, VII, IX.	82 19 59.0	67.4	67.0	62.0	68.8	59.9	64.02	34.528	. .	34.401
	55	B. A. C. 5333	8.3	3	III–VII.	78 10 0.2	10.5	10.1	6.1	13.1	3.7	7.28	27.345	. .	27.204
	56	B. A. C. 5364	7.3	3	III–VII.	85 25 0.9	9.3	10.1	6.7	11.1	3.1	6.87	29.457	. .	29.318
	57	Radcliffe 3588	7.0	3	III–VII.	9 45 2.9	12.2	12.9	8.0	14.2	4.2	9.07	27.704	. .	27.549
	58	B. A. C. 5653	. .	3	III–VII.	90 29 59.9	69.2	68.6	63.9	69.4	60.0	65.17	29.175	. .	29.037
	59	30 Ophiuchi	6.0	3	III–VII.	62 55 0.2	8.4	7.8	3.1	9.7	2.0	5.20	31.811	. .	31.668
	60	ρ Herculis, (1st *)	. .	2	II, VIII.	21 40 3.9	12.4	11.4	8.0	15.2	6.4	9.55	35.382	. .	35.216
	61	ρ Herculis, (2d *)	. .	2	IV, VI.	" " "	"	"	"	"	"	"	35.428	. .	35.281
	62	B. A. C. 5960	8.0	2	I, IX.	91 0 0.8	9.4	8.9	5.0	10.3	1.5	5.98	33.345	. .	33.232
	63	Anon. 17^h 31^m 43^s	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.910	. .	26.768
	64	B. A. C. 5964	8.0	1	IX.	" " "	"	"	"	"	"	"	31.428	. .	31.329
	65	Weisse XVII, 905	8.0	3	III–VII.	66 45 1.6	9.3	10.3	5.8	10.7	3.0	6.78	29.954	—0.144	29.811

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.034	78.3	76.4	+ 1 21.1	N. 4 13 34.2	3.1	+ 43 7 16.6	− 12.3	Y.	
2	. .	. .	. .	− 2 8.0	S. 11 37 58.5	11.4	+ 27 15 29.3	− 9.6	Y.	Faint.
3	30.044	78.1	76.0	+ 1 53.2	49 53 16.1	1 5.7	− 11 0 42.5	− 0.2	Y.	Whole revolution from July 16.
4	. .	. .	. .	+ 0 2.7	71 50 8.4	2 47.2	− 32 59 16.3	+ 4.1	Y.	
5	. .	. .	. .	− 3 52.9	S. 71 46 12.8	2 46.5	− 32 55 20.1	+ 4.2	Y.	
6	30.052	77.7	74.5	+ 1 16.4	N. 10 13 32.7	10.0	+ 49 7 22.0	− 11.6	Y.	
7	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
8	30.044	77.3	74.5	− 1 9.2	S. 5 38 55.9	5.5	+ 33 14 37.8	− 9.5	Y.	
9	. .	. .	. .	− 2 55.4	S. 70 37 10.6	2 36.4	− 31 46 7.8	− 1.0	Y.	
10	. .	. .	. .	− 1 10.6	N. 9 46 5.2	9.6	+ 48 39 54.0	− 9.3	Y.	
11	30.038	77.0	74.2	− 1 39.6	S. 70 13 28.2	2 33.2	− 31 22 22.1	− 1.7	Y.	
12	. .	. .	. .	− 4 38.5	75 40 32.7	3 33.8	− 36 50 27.2	− 1.6	Y.	
13	. .	. .	. .	+ 0 8.2	75 45 19.4	3 35.4	− 36 55 15.6	− 1.6	Y.	
14	. .	. .	. .	− 0 48.0	62 14 16.4	1 45.2	− 23 22 22.4	− 3.6	Y.	
15	. .	. .	. .	+ 1 6.1	54 1 15.6	1 16.5	− 15 8 52.8	− 4.7	Y.	
16	. .	. .	. .	+ 0 56.2	54 1 5.7	1 16.5	− 15 8 42.9	− 4.7	Y.	
17	. .	. .	. .	− 2 54.0	53 32 12.7	1 15.2	− 14 39 48.6	− 5.0	Y.	
18	30.036	76.8	73.5	− 1 44.3	64 28 25.3	1 55.9	− 25 36 42.0	− 4.9	Y.	
19	29.976	77.5	75.2	+ 0 30.5	S. 13 30 42.0	13.3	+ 25 22 44.0	− 8.9	Y.	
20	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	Y.	
21	. .	. .	. .	− 1 12.1	N. 9 16 3.0	9.0	+ 48 9 51.3	− 14.3	Y.	
22	29.924	77.8	73.6	− 1 15.8	N. 9 16 6.6	9.0	+ 48 9 54.9	− 14.3	Y.	
23	. .	. .	72.7	+ 0 2.2	S. 78 15 9.0	4 19.8	− 39 25 49.6	+ 8.9	Y.	
24	. .	. .	. .	− 3 4.5	63 32 1.5	1 51.1	− 24 40 13.4	+ 4.5	Y.	
25	. .	. .	. .	− 3 13.2	63 31 52.8	1 51.1	− 24 40 4.6	+ 4.5	Y.	
26	29.932	77.3	72.3	− 0 26.8	63 34 39.2	1 51.0	− 24 42 51.0	+ 4.5	Y.	
27	. .	. .	. .	+ 0 33.9	64 25 42.7	1 55.6	− 25 33 59.0	+ 4.2	Y.	
28	. .	. .	. .	− 1 25.9	64 23 42.8	1 55.5	− 25 31 59.0	+ 4.2	Y.	
29	29.936	77.0	71.6	− 2 46.1	60 42 18.2	1 38.8	− 21 50 17.8	+ 2.7	Y.	
30	. .	. .	. .	− 0 38.1	60 34 26.8	1 38.4	− 21 42 25.9	+ 2.2	Y.	
31	29.946	76.7	71.1	− 1 39.2	64 8 28.7	1 54.4	− 25 16 43.8	+ 2.4	Y.	
32	. .	. .	. .	− 0 12.0	71 24 55.0	2 44.1	− 32 33 59.8	+ 2.8	Y.	
33	. .	. .	. .	− 0 50.0	71 24 17.0	2 44.0	− 32 33 21.8	+ 2.9	Y.	Faint.
34	. .	. .	. .	− 2 30.7	60 57 37.9	1 40.1	− 22 5 38.8	+ 0.1	Y.	
35	29.954	76.0	70.3	+ 1 18.2	75 56 26.0	3 38.7	− 37 6 25.5	+ 2.4	Y.	
36	. .	. .	. .	− 2 21.9	75 52 45.9	3 37.8	− 37 2 44.5	+ 2.2	Y.	
37	29.956	75.6	69.8	+ 0 43.2	76 50 52.2	3 54.0	− 38 1 7.0	+ 1.6	Y.	
38	. .	. .	. .	+ 0 43.7	43 50 50.9	53.6	− 4 58 5.3	− 4.4	Y.	
39	. .	. .	. .	+ 1 0.1	77 21 4.6	4 3.4	− 38 31 28.8	+ 0.4	Y.	
40	. .	. .	69.5	− 0 9.5	77 19 55.0	4 3.0	− 38 30 18.8	+ 0.4	Y.	
41	29.956	75.2	69.3	− 1 18.1	70 3 47.9	2 32.8	− 31 12 41.4	− 1.2	Y.	
42	. .	. .	. .	+ 3 22.3	70 8 28.3	2 33.4	− 31 17 22.5	− 1.7	Y.	
43	. .	. .	. .	− 0 16.7	70 4 49.3	2 33.0	− 31 13 43.0	− 1.8	Y.	
44	29.962	75.0	69.3	+ 1 33.3	80 16 41.1	5 14.1	− 41 28 16.0	− 0.9	Y.	
45	. .	. .	. .	− 0 0.8	60 20 4.6	1 37.9	− 21 28 3.2	− 3.6	Y.	
46	. .	. .	. .	− 1 30.2	67 43 38.8	2 15.7	− 28 52 15.2	− 3.3	Y.	
47	. .	. .	. .	− 0 8.2	77 30 1.4	4 6.6	− 38 40 28.7	− 3.0	Y.	
48	. .	. .	69.0	− 2 16.4	77 27 53.2	4 5.9	− 38 38 19.8	− 3.1	Y.	
49	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
50	30.156	76.7	72.9	+ 2 35.6	73 17 42.1	3 3.9	− 34 27 6.8	+ 7.9	Y.	
51	. .	. .	. .	+ 2 11.4	76 32 19.6	3 48.9	− 37 42 29.3	+ 8.5	Y.	
52	. .	. .	. .	− 3 13.0	63 31 53.9	1 51.9	− 24 40 6.5	+ 4.5	Y.	
53	30.160	76.5	72.4	+ 0 0.1	74 35 9.3	3 19.9	− 35 44 49.9	+ 7.2	Y.	
54	. .	. .	. .	− 2 18.0	62 17 46.0	1 46.3	− 23 25 53.1	+ 3.5	Y.	
55	. .	. .	. .	+ 1 27.5	58 11 34.8	1 30.2	− 19 19 25.7	+ 1.6	Y.	
56	30.162	76.1	71.4	+ 0 21.3	S. 65 25 28.2	2 2.0	− 26 33 50.9	+ 3.3	Y.	
57	30.166	75.8	71.4	+ 1 16.7	N. 10 13 34.2	10.1	+ 49 7 23.6	− 12.7	Y.	
58	. .	. .	. .	+ 0 30.2	S. 70 30 35.3	2 37.2	− 31 39 33.3	+ 2.1	Y.	
59	. .	. .	. .	− 0 52.2	42 54 13.0	52.2	− 4 1 25.9	− 3.9	Y.	
60	. .	. .	. .	− 2 43.5	1 37 26.0	1.6	+ 37 16 11.6	− 10.1	Y.	Unsteady.
61	30.160	75.1	70.0	− 2 45.6	1 37 24.0	1.6	+ 37 16 13.7	− 10.1	Y.	
62	. .	. .	. .	− 1 41.3	70 58 24.7	2 41.5	− 32 7 26.9	− 0.8	Y.	
63	. .	. .	. .	+ 1 41.1	71 1 47.1	2 42.0	− 32 10 49.9	− 0.8	Y.	
64	. .	. .	. .	− 0 41.6	70 59 24.4	2 41.7	− 32 8 26.8	− 0.8	Y.	
65	. .	. .	. .	+ 0 5.9	S. 46 55 12.7	59.8	− 7 52 33.2	− 4.7	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
July 9	1	B. A. C. 6103	6.0	3	III–VII.	94 45 3.8	13.1	12.8	10.2	13.7	5.2	9.80	31.713	−0.144	31.576
	2	Anon. $18^h 3^m 9^s$	7.2	3	III–VII.	82 0 0.2	8.8	8.2	3.8	9.4	0.7	5.18	29.200	. .	29.060
	3	Nadir	. .	.	. .	200 0 1.5	10.1	10.1	7.3	10.9	5.1	7.50	30.261	. .	. .
11	4	B. A. C. 5357	7.0	3	IV–VI.	98 35 4.0	12.7	11.0	7.0	13.8	5.4	8.98	27.958	−0.172	27.788
	5	19 Scorpii	5.5	3	IV–VI.	82 45 0.2	6.9	7.1	2.9	8.2	0.9	4.37	33.894	. .	33.723
	6	Anon. $16^h 34^m 10^s$	. .	3	III–VII.	98 5 0.0	9.4	8.0	2.2	9.8	1.8	5.20	30.448	. .	30.284
	7	O. Arg. S. 15923.	7.5	3	III–VII.	86 5 1.0	9.9	11.3	6.1	12.3	4.0	7.43	28.316	. .	28.149
	8	O. Arg. S. 16076	8.0	3	V, VII, IX.	78 0 4.4	13.7	14.1	8.9	16.1	7.8	10.83	34.597	. .	34.440
	9	Lacaille 7133.	6.5	3	III–VII.	99 39 58.2	66.7	65.7	59.4	66.2	57.8	62.33	30.811	. .	30.647
	10	O. Arg. S. 16586.	8.2	3	III–VII.	81 25 2.0	10.0	9.3	4.2	10.3	2.8	6.43	28.617	. .	28.449
	11	O. Arg. S. 16833.	8.0	2	I–IX.	74 45 3.1	12.1	12.1	7.1	13.8	5.7	8.98	24.015	. .	23.857
	12	O. Arg. S. 16832.	9.0	1	V.	" " "	"	"	"	"	"	"	26.904	. .	26.732
	13	O. Arg. S. 16857.	8.0	1	IX.	" " "	"	"	"	"	"	"	26.861	. .	26.718
	14	Anon. $17^h 33^m 57^s$	7.9	3	III–VII.	93 4 59.4	68.7	67.6	62.9	67.2	60.9	64.45	28.971	. .	28.805
	15	Anon. $17^h 43^m 11^s$	7.5	3	III–VII.	90 10 2.2	9.6	9.8	4.3	10.8	2.0	6.45	23.687	. .	23.521
	16	Lacaille 7520	7.0	3	III–VII.	98 4 59.5	68.2	68.1	61.9	69.2	60.0	64.48	33.464	. .	33.300
	17	Lacaille 7551	8.0	3	IV–VI.	95 25 3.9	11.8	11.8	7.0	12.7	5.2	8.73	30.173	. .	30.003
	18	O. Arg. S. 17817.	8.0	3	III–VII.	79 55 1.6	10.8	10.9	5.4	11.6	4.1	7.40	34.422	. .	34.254
	19	Anon. $18^h 6^m 5^s$	9.2	2	VII, IX.	" " "	"	"	"	"	"	"	25.090	. .	24.942
	20	Nadir	. .	.	. .	199 59 56.2	63.4	64.8	59.7	65.7	59.8	61.60	30.098	. .	. .
13	21	O. Arg. S. 14648.	7.0	3	III–VII.	83 30 2.8	9.0	10.0	3.0	11.2	3.7	6.62	26.384	−0.160	26.228
	22	O. Arg. S. 14665.	7.5	3	IV–VI.	" " "	"	"	"	"	"	"	26.648	. .	26.489
	23	Anon. $15^h 31^m 39^s$	7.5	3	III–VII.	94 35 0.2	6.9	8.4	2.2	9.7	2.2	4.93	29.852	. .	28.699
	24	O. Arg. S. 15023.	7.0	3	III–VII.	84 24 59.4	66.8	68.7	61.3	70.5	62.0	64.78	30.511	. .	30.356
	25	B. A. C. 5333	7.0	3	III–VII.	78 10 3.1	10.3	11.5	4.9	13.7	5.1	8.10	27.332	. .	27.175
	26	B. A. C. 5364	6.5	3	III–VII.	85 25 1.3	8.1	10.1	4.4	11.6	3.8	6.55	29.399	. .	29.244
	27	O. Arg. S. 15782.	8.7	3	III–VII.	88 30 0.0	5.4	7.0	1.9	8.9	1.0	4.03	28.042	. .	27.887
	28	B. A. C. 5607	7.0	3	III–VII.	87 30 0.7	6.7	7.9	2.2	9.6	1.9	4.83	35.439	. .	35.284
	29	Anon. $16^h 44^m 30^s$	8.2	3	III–VII.	64 50 2.7	7.3	9.3	3.7	10.4	3.0	6.07	30.773	. .	30.614
	30	Anon. $16^h 52^m 24^s$	9.5	1	IX.	96 0 1.7	10.3	10.3	3.7	11.4	4.0	6.90	33.908	. .	33.800
	31	Lacaille 7133.	7.2	3	IV–VI.	99 40 1.9	9.7	9.2	3.5	9.2	2.0	5.92	30.838	. .	30.681
	32	Anon. $17^h 13^m 55^s$	7.8	3	IV–VI.	94 5 1.4	7.9	8.9	3.6	10.6	1.5	5.65	29.606	. .	29.448
	33	Anon. $17^h 15^m 57^s$	9.0	1	V.	" " "	"	"	"	"	"	"	28.152	. .	27.992
	34	Anon. $17^h 29^m 6^s$	8.7	2	III, V.	96 10 4.7	13.1	11.9	8.9	14.8	6.9	10.05	31.583	. .	31.424
	35	O. Arg. S. 17394.	8.0	3	III–VII.	83 55 0.2	8.7	8.9	2.7	9.4	1.9	5.30	29.483	. .	29.328
	36	O. Arg. S. 17449.	7.7	3	III–VII.	" " "	"	"	"	"	"	"	28.111	. .	27.956
	37	Lacaille 7580.	5.5	3	III–VII.	95 30 1.1	8.8	9.1	4.0	9.4	1.9	5.72	27.687	. .	27.534
	38	O. Arg. S. 17871.	6.0	3	IV–VI.	80 40 2.3	10.4	10.8	4.8	12.1	3.7	7.35	36.751	. .	36.592
	39	B. A. C. 6279	5.7	3	III–VII.	73 30 2.9	10.3	11.6	7.2	12.7	4.8	8.25	28.372	. .	28.214
	40	B. A. C. 6284	5.2	2	VII, IX.	" " "	"	"	"	"	"	"	26.211	. .	26.071
	41	Nadir	. .	.	. .	200 0 0.0	7.7	8.6	3.5	8.7	3.4	5.32	30.208	. .	. .
14	42	ζ^4 Libræ	. .	3	III–VII.	75 15 2.0	8.6	10.2	4.8	11.2	3.1	6.65	26.583	−0.162	26.424
	43	11 Serpentis	. .	2	VII, IX.	59 35 1.9	8.8	9.8	4.0	12.7	6.2	7.23	25.669	. .	25.519
	44	Nadir	. .	.	. .	200 0 0.9	7.0	8.3	2.1	10.1	5.0	5.57	30.216	. .	. .
	45	Anon. $15^h 57^m 9^s$	9.0	1	V.	348 55 4.2	11.2	15.2	6.8	15.1	5.8	9.72	33.353	. .	33.191
	46	Anon. $16^h 5^m 28^s$	8.5	1	V.	348 20 4.5	10.2	15.2	5.3	14.2	6.4	9.30	35.544	. .	35.382
	47	B. A. C. 5576	. .	3	III–VII.	87 45 1.7	7.8	8.1	2.2	10.2	2.7	5.45	33.163	. .	33.006
	48	Lalande 30545	9.0	3	IV–VI.	356 20 3.3	11.0	13.8	6.3	14.2	6.8	9.23	31.470	. .	31.302
	49	O. Arg. N. 16481	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	29.453	. .	29.285
	50	B. A. C. 5721.	7.3	3	III–VII.	90 55 4.8	11.0	12.6	6.0	12.2	6.0	8.77	30.447	. .	30.291
	51	Anon. $17^h 0^m 34^s$	5.5	3	III–VII.	89 5 3.9	10.4	10.8	5.8	11.8	5.5	8.03	30.436	. .	30.280
	52	Anon. $17^h 5^m 42^s$	6.0	2	VII, IX.	98 25 4.1	10.8	10.4	5.2	12.8	5.2	8.08	28.582	. .	28.458
	53	Dorpat 2147	9.5	3	III–VII.	65 10 3.1	8.4	10.0	3.2	11.2	11.9	6.80	30.096	. .	29.935
	54	O. Arg. S. 16842.	. .	1	V.	74 50 2.1	9.7	11.3	6.0	12.6	4.7	7.73	34.412	. .	34.250
	58	O. Arg. S. 16857.	. .	1	IX.	" " "	"	"	"	"	"	"	36.424	. .	36.288
	56	O. Arg. S. 17133.	. .	3	III–VII.	80 30 3.2	12.1	12.8	7.2	13.5	5.4	9.03	26.210	. .	26.052
	57	Lacaille 7459.	7.0	3	III–VII.	92 30 1.9	9.4	9.8	4.8	10.2	3.0	6.52	29.321	. .	29.165
	58	Lacaille 7499.	6.0	3	V, VI, VII.	97 54 58.9	67.6	68.8	62.1	68.3	60.4	64.35	31.731	. .	31.580
	59	Lacaille 7504.	5.5	2	I, IX.	" " "	"	"	"	"	"	"	27.607	. .	27.485
	60	B. A. C. 6128.	. .	3	III–VII.	103 45 2.4	9.8	10.6	5.4	11.0	3.8	7.17	32.990	. .	32.838
	61	O. Arg. S. 17871.	6.0	3	V, VII, IX.	80 40 0.9	8.9	9.6	3.7	10.6	3.1	6.13	36.728	. .	36.586
15	62	c^2 Ophiuchi	5.0	3	III–VII.	82 45 0.3	5.8	6.9	1.0	8.6	1.2	3.97	33.316	−0.178	33.142
	63	B. A. C. 5960	7.5	3	IV–VI.	91 0 2.8	9.4	8.3	2.4	10.8	3.2	6.15	33.273	. .	33.097
	64	B. A. C. 5964.	8.0	2	V, VII.	" " "	"	"	"	"	"	"	31.377	. .	31.207
	65	Lacaille 7448.	7.0	2	V, VII.	94 10 2.1	7.1	8.7	2.6	10.8	4.4	5.95	29.733	−0.178	29.564

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.160	74.5	69.2	− 0 49.4	S. 74 44 20.4	3 23.2	− 35 54 4.3	− 1.9	Y	
2	. .	. .	69.0	+ 0 29.4	62 0 34.6	1 45.6	− 23 8 41.0	− 3.8	Y	
3	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y	
4	29.990	78.2	75.2	+ 1 9.2	78 36 18.2	4 27.0	− 39 47 6.0	+ 6.6	Y.	
5	. .	. .	. .	− 1 56.7	62 43 7.6	1 47.0	− 23 51 15.4	+ 2.2	Y.	
6	. .	. .	. .	− 0 8.9	78 4 56.3	4 15.9	− 39 15 32.9	+ 4.4	Y.	
7	29.996	77.9	74.6	+ 0 57.9	66 6 5.4	2 4.4	− 27 14 30.5	+ 1.6	Y.	
8	. .	. .	. .	− 2 19.2	57 57 51.6	1 28.4	− 19 5 40.8	− 0.6	Y.	
9	29.998	77.8	74.3	− 0 20.3	79 39 42.0	4 53.8	− 40 50 56.6	+ 3.0	Y.	
10	. .	. .	. .	+ 0 48.6	61 25 55.0	1 41.5	− 22 33 57.2	− 1.1	Y.	
11	. .	. .	. .	+ 3 12.1	54 48 21.1	1 18.5	− 15 56 0.3	− 2.7	Y.	
12	. .	. .	. .	+ 1 42.2	54 46 51.2	1 18.4	− 15 54 30.4	− 2.7	Y.	
13	29.986	77.7	74.3	+ 1 42.7	54 46 51.7	1 18.4	− 15 54 30.8	− 2.8	Y.	
14	. .	. .	. .	+ 0 37.4	73 5 41.9	3 0.2	− 34 15 2.8	− 0.5	Y.	
15	. .	. .	. .	+ 3 22.6	70 13 29.0	2 32.9	− 31 22 22.7	− 1.5	Y.	
16	. .	. .	. .	− 1 43.4	78 3 21.0	4 15.5	− 39 13 57.3	− 1.0	Y.	
17	. .	. .	. .	− 0 0.1	75 25 8.6	3 29.6	− 36 34 59.0	− 1.7	Y.	
18	. .	. .	. .	− 2 13.4	59 52 54.0	1 35.4	− 21 0 50.1	− 4.0	Y.	
19	29.986	77.4	74.1	+ 2 38.2	59 57 45.6	1 35.7	− 21 5 42.0	− 4.0	Y.	
20	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
21	. .	. .	. .	+ 1 58.0	63 32 4.6	1 50.3	− 24 40 15.7	+ 4.7	Y.	
22	. .	. .	. .	+ 1 49.9	63 31 56.5	1 50.3	− 24 40 7.5	+ 4.6	Y.	
23	29.955	80.5	76.5	+ 0 40.8	74 35 45.7	3 17.1	− 35 45 23.6	+ 7.8	Y.	
24	. .	. .	. .	− 0 11.2	64 24 53.6	1 54.8	− 25 33 9.2	+ 3.9	Y.	
25	. .	. .	. .	+ 1 28.4	58 11 36.5	1 28.9	− 19 19 26.1	+ 1.7	Y.	
26	29.950	80.2	75.3	+ 0 23.7	65 25 30.2	2 0.2	− 26 33 51.2	+ 3.5	Y.	
27	. .	. .	. .	+ 1 6.1	68 31 10.2	2 19.6	− 29 39 50.6	+ 2.8	Y.	
28	29.952	79.2	74.3	− 2 45.7	67 27 19.2	2 12.5	− 28 35 52.4	+ 2.1	Y.	
29	. .	. .	. .	− 0 19.2	44 49 46.8	55.0	− 5 57 2.6	− 3.4	Y.	
30	. .	. .	. .	− 1 59.1	75 58 7.8	3 37.5	− 37 8 6.0	+ 3.0	Y.	Faint.
31	29.948	78.7	74.3	− 0 21.34	79 39 44.6	4 53.3	− 40 50 58.7	+ 3.3	Y.	
32	. .	. .	. .	+ 0 17.3	74 5 22.9	3 11.5	− 35 14 55.2	+ 1.2	Y.	
33	. .	. .	. .	+ 1 2.8	74 6 8.5	1 31.6	− 35 14 0.9	+ 1.1	Y.	
34	29.950	78.5	74.3	− 0 44.6	76 9 25.4	3 40.4	− 37 19 26.6	+ 0.6	Y.	
35	. .	. .	. .	+ 0 21.0	63 55 26.3	1 52.7	− 25 3 39.8	− 2.6	Y.	
36	29.954	78.2	73.9	+ 1 4.0	63 56 9.3	1 52.7	− 25 4 22.8	− 2.7	Y.	Micrometer reading increased by one revolution. See June 20.
37	. .	. .	. .	+ 1 17.2	75 31 22.9	3 31.0	− 36 41 14.7	− 1.7	Y.	
38	. .	. .	. .	− 3 26.8	60 36 40.5	1 38.2	− 21 44 39.5	− 3.9	Y.	
39	. .	. .	. .	+ 0 55.9	53 31 4.2	1 14.9	− 14 38 39.8	− 5.4	Y.	
40	29.960	77.8	73.4	+ 2 2.9	53 32 11.2	1 15.0	− 14 39 46.9	− 5.4	Y.	
41	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
42	. .	. .	. .	+ 1 51.9	55 16 58.6	1 19.1	− 16 24 38.4	+ 2.2	Y.	
43	29.908	81.0	78.3	+ 2 20.2	S. 39 37 27.4	45.4	− 0 44 33.6	− 2.6	Y.	
44	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
45	29.914	80.8	77.2	− 1 40.0	N. 31 6 30.3	33.2	+ 70 0 42.7	− 16.4	Y.	
46	. .	. .	. .	− 2 48.8	N. 31 42 39.4	34.0	+ 70 36 52.7	− 16.2	Y.	
47	. .	. .	. .	− 1 34.2	S. 67 43 31.3	2 13.6	− 28 52 5.6	+ 2.7	Y.	
48	. .	. .	. .	− 0 40.8	N. 23 40 31.6	24.2	+ 62 34 35.0	− 14.7	Y.	
49	29.916	80.2	76.4	+ 0 22.4	N. 23 39 28.4	24.2	+ 62 33 31.8	− 14.7	Y.	
50	. .	. .	. .	− 0 9.1	S. 70 54 59.6	2 37.8	− 32 3 58.2	+ 2.0	Y.	
51	29.914	80.0	76.2	− 0 8.8	69 4 59.2	2 23.1	− 30 13 43.1	+ 1.2	Y.	
52	. .	. .	. .	+ 0 48.3	78 25 56.4	4 22.0	− 39 36 39.1	+ 2.7	Y.	
53	. .	. .	. .	+ 0 2.0	45 10 8.8	55.4	− 6 17 25.0	− 4.2	Y.	
54	. .	. .	. .	− 2 13.2	54 47 54.5	1 18.0	− 15 55 33.2	− 2.7	Y.	Faint.
55	29.916	79.8	76.0	− 3 17.2	54 46 50.5	1 18.0	− 15 54 29.2	− 2.8	Y.	Faint, cloudy.
56	. .	. .	. .	+ 2 3.5	60 32 12.6	1 37.3	− 21 40 10.6	− 1.6	Y.	
57	. .	. .	. .	+ 0 26.1	72 30 32.6	2 53.0	− 39 6 55.6	+ 0.8	Y.	
58	29.916	79.5	75.6	− 0 49.5	77 54 14.8	4 11.0	− 33 39 46.4	+ 2.0	Y.	
59	. .	. .	. .	+ 1 18.7	77 56 23.1	4 11.8	− 39 4 46.6	+ 2.1	Y.	
60	29.912	79.3	75.2	− 1 29.0	83 43 38.2	7 41.4	− 44 57 40.4	+ 3.5	Y.	
61	. .	. .	. .	− 3 26.6	60 36 39.5	1 37.7	− 21 44 38.0	− 1.4	Y.	
62	30.058	82.8	80.7	− 1 38.5	62 43 25.5	1 46.1	− 23 51 32.3	− 1.4	Y.	
63	. .	. .	. .	− 1 37.1	70 58 29.1	2 37.7	− 32 7 27.5	− 0.2	Y.	
64	. .	. .	. .	− 0 37.8	70 59 28.3	2 37.8	− 32 8 26.9	− 0.3	Y.	
65	. .	. .	. .	+ 0 13.7	S. 74 10 19.6	3 10.9	− 35 19 51.3	− 0.3	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
July 15	1	Anon. $17^h 42^m 26^s$	. .	3	IV–VI.	94 10 2.1	7.1	8.7	2.6	10.8	4.4	5.95	32.757	−0.178	32.581
	2	Anon. $17^h 43^m 10^s$	. .	1	V.	" " "	"	"	"	"	"	"	30.312	. .	30.134
	3	Lacaille 7520.	. .	3	III–VII.	98 5 1.2	8.2	7.2	0.8	10.2	3.2	5.13	33.426	. .	33.256
	4	Anon. $18^h 0^m 0^s$	. .	3	III–VII.	81 45 2.5	8.8	9.9	4.1	11.2	4.2	6.78	29.579	. .	29.405
	5	Nadir	. .	.	. .	199 59 58.4	64.3	65.6	59.6	67.2	63.0	63.02	30.149	. .	. .
16	6	Lacaille 6796.	. .	3	IV–VI.	91 50 2.9	9.7	10.8	3.9	12.5	6.9	7.78	30.049	−0.184	29.867
	7	Lacaille 6797.	. .	3	I, IX.	" " "	"	"	"	"	"	"	37.578	. .	37.426
	8	Radcliffe 3589	5.5	3	IV–VI.	339 40 0.0	5.3	10.5	0.1	11.4	3.0	5.05	30.620	. .	30.420
	9	O. Arg. S. 16046.	7.5	3	III, IV, V.	89 4 59.7	65.4	66.0	58.8	67.2	62.5	63.27	32.477	. .	32.295
	10	O. Arg. S. 16060.	8.6	2	V, IX.	" " "	"	"	"	"	"	"	34.942	. .	34.780
	11	Anon. $16^h 55^m 14^s$	8.5	3	III–VII.	88 49 58.4	64.0	63.9	57.0	66.8	61.9	62.00	33.757	. .	33.579
	12	Anon. $16^h 5^m 29^s$	9.3	2	VII, IX.	94 0 1.3	6.4	6.4	0.0	9.4	2.4	4.32	31.976	. .	31.826
	13	Anon. $17^h 13^m 3^s$	9.2	3	III–VII.	65 10 5.2	8.5	10.2	3.3	13.3	6.8	7.88	30.523	. .	30.340
	14	Anon. $17^h 26^m 0^s$	8.8	3	III–VII.	91 20 3.3	9.1	9.8	2.8	11.7	5.1	6.97	32.258	. .	32.080
	15	B. A. C. 5960	. .	1	IX.	91 0 6.1	11.8	11.9	5.0	14.7	7.7	9.53	33.282	. .	33.144
	16	Anon. $17^h 32^m 13^s$	. .	1	V.	" " "	"	"	"	"	"	"	34.548	. .	34.364
	17	Anon. $17^h 45^m 44^s$	7.2	3	IV–VI.	93 40 0.2	6.8	6.7	0.8	10.2	2.9	4.60	27.646	. .	27.464
	18	Anon. $17^h 46^m 8^s$	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	29.132	. .	28.982
	19	Lacaille 7546.	6.5	3	I, III, V.	96 20 2.8	8.3	10.2	3.3	12.8	5.0	7.07	33.391	. .	33.223
	20	Anon. $17^h 57^m 23^s$	8.0	2	IV, V.	" " "	"	"	"	"	"	"	30.413	. .	30.229
	21	Anon. $17^h 57^m 26^s$	8.2	1	IX.	" " "	"	"	"	"	"	"	37.538	. .	37.406
	22	Anon. $18^h 8^m 12^s$	7.5	3	V, VII, IX.	89 20 3.3	9.4	9.8	2.0	11.8	5.9	7.03	34.504	. .	34.340
	23	Nadir	. .	.	. .	199 59 55.3	61.3	63.6	56.0	65.2	61.2	60.43	30.072	. .	. .
18	24	19 Ophiuchi	. .	2	IV, VI.	56 15 0.0	4.9	7.1	1.0	8.8	3.6	4.33	30.666	−0.174	30.490
	25	B. A. C. 5756	. .	5	I–IX.	88 49 59.2	66.2	67.2	60.1	68.2	61.8	63.78	31.323	. .	31.163
	26	Anon. $18^h 7^m 40^s$	8.0	1	IX.	77 55 3.6	11.8	13.8	7.5	14.7	6.3	9.62	32.627	. .	32.485
	27	Nadir	. .	.	. .	199 59 56.7	61.5	64.9	58.0	64.7	59.2	60.83	30.074	. .	. .
19	28	B. A. C. 5211	7.0	3	V, VII, IX.	84 25 1.2	6.2	9.2	0.9	10.4	3.1	5.17	26.967	−0.129	26.856
	29	π Scorpii	5.0	3	III–VII.	84 35 1.8	8.2	11.2	3.2	11.3	3.8	6.58	28.343	. .	28.219
	30	O. Arg. N. 15864	8.3	1	V.	348 49 58.7	65.1	69.7	58.9	69.0	58.7	63.35	32.508	. .	32.379
	31	O. Arg. N. 15876	8.0	1	V.	" " "	"	"	"	"	"	"	34.892	. .	34.763
	32	Nadir	. .	.	. .	199 59 59.4	64.1	67.4	59.5	67.2	62.0	63.27	30.108	. .	. .
	33	B. A. C. 5600	6.0	2	V, VII.	86 4 59.5	64.2	68.0	60.5	68.8	59.8	63.47	31.845	. .	31.724
	34	O. Arg. S. 15896.	7.3	2	VII, IX.	" " "	"	"	"	"	"	"	31.664	. .	31.563
	35	Anon. $16^h 46^m 8^s$	. .	3	V, VII, IX	81 0 2.0	8.1	9.2	1.2	9.7	3.8	5.67	35.378	. .	35.265
	36	Anon. $16^h 55^m 53^s$	9.0	1	V.	83 0 4.7	11.4	13.0	5.2	13.3	5.0	8.77	35.341	. .	35.212
	37	Anon. $16^h 56^m 7^s$	8.0	2	VII, IX.	" " "	"	"	"	"	"	"	33.838	. .	33.735
	38	Anon. $17^h 8^m 9^s$	9.3	3	V, VII, IX.	94 10 3.9	9.6	11.7	5.0	12.2	4.9	7.88	29.677	. .	29.571
	39	O. Arg. S. 16833	. .	2	III, VII.	74 50 2.1	7.3	10.8	4.3	11.1	3.6	6.53	33.556	. .	33.436
	40	O. Arg. S. 16875.	8.3	3	IV–VI.	" " "	"	"	"	"	"	"	39.416	. .	39.288
	41	O. Arg. S. 17114.	9.0	3	III–VII.	78 20 0.7	7.8	9.2	2.0	10.1	1.6	5.23	32.945	. .	32.819
	42	Anon. $17^h 42^m 51^s$	. .	3	III–VII.	87 30 1.0	7.1	8.7	1.1	8.9	1.1	4.65	33.246	. .	33.122
	43	Anon. $17^h 43^m 46^s$	8.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	37.121	. .	37.011
	44	O. Arg. S. 17320.	7.7	3	V, VII, IX.	" " "	"	"	"	"	"	"	28.812	. .	28.702
	45	Anon. $17^h 52^m 30^s$	7.5	3	III–VII.	87 35 0.4	5.3	8.1	0.4	8.4	0.0	3.77	33.301	. .	33.177
	46	Anon. $17^h 59^m 52^s$	9.0	2	I, IX.	81 45 1.6	8.0	10.3	2.1	9.8	1.8	5.60	27.489	. .	27.381
	47	Anon. $18^h 0^m 0^s$	7.5	3	IV–VI.	" " "	"	"	"	"	"	"	29.525	. .	29.397
	48	O. Arg. S. 17927	7.5	3	III–VII.	87 50 0.0	5.4	8.2	1.6	8.3	0.2	3.95	31.106	. .	30.982
21	49	Weisse XVII, 508	9.0	3	III–VII.	46 15 4.7	10.3	12.4	5.4	13.9	6.1	8.80	27.158	−0.173	26.983
	50	Anon. $17^h 40^m 46^s$	5.0	3	III–VII.	90 30 4.8	10.4	12.5	5.4	11.8	3.8	8.12	29.609	. .	29.442
	51	O. Arg. S. 17394.	9.0	3	V, VII, IX.	83 55 2.7	8.9	11.2	4.9	10.8	4.1	7.10	29.475	. .	29.320
	52	O. Arg. S. 17906.	8.0	1	V.	77 55 3.7	10.4	12.4	6.6	12.8	5.0	8.48	32.647	. .	32.474
	53	O. Arg. S. 17928.	8.5	2	IV, IX.	" " "	"	"	"	"	"	"	36.983	. .	36.829
	54	B. A. C. 6279	5.8	3	IV–VI.	73 34 59.2	65.4	68.1	62.7	68.4	60.0	63.97	37.756	. .	37.584
	55	B. A. C. 6284	6.5	3	V, VII, IX.	" " "	"	"	"	"	"	"	35.629	. .	35.469
	56	Weisse XVIII, 793	9.0	3	III–VII.	68 10 0.6	7.9	9.9	3.8	9.6	3.9	5.95	34.411	. .	34.240
	57	Nadir	. .	.	. .	199 59 58.9	64.8	67.9	61.8	67.2	61.8	63.73	30.168	. .	. .
22	58	Nadir	. .	.	. .	199 59 57.4	61.8	65.0	57.4	65.2	61.3	61.35	30.107	−0.189	. .
	59	Anon. $16^h 34^m 16^s$	8.0	3	III–VII.	83 25 2.3	7.4	10.1	2.9	10.3	2.6	5.93	28.752	. .	28.567
	60	Lacaille 7011.	6.5	2	I, IX.	96 15 3.2	10.3	11.4	4.0	12.1	4.1	7.52	35.016	. .	34.864
	61	Anon. $16^h 43^m 34^s$	8.5	3	IV–VI.	" " "	"	"	"	"	"	"	34.246	. .	34.059
	62	Weisse XVI, 1048	9.0	3	III–VII.	68 0 3.7	9.9	12.2	5.1	13.0	7.2	8.52	35.179	. .	34.992
	63	O. Arg. S. 16856.	8.5	3	III–VII.	74 45 2.6	8.9	11.2	3.9	11.2	4.1	6.98	26.766	. .	26.580
	64	Anon. $17^h 29^m 43^s$	8.0	1	V.	79 25 1.9	10.4	12.1	3.4	12.2	5.1	7.52	23.777	−0.189	23.588

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 20.9	S. 74 8 45.0	3 10.6	− 35 18 16.4	− 0.4	Y.	
2	. .	. .	. .	− 0 4.2	74 10 1.7	3 10.9	− 35 19 33.3	− 0.5	Y.	
3	30.056	82.7	80.4	− 1 42.1	78 3 23.1	4 12.9	− 39 13 56.8	− 0.4	Y.	
4	. .	. .	. .	+ 0 18.6	61 45 25.4	1 41.9	− 22 53 28.1	− 3.3	Y.	
5	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
6	. .	. .	. .	+ 0 4.2	71 50 11.9	2 44.4	− 32 59 17.1	+ 4.8	Y.	
7	30.048	85.7	84.0	− 3 53.0	S. 71 46 14.8	2 43.8	− 32 55 19.4	+ 4.7	Y.	
8	30.056	85.4	83.4	− 0 13.2	N. 40 20 8.1	46.4	+ 79 14 33.7	− 15.6	Y.	
9	. .	. .	. .	− 1 11.9	S. 69 3 51.4	2 21.7	− 30 12 33.8	+ 2.3	Y.	
10	. .	. .	. .	− 2 29.8	69 2 33.4	2 21.5	− 30 11 15.7	+ 2.2	Y.	
11	. .	. .	. .	− 1 52.2	68 48 9.8	2 19.8	− 29 56 50.3	+ 1.5	Y.	
12	30.056	85.2	83.0	− 0 57.2	73 59 7.1	3 7.7	− 35 8 35.6	+ 2.1	Y.	
13	. .	. .	. .	− 0 10.7	45 9 57.2	55.0	− 6 17 12.9	− 4.3	Y.	
14	. .	. .	. .	− 1 5.2	71 19 1.8	2 40.2	− 32 28 2.7	+ 0.3	Y.	
15	. .	. .	. .	− 1 38.5	70 58 31.0	2 37.2	− 32 7 28.9	− 0.2	Y.	
16	. .	. .	. .	− 2 16.8	70 57 52.7	2 37.1	− 32 6 50.6	− 0.2	Y.	
17	. .	. .	. .	+ 1 19.4	73 41 24.0	3 4.6	− 34 50 49.4	− 0.6	Y.	
18	30.058	84.5	81.8	+ 0 31.9	73 40 36.5	3 4.5	− 34 50 1.7	− 0.6	Y.	
19	. .	. .	. .	− 1 41.0	76 18 26.0	3 40.5	− 37 28 27.3	− 0.9	Y.	
20	. .	. .	. .	− 0 7.2	76 19 59.9	3 40.9	− 37 30 1.5	− 1.0	Y.	
21	. .	. .	. .	− 3 52.3	76 16 14.7	3 39.9	− 37 26 15.4	− 1.0	Y.	
22	30.058	84.2	81.4	− 2 16.1	69 17 51.0	2 23.9	− 30 26 35.6	− 2.7	Y.	
23	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
24	29.966	84.5	79.7	− 0 15.3	36 34 49.9	40.7	+ 2 18 9.6	− 5.5	Y.	
25	. .	. .	. .	− 0 36.4	68 49 27.3	2 20.7	− 29 58 8.8	− 1.5	Y.	
26	29.958	83.2	78.3	− 1 17.9	57 53 51.7	1 27.4	− 19 1 39.9	− 4.2	Y.	
27	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
28	29.986	86.0	82.8	+ 1 38.4	64 26 43.6	1 53.5	− 25 34 57.8	+ 4.3	Y.	
29	. .	. .	. .	+ 0 55.8	S. 64 36 2.3	1 54.4	− 25 44 17.5	+ 3.9	Y.	
30	. .	. .	. .	− 1 14.6	N. 31 11 11.2	33.1	+ 70 5 23.5	− 17.1	Y.	
31	29.990	85.7	82.0	− 2 29.3	N. 31 12 26.0	33.1	+ 70 6 38.3	− 17.1	Y.	
32	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
33	. .	. .	. .	− 0 54.0	S. 66 4 9.5	2 2.7	− 27 12 32.9	+ 2.1	Y.	
34	29.992	85.0	80.7	− 0 49.0	66 4 14.5	2 2.7	− 27 12 38.0	+ 2.0	Y.	Faint.
35	. .	. .	. .	− 2 45.1	60 57 20.6	1 38.3	− 22 5 19.7	+ 0.3	Y.	
36	. .	. .	. .	− 2 43.4	62 57 25.4	1 46.9	− 24 5 33.0	+ 0.3	Y.	
37	. .	. .	. .	− 1 57.1	62 58 11.7	1 47.0	− 24 6 19.4	+ 0.3	Y.	
38	29.998	84.1	80.4	+ 0 13.4	74 10 21.3	3 10.6	− 35 19 52.6	+ 2.2	Y.	Very faint.
39	. .	. .	. .	− 1 47.7	54 48 18.8	1 17.7	− 15 55 57.2	− 2.7	Y.	
40	. .	. .	. .	− 4 51.5	54 45 15.0	1 17.5	− 15 52 53.3	− 2.8	Y.	
41	. .	. .	. .	− 1 28.3	58 18 36.9	1 28.7	− 19 26 26.4	− 2.7	Y.	
42	. .	. .	. .	− 1 37.8	67 28 26.8	2 11.6	− 28 36 59.1	− 1.3	Y.	
43	. .	. .	. .	− 3 39.9	67 26 24.8	2 11.4	− 28 34 56.9	− 1.4	Y.	
44	. .	. .	79.3	+ 0 40.7	67 30 45.3	2 11.8	− 38 39 17.9	− 1.5	Y.	
45	. .	. .	. .	− 1 39.6	67 33 24.2	2 11.2	− 28 41 57.1	− 1.9	Y.	
46	. .	. .	. .	+ 1 22.0	61 46 27.6	1 42.1	− 22 54 30.4	− 3.2	Y.	
47	. .	. .	. .	+ 0 18.9	61 45 24.5	1 42.0	− 22 53 27.2	− 3.2	Y.	
48	30.000	83.3	78.5	− 0 30.8	67 49 33.2	2 14.1	− 28 58 8.0	− 2.7	Y.	
49	30.056	83.6	78.8	+ 1 34.4	26 16 43.2	27.2	+ 12 36 28.8	− 8.8	Y.	
50	. .	. .	. .	+ 0 17.5	70 30 25.6	2 34.2	− 31 39 20.6	− 0.6	Y.	
51	. .	. .	78.3	+ 0 21.3	63 55 28.4	1 52.1	− 25 3 41.3	− 2.3	Y.	Faint.
52	. .	. .	. .	− 1 17.5	57 53 51.0	1 27.8	− 19 1 39.4	− 4.3	Y.	
53	30.050	82.8	77.8	− 3 34.2	57 51 34.3	1 27.6	− 18 59 22.6	− 4.3	Y.	
54	. .	. .	. .	− 3 59.9	53 31 6.0	1 14.5	− 14 38 41.3	− 5.6	Y.	
55	. .	. .	. .	− 2 51.5	53 32 12.5	1 14.6	− 14 39 47.8	− 5.6	Y.	
56	30.058	82.5	77.6	− 2 13.0	48 7 53.0	1 1.6	− 9 15 15.3	− 6.7	Y.	
57	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
59	30.066	86.0	83.0	+ 0 44.9	63 25 50.8	1 48.8	− 24 34 0.4	+ 1.5	Y.	
60	. .	. .	. .	− 2 32.5	76 12 35.0	3 38.5	− 37 22 34.3	+ 4.3	Y.	
61	. .	. .	. .	− 2 7.2	76 13 0.3	3 38.6	− 37 22 59.7	+ 4.3	Y.	
62	30.076	85.6	82.6	− 2 36.5	47 57 32.0	1 0.6	− 9 4 53.4	− 3.5	Y.	
63	30.070	85.3	82.2	+ 1 47.0	54 46 54.0	1 17.4	− 15 54 32.2	− 2.9	Y.	
64	. .	. .	. .	+ 3 20.5	S. 59 28 28.0	1 32.6	− 20 36 21.4	− 2.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. July 22	1	Anon. $17^h\ 30^m\ 8^s$	9.0	2	VII, IX.	79 25 1.9	10.4	12.1	3.4	12.2	5.1	7.52	26.200	—0.189	26.035
	2	Lacaille 7423.	8.0	3	III–VII.	98 10 1.5	7.1	8.7	1.1	9.3	2.1	4.97	27.576	. .	27.395
	3	Anon. $17^h\ 47^m\ 5^s$	8.0	2	I, IX.	90 50 1.5	6.4	9.2	1.9	8.8	1.1	4.82	31.480	. .	31.321
	4	Anon. $17^h\ 47^m\ 4^s$	8.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	36.520	. .	36.333
	5	O. Arg. S. 17533.	8.8	3	IV–VI.	86 35 3.9	10.4	11.8	7.2	12.3	5.9	8.58	29.968	. .	29.781
	6	O. Arg. S. 17535.	9.0	2	I, IX.	“ “ “	“	“	“	“	“	“	28.505	. .	28.291
	7	Anon. $18^h\ 3^m\ 11^s$	8.3	3	III–VII.	82 14 59.2	64.3	67.5	59.8	67.1	59.1	62.83	31.623	. .	31.437
	8	Anon. $18^h\ 9^m\ 9^s$	9.0	3	V, VII, IX.	77 30 5.5	11.7	14.3	6.9	14.4	6.3	9.85	34.996	. .	34.822
	9	O. Arg. S. 18506, (1st *)	9.2	3	III–VII.	85 30 0.0	7.0	10.1	2.5	10.2	2.3	5.35	32.635	. .	32.471
	10	O. Arg. S. 18506, (2d *)	8.5	2	I, IX.	“ “ “	“	“	“	“	“	“	32.824	. .	32.640
26	11	O. Arg. S. 16875.	9.0	3	III–VII.	74 45 0.8	6.2	8.0	1.0	9.1	1.2	4.38	29.580	—0.175	29.408
	12	B. A. C. 5960.	. .	1	V.	91 0 4.1	11.1	11.8	5.2	11.7	4.8	8.12	33.336	. .	33.161
	13	B. A. C. 5964.	. .	1	V.	“ “ “	“	“	“	“	“	“	31.469	. .	31.294
	14	O. Arg. S. 17275.	8.5	3	III–VII.	76 5 1.2	8.1	10.6	2.2	10.1	1.8	5.67	30.001	. .	29.829
	15	Anon. $17^h\ 51^m\ 57^s$	. .	3	III–VII.	95 50 0.9	6.9	10.0	1.9	9.3	2.7	5.28	35.139	. .	34.971
	16	B. A. C. 6108	6.0	3	V, VII, IX.	84 30 2.9	9.2	12.9	4.9	13.4	5.4	8.12	33.952	. .	33.795
	17	15 Sagittarii	5.0	3	III–VII.	79 40 1.6	7.5	11.1	2.8	10.3	3.1	6.07	34.450	. .	34.279
	18	Nadir	. .	.	. .	199 59 57.4	63.3	66.1	57.9	65.9	60.2	61.80	30.106	. .	. .
30	19	τ Scorpii	4.5	3	III–VII.	86 50 2.9	12.1	13.2	10.3	10.7	3.1	8.72	34.018	—0.146	33.877
	20	Anon. $16^h\ 35^m\ 52^s$	7.0	3	IV–VI.	97 54 59.6	68.7	69.8	65.3	68.2	58.8	65.07	24.266	. .	24.122
	21	Lacaille 6970.	6.7	3	III–VII.	“ “ “	“	“	“	“	“	“	25.293	. .	25.155
	22	B. A. C. 5653.	7.0	3	III–VII.	90 30 3.5	13.1	14.1	9.2	12.2	2.1	9.03	29.311	. .	29.171
	23	B. A. C. 5721.	7.0	3	III–VII.	90 55 0.2	9.2	10.9	5.8	8.6	0.0	5.78	30.488	. .	30.348
	24	Lacaille 7160.	6.0	3	III–VII.	97 30 4.3	12.9	14.2	10.6	12.5	3.3	9.63	32.292	. .	32.154
	25	Anon. $17^h\ 9^m\ 53^s$	. .	3	V, VIII, IX.	345 20 0.0	6.1	11.9	2.8	9.5	58.5	4.80	30.000	. .	29.772
	26	O. Arg. S. 16842.	7.5	1	V.	74 45 3.0	11.7	14.2	10.6	12.2	3.1	9.13	24.868	. .	24.722
	27	O. Arg. S. 16857.	8.5	2	VI, VIII.	“ “ “	“	“	“	“	“	“	26.948	. .	26.815
	28	B. A. C. 5960	9.0	2	VII, IX.	91 0 5.2	15.1	15.3	11.3	13.7	4.4	10.83	33.513	. .	33.398
	29	B. A. C. 6037	8.0	1	V.	93 30 2.9	12.9	12.7	10.2	11.8	2.8	8.88	26.089	. .	25.943
	30	Anon. $17^h\ 45^m\ 37^s$	7.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	26.133	. .	25.989
	31	Dorpat 2444	6.0	3	V, VII, IX.	58 50 0.0	8.8	9.9	5.2	9.9	2.7	6.08	35.056	. .	34.922
	32	Anon. $17^h\ 52^m\ 55^s$	8.5	3	III–VII.	“ “ “	“	“	“	“	“	“	28.927	. .	28.781
	33	ε Telescopii	5.5	3	III, V, IX.	104 45 1.7	11.5	13.4	9.8	9.9	0.7	7.83	34.208	. .	34.086
	34	Nadir	. .	.	. .	199 59 58.8	67.1	69.7	65.1	68.1	59.9	64.78	30.176	. .	. .
Aug. 1	35	B. A. C. 5782.	5.0	3	III–VII.	98 10 4.8	12.3	12.2	7.9	12.7	4.6	9.08	30.669	. .	30.531
	36	Anon. $17^h\ 26^m\ 46^s$	9.0	3	III–VII.	97 20 2.1	11.7	11.4	5.9	11.1	2.4	7.43	30.477	. .	30.339
	37	B. A. C. 5932.	. .	2	VII, IX.	“ “ “	“	“	“	“	“	“	26.424	. .	26.315
	38	Lacaille 7423.	8.0	3	III–VII.	98 10 3.8	11.7	11.7	6.8	12.1	3.0	8.18	27.818	. .	27.680
	39	Anon. $17^h\ 44^m\ 42^s$	7.3	3	III–VII.	95 20 0.0	8.6	9.6	4.9	9.5	59.4	5.33	32.958	. .	32.819
	40	B. A. C. 6051.	5.0	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	36.155	. .	36.032
	41	Weisse XVII, 1174	8.3	3	III–VII.	56 20 2.3	10.2	12.1	8.3	12.3	5.9	8.52	26.643	. .	26.497
	42	Anon. $18^h\ 5^m\ 58^s$	10.0	1	V.	80 0 2.4	11.2	12.0	7.9	11.8	3.1	8.07	36.532	. .	36.386
	43	Anon. $18^h\ 6^m\ 11^s$	9.3	2	VII, IX.	“ “ “	“	“	“	“	“	“	34.618	. .	34.496
	44	Nadir	. .	.	. .	200 0 0.2	9.4	10.7	6.3	9.8	3.6	6.67	30.238	. .	. .
5	45	Anon. $17^h\ 26^m\ 17^s$	8.5	3	III–VII.	90 5 3.3	9.6	11.4	5.8	11.3	3.4	7.47	31.855	—0.125	31.736
	46	Anon. $17^h\ 36^m\ 38^s$	8.5	3	III–VII.	94 0 3.8	10.1	10.4	5.5	11.1	3.2	7.35	33.706	. .	33.588
	47	Anon. $17^h\ 42^m\ 24^s$	7.8	1	V.	94 5 3.2	10.5	11.3	6.8	12.2	4.3	8.05	23.082	. .	22.957
	48	Anon. $17^h\ 42^m\ 24^s$	9.0	2	IV, IX.	“ “ “	“	“	“	“	“	“	24.260	. .	24.159
	49	B. A. C. 6074, (1st *)	7.0	3	III–VII.	89 5 2.8	10.2	10.9	5.3	10.8	4.8	7.47	29.527	. .	29.408
	50	B. A. C. 6074, (2d *)	8.3	2	I, IX.	“ “ “	“	“	“	“	“	“	29.442	. .	29.345
	51	Lalande 33147	7.5	3	III–VII.	80 25 2.8	11.1	11.3	5.8	12.3	4.2	7.92	34.510	. .	34.389
	52	O. Arg. S. 17928.	. .	2	VII, IX.	77 55 3.8	10.7	12.6	6.9	12.7	4.9	8.60	36.947	. .	36.840
	53	Anon. $18^h\ 18^m\ 48^s$	8.0	3	III–VII.	88 25 1.4	9.1	9.9	3.9	9.4	2.8	6.08	28.205	. .	28.085
	54	Nadir	. .	.	. .	200 0 1.8	8.7	10.9	5.4	10.5	4.6	6.98	30.227	. .	. .
6	55	Anon. $17^h\ 26^m\ 17^s$	9.0	1	V.	97 20 3.1	11.9	12.2	6.0	13.1	5.4	8.62	28.188	—0.119	28.069
	56	Anon. $17^h\ 27^m\ 54^s$	8.0	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	30.322	. .	30.228
	57	Anon. $17^h\ 42^m\ 27^s$	9.2	3	III–VII.	81 45 1.7	8.6	9.1	3.1	10.3	3.2	6.00	26.159	. .	26.044
	58	B. A. C. 6074, (1st *)	7.0	3	IV–VI.	89 5 4.2	12.8	11.8	6.2	13.2	7.0	9.20	29.511	. .	29.394
	59	B. A. C. 6074, (2d *)	8.5	2	II, VIII.	“ “ “	“	“	“	“	“	“	29.455	. .	29.353
	60	Lalande 33147	7.5	3	III–VII.	80 25 0.0	6.8	7.2	0.0	8.8	1.2	4.00	34.357	. .	34.242
	61	O. Arg. S. 17928.	. .	1	V.	77 50 3.3	11.3	11.1	5.1	12.3	4.9	8.00	27.336	. .	27.217
	62	Anon. $18^h\ 8^m\ 8^s$	. .	2	III, IX.	“ “ “	“	“	“	“	“	“	32.228	. .	32.124
	63	Nadir	. .	.	. .	199 59 59.5	66.2	67.8	61.8	68.2	63.2	64.45	30.136	. .	. .
8	64	λ Scorpii	. .	3	III–VII.	95 50 3.7	10.6	12.2	5.7	12.4	7.1	8.62	29.440	—0.152	29.295
	65	B. A. C. 5964	8.0	3	III–VII.	91 0 2.7	7.8	8.5	1.8	9.7	2.3	5.47	31.294	—0.152	31.148

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 4.1	S. 59 27 11.6	1 32.6	− 20 35 4.9	− 2.2	Y.	
2	30.068	85.0	81.9	+ 1 21.5	78 11 26.5	4 15.1	− 39 22 2.4	+ 1.1	Y.	
3	. .	. .	. .	− 0 41.4	70 49 23.4	2 36.1	− 31 58 20.3	− 0.9	Y.	
4	. .	. .	. .	− 3 18.6	70 46 46.2	2 35.7	− 31 55 42.7	− 1.2	Y.	
5	. .	. .	. .	+ 0 6.8	66 35 15.4	2 5.9	− 27 43 42.0	− 2.2	Y.	
6	. .	. .	. .	+ 0 53.5	66 36 2.1	2 6.0	− 27 44 28.8	− 2.2	Y.	Faint.
7	. .	. .	. .	− 0 45.0	62 14 17.8	1 43.8	− 23 22 22.3	− 3.4	Y.	
8	30.074	84.7	81.3	− 2 31.2	57 27 38.7	1 25.8	− 18 35 25.2	− 4.4	Y.	
9	30.078	84.4	81.0	− 1 17.4	64 28 47.9	1 54.4	− 25 37 3.1	− 4.6	Y.	
10	. .	. .	. .	− 1 22.8	64 28 42.6	1 54.4	− 25 36 57.8	− 4.6	Y.	
11	30.050	85.0	81.3	+ 0 18.5	54 45 22.9	1 17.4	− 15 53 1.1	− 3.0	Y.	Faint.
12	. .	. .	. .	− 1 39.1	70 58 29.1	2 37.5	− 32 7 27.3	+ 0.4	Y.	
13	. .	. .	. .	− 0 40.5	70 59 27.6	2 37.6	− 32 8 26.0	+ 0.3	Y.	
14	30.052	84.9	80.7	+ 0 5.3	56 5 11.0	1 21.5	− 17 12 53.2	− 3.6	Y.	
15	. .	. .	. .	− 2 35.8	75 47 29.4	3 32.8	− 36 57 23.0	+ 0.1	Y.	
16	. .	. .	. .	− 1 59.0	64 28 9.2	1 54.4	− 25 36 24.3	− 2.5	Y.	
17	30.046	84.3	80.4	− 2 14.2	59 37 51.9	1 33.4	− 20 45 46.1	− 4.0	Y.	
18	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
19	30.146	76.7	71.2	− 2 1.5	66 48 7.2	2 10.0	− 27 56 38.0	+ 3.1	Y.	
20	. .	. .	. .	+ 3 3.8	77 58 8.9	4 16.6	− 39 8 46.3	+ 5.9	Y.	
21	. .	. .	. .	+ 2 31.6	77 57 36.6	4 16.5	− 39 8 13.9	+ 5.7	Y.	
22	30.152	76.6	70.5	+ 0 25.9	70 30 35.0	2 37.2	− 31 39 32.9	+ 3.3	Y.	
23	. .	. .	. .	− 0 10.9	70 54 54.9	2 40.8	− 32 3 56.5	+ 2.9	Y.	
24	. .	. .	. .	− 1 7.5	S. 77 29 2.1	4 7.4	− 38 39 30.3	+ 4.1	Y.	
25	30.160	76.1	69.5	+ 0 7.1	N. 34 39 48.1	38.9	+ 73 34 6.2	− 17.1	Y.	Very faint.
26	. .	. .	. .	+ 2 45.1	S. 54 47 54.2	1 19.6	− 15 55 34.6	− 2.9	Y.	
27	. .	. .	. .	+ 1 39.7	54 46 48.8	1 19.6	− 15 54 29.1	− 2.9	Y.	
28	. .	. .	. .	− 1 46.5	70 58 24.3	2 41.7	− 32 7 26.8	+ 0.7	Y.	
29	. .	. .	. .	+ 2 6.9	73 32 15.8	3 8.2	− 34 41 44.7	+ 0.5	Y.	
30	30.164	75.3	68.8	+ 2 5.5	73 32 14.4	3 8.2	− 34 41 43.3	+ 0.5	Y.	
31	. .	. .	. .	− 2 34.3	38 47 31.8	45.3	+ 0 5 22.2	− 7.6	Y.	
32	. .	. .	. .	+ 0 38.2	38 50 44.2	45.4	+ 0 2 9.6	− 7.7	Y.	
33	30.162	75.0	68.1	− 2 8.1	84 42 59.8	9 5.6	− 45 58 26.1	+ 1.8	Y.	
34	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
35	30.020	77.6	72.6	− 0 16.7	78 9 52.4	4 18.7	− 39 20 31.8	+ 4.4	Y.	
36	. .	. .	. .	− 0 10.6	77 19 56.8	4 2.6	− 38 30 20.2	+ 2.8	Y.	
37	30.032	77.1	71.6	+ 1 55.3	77 22 2.7	4 3.3	− 38 32 26.8	+ 2.7	Y.	
38	. .	. .	. .	+ 1 12.6	78 11 20.8	4 20.1	− 39 22 1.6	+ 2.2	Y.	
39	. .	. .	. .	− 1 28.3	75 18 37.0	3 29.5	− 36 28 27.2	+ 1.1	Y.	
40	30.024	76.7	71.0	− 3 9.2	75 16 56.2	3 29.1	− 36 26 46.0	+ 1.0	Y.	
41	. .	. .	. .	+ 1 49.6	36 21 58.1	41.2	+ 2 31 0.0	− 8.5	Y.	
42	. .	. .	. .	− 3 20.3	59 56 47.8	1 36.3	− 21 4 44.8	− 3.6	Y.	
43	30.028	76.1	70.6	− 2 20.9	59 57 47.1	1 36.4	− 21 5 44.3	− 3.7	Y.	
44	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
45	29.910	80.0	74.8	− 0 54.4	70 4 13.1	2 31.0	− 31 13 4.9	+ 1.0	Y.	
46	. .	. .	. .	− 1 52.5	73 58 14.8	1 29.8	− 35 6 5.4	+ 1.4	Y.	
47	. .	. .	. .	+ 3 40.2	74 8 48.3	3 12.1	− 35 18 21.2	+ 1.1	Y.	
48	. .	. .	. .	+ 3 2.7	74 8 10.7	3 12.0	− 35 17 43.5	+ 1.1	Y.	
49	29.916	79.2	73.2	+ 0 18.5	69 5 26.0	2 24.0	− 30 14 10.7	− 0.7	Y.	
50	. .	. .	. .	+ 0 20.5	69 5 27.9	2 24.0	− 30 14 12.6	− 0.7	Y.	
51	. .	. .	. .	− 2 17.6	60 22 50.3	1 37.2	− 21 30 48.3	− 3.3	Y.	
52	29.916	78.8	73.0	− 3 34.6	57 51 34.0	1 28.0	− 18 59 22.8	− 4.3	Y.	
53	. .	. .	. .	+ 0 59.9	68 26 6.0	2 19.3	− 29 34 46.1	− 2.4	Y.	
54	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
55	. .	. .	. .	+ 1 0.4	77 21 9.1	3 59.0	− 38 31 28.8	+ 3.0	Y.	
56	29.980	82.0	79.6	− 0 7.2	77 20 1.5	3 58.6	− 38 30 20.8	+ 2.8	Y.	
57	29.984	81.7	78.4	+ 2 3.8	61 47 9.8	1 42.2	− 22 55 12.7	− 2.1	Y.	
58	. .	. .	. .	+ 0 19.0	69 5 28.2	2 23.0	− 30 14 12.0	− 0.6	Y.	
59	. .	. .	. .	+ 0 20.2	69 5 29.4	2 23.0	− 30 14 13.2	− 0.6	Y.	
60	. .	. .	. .	− 2 13.0	60 22 51.0	1 36.7	− 21 30 48.4	− 3.3	Y.	
61	29.988	81.2	76.5	+ 1 27.1	57 51 35.1	1 27.7	− 18 59 23.5	− 4.4	Y.	
62	. .	. .	. .	− 1 6.5	57 49 1.5	1 27.5	− 18 56 49.7	− 4.4	Y.	
63	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
64	30.116	85.0	82.5	+ 0 22.1	75 50 30.7	3 33.3	− 37 0 24.8	+ 2.8	Y.	
65	. .	. .	. .	− 0 36.0	S. 70 59 29.5	2 37.6	− 32 8 27.9	+ 1.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Aug. 8	1	Anon. $17^h 44^m 44^s$	7.7	3	III–VII.	95 20 1.2	6.9	9.8	2.0	9.7	2.0	5.27	32.804	−0.152	32.659
	2	Anon. $17^h 51^m 50^s$	8.0	3	V, VII, IX.	95 50 1.4	7.7	9.7	2.0	9.2	3.7	5.62	35.285	. .	35.157
	3	O. Arg. S. 17597.	. .	2	VII, IX.	83 5 4.1	10.2	12.8	5.1	13.1	5.9	8.53	32.419	. .	32.293
	4	Nadir	. .	.	. .	200 0 0.9	6.6	8.4	0.6	9.1	4.1	4.95	30.189	. .	. .
12	5	Lacaille 7160.	6.0	3	III–VII.	97 30 3.4	9.5	10.5	3.9	12.1	4.6	7.33	31.938	−0.141	31.805
	6	Anon. $17^h 16^m 33^s$	7.5	3	III–VII.	93 20 0.0	5.6	6.8	0.8	7.7	1.1	3.67	35.978	. .	35.844
	7	O. Arg. S. 16897.	9.0	3	III–VII.	81 45 2.7	8.0	10.4	3.8	11.1	3.5	6.58	28.797	. .	28.660
	8	Anon. $17^h 31^m 45^s$	8.3	3	III–VII.	90 59 59.6	64.2	65.8	58.6	66.4	58.6	62.20	26.646	. .	26.511
	9	Anon. $17^h 31^m 55^s$	9.0	2	I, IX.	" " "	"	"	"	"	"	"	25.690	. .	25.580
	10	Anon. $17^h 43^m 15^s$	. .	1	V.	93 35 3.2	9.9	9.4	4.8	12.4	5.0	7.45	30.042	. .	29.901
	11	Anon. $17^h 43^m 42^s$	7.5	2	VII, IX.	" " "	"	"	"	"	"	"	27.948	. .	27.841
	12	Anon. $17^h 45^m 3^s$	8.0	2	VI, VIII.	" " "	"	"	"	"	"	"	27.975	. .	27.854
	13	Anon. $17^h 52^m 12^s$	8.0	3	IV–VI.	7 25 2.5	7.8	10.6	3.0	13.2	2.5	6.60	35.078	. .	34.933
	14	O. Arg. S. 17612.	7.0	3	III–VII.	83 0 2.8	8.0	9.8	3.4	10.5	2.9	6.23	26.812	. .	26.675
	15	O. Arg. S. 17928.	. .	2	III, IX.	77 50 1.9	8.5	10.1	3.1	11.4	3.0	6.33	27.294	. .	27.168
	16	Anon. $18^h 16^m 3^s$	8.0	3	III–VII.	77 25 3.8	10.5	11.8	5.7	11.8	3.5	7.85	24.526	. .	24.393
	17	B. A. C. 6285.	5.0	3	IV–VI.	91 54 59.2	65.1	67.2	60.9	68.3	59.4	63.35	29.907	. .	29.768
	18	Anon. $18^h 23^m 55^s$	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	35.138	. .	34.999
	19	Anon. $18^h 24^m 44^s$	. .	2	VII, IX.	" " "	"	"	"	"	"	"	29.896	. .	29.787
	20	Anon. $18^h 25^m 36^s$	7.8	2	VIII, IX.	" " "	"	"	"	"	"	"	31.922	. .	31.820
	21	Weisse XVIII, 793	8.5	3	III–VII.	68 10 4.8	11.3	13.6	7.2	14.2	8.0	9.85	34.539	. .	34.400
	22	Nadir	. .	.	. .	199 59 57.7	61.5	65.7	58.0	66.4	60.6	61.65	30.073	. .	. .
15	23	Anon. $17^h 31^m 52^s$	8.3	2	I, IX.	91 0 1.1	11.9	11.3	6.9	10.3	1.2	7.12	26.824	−0.131	26.724
	24	Anon. $17^h 31^m 56^s$	9.0	3	IV–VI.	" " "	"	"	"	"	"	"	25.938	. .	25.809
	25	B. A. C. 5964.	8.5	1	IX.	" " "	"	"	"	"	"	"	31.366	. .	31.280
	26	Anon. $17^h 35^m 3^s$	9.0	3	IV–VI.	" " "	"	"	"	"	"	"	28.526	. .	28.397
	27	Anon. $17^h 50^m 9^s$	8.5	2	III, VII.	86 59 57.9	66.3	68.2	63.9	67.1	57.8	63.53	30.178	. .	30.055
	28	Anon. $17^h 50^m 0^s$	8.0	1	V.	" " "	"	"	"	"	"	"	32.526	. .	32.395
	29	γ^2 Sagittarii	. .	3	III–VII.	89 15 5.9	16.7	15.0	10.8	13.8	6.0	11.37	27.536	. .	27.411
	30	O. Arg. S. 17928.	8.5	2	I, IX.	77 50 1.3	10.8	12.1	7.4	11.5	2.1	7.53	27.366	. .	27.252
	31	Anon. $18^h 7^m 32^s$	9.0	2	IV, VI.	" " "	"	"	"	"	"	"	32.304	. .	32.175
	32	Nadir	. .	.	. .	199 59 59.8	68.2	69.8	65.6	68.8	61.5	65.62	30.188	. .	. .
17	33	c^2 Ophiuchi	. .	3	IV–VI.	82 45 0.8	7.9	9.7	4.8	10.5	2.5	6.03	33.320	−0.138	33.183
	34	O. Arg. S. 17016.	9.0	1	V.	85 45 2.5	9.4	11.9	7.0	13.7	4.7	8.20	34.249	. .	34.111
	35	Anon. $17^h 42^m 26^s$	7.5	3	III–VII.	94 10 4.4	12.1	12.3	8.1	14.7	6.8	9.73	32.719	. .	32.588
	36	Anon. $17^h 43^m 18^s$	8.0	2	VII, IX.	" " "	"	"	"	"	"	"	30.319	. .	30.215
	37	Anon. $17^h 52^m 12^s$	. .	3	IV–VI.	7 25 2.6	9.4	11.2	4.9	13.8	3.6	7.58	35.146	. .	35.004
	38	O. Arg. S. 17612.	. .	3	III–VII.	83 0 2.8	10.8	11.2	5.7	12.6	2.9	7.67	27.036	. .	26.902
	39	η Serpentis	. .	3	III–VII.	61 50 0.3	6.8	7.2	1.4	9.6	2.0	4.55	33.128	. .	32.991
	40	Nadir	. .	.	. .	199 59 59.7	66.8	68.3	62.7	69.2	63.4	64.98	30.176	. .	. .
18	41	Anon. $17^h 38^m 36^s$	. .	1	V.	93 35 0.1	7.1	6.1	1.0	9.4	2.5	4.37	23.753	−0.144	23.609
	42	Anon. $17^h 38^m 44^s$	. .	2	I, IX.	" " "	"	"	"	"	"	"	36.960	. .	36.850
	43	Anon. $17^h 43^m 16^s$	. .	3	IV–VI.	" " "	"	"	"	"	"	"	29.926	. .	29.784
	44	B. A. C. 6043.	. .	1	V.	" " "	"	"	"	"	"	"	27.836	. .	27.692
	45	B. A. C. 6042.	. .	2	III, VII.	" " "	"	"	"	"	"	"	28.777	. .	28.643
	46	Anon. $17^h 46^m 22^s$	. .	2	VII, IX.	" " "	"	"	"	"	"	"	32.416	. .	32.262
	47	Anon. $17^h 48^m 19^s$	9.0	3	V, VII, IX.	" " "	"	"	"	"	"	"	31.773	. .	31.651
	48	Nadir	. .	.	. .	199 59 57.7	62.7	64.8	58.1	67.0	61.5	61.97	30.083	. .	. .
26	49	ρ Herculis, (1st *).	. .	2	II, VIII.	21 40 1.9	10.2	9.9	4.7	13.0	3.3	7.17	35.466	−0.124	35.320
	50	ρ Herculis, (2d *).	. .	3	IV–VI.	" " "	"	"	"	"	"	"	35.553	. .	35.427
	51	O. Arg. S. 17281.	7.5	3	IV–VI.	84 40 0.9	9.9	12.7	6.0	11.6	2.6	7.28	38.588	. .	38.465
	52	Anon. $17^h 45^m 11^s$	9.0	1	IX.	" " "	"	"	"	"	"	"	40.449	. .	40.363
	53	γ^2 Sagittarii	. .	3	III–VII.	89 15 2.2	12.2	11.2	5.2	11.3	2.4	7.42	27.377	. .	27.259
	54	Anon. $18^h 5^m 58^s$	10.0	1	V.	80 0 1.0	12.0	12.4	6.1	11.9	2.9	7.72	36.497	. .	36.373
	55	η Serpentis	. .	3	III–VII.	61 50 2.9	11.6	12.0	7.1	12.9	4.4	8.48	33.358	. .	33.235
	56	Nadir	. .	.	. .	199 59 58.7	66.4	68.8	64.2	67.9	61.2	64.53	30.146	. .	. .
Sept. 5	57	Anon. $18^h 15^m 27^s$	7.5	3	IV–VI.	97 30 2.4	12.8	12.9	8.1	11.7	2.1	8.33	30.294	−0.123	30.173
	58	Anon. $18^h 16^m 12^s$	7.5	2	VII, IX.	" " "	"	"	"	"	"	"	34.270	. .	34.184
	59	Nadir	. .	.	. . .	200 0 1.7	9.1	11.6	7.1	10.4	4.1	7.33	30.235	. .	. .
	60	Lacaille 7998.	. .	3	III–VII.	92 50 5.6	15.1	14.2	11.4	14.6	4.9	10.97	30.332	. .	30.215
6	61	Anon. $19^h 0^m 8^s$	8.3	3	III–VII.	71 55 0.0	9.4	8.1	3.9	9.7	0.8	5.32	30.475	−0.115	30.362
	62	Nadir	. .	.	. .	200 0 0.1	6.7	8.4	3.4	8.8	1.8	4.87	30.146	. .	. .
	63	Anon. $20^h 17^m 32^s$	. .	3	III–VII.	82 30 2.9	12.2	11.1	7.2	12.7	3.2	8.22	34.647	. .	34.536
	64	Anon. $20^h 26^m 40^s$	8.5	2	IV, VI.	58 55 2.3	12.2	12.2	8.0	14.2	5.9	9.13	29.788	−0.115	29.673

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.122	84.5	81.8	− 1 23.3	S. 75 18 41.9	3 25.9	− 36 28 28.5	+ 1.5	Y.	
2	. .	. .	. .	− 2 41.7	75 47 23.9	3 32.9	− 36 57 17.6	+ 1.0	Y.	
3	30.124	84.3	81.4	− 1 11.8	63 3 56.7	1 47.7	− 24 12 5.1	− 2.5	Y.	
4	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	Y.	
5	30.096	83.7	80.8	− 0 56.6	77 29 10.8	4 1.2	− 38 39 32.8	+ 4.9	Y.	
6	. .	. .	. .	− 3 3.3	73 17 0.4	3 0.9	− 34 26 22.0	+ 2.9	Y.	
7	30.100	83.4	79.5	+ 0 42.0	61 45 48.6	1 42.2	− 22 53 51.5	− 0.9	Y.	
8	. .	. .	. .	+ 1 49.2	71 1 51.4	2 38.8	− 32 10 50.9	+ 1.4	Y.	
9	. .	. .	. .	+ 2 18.3	71 2 20.5	2 38.9	− 32 11 20.1	+ 1.4	Y.	
10	. .	. .	. .	+ 0 3.1	73 35 10.6	3 4.7	− 34 44 36.0	+ 1.5	Y.	
11	. .	. .	. .	+ 1 7.6	73 36 15.0	3 4.9	− 34 45 40.7	+ 1.5	Y.	
12	30.104	83.0	79.0	+ 1 7.2	S. 73 36 14.6	3 4.9	− 34 45 40.3	+ 1.4	Y.	
13	. .	. .	. .	− 2 34.7	N. 12 37 28.1	12.4	+ 51 31 19.7	+ 17.5	Y.	
14	. .	. .	. .	+ 1 44.1	S. 63 1 50.3	1 48.0	− 24 9 59.1	− 2.3	Y.	
15	30.102	82.7	78.4	+ 1 28.6	57 51 35.0	1 27.7	− 18 59 23.4	− 4.1	Y.	
16	. .	. .	. .	+ 2 55.4	77 28 3.2	4 2.7	− 38 38 26.7	+ 0.5	Y.	
17	. .	. .	. .	+ 0 7.2	71 55 10.6	2 47.4	− 33 4 18.8	− 1.3	Y.	
18	. .	. .	. .	− 2 36.7	71 52 26.6	2.47.0	− 33 1 34.4	− 1.4	Y.	
19	. .	. .	. .	+ 0 6.7	71 55 10.0	2 47.5	− 33 4 18.2	− 1.4	Y.	
20	. .	. .	. .	− 0 57.0	71 54 6.3	2 47.3	− 33 3 14.4	− 1.4	Y.	
21	30.102	82.2	77.6	− 2 17.9	48 7 51.9	59.5	− 9 15 12.2	− 7.6	Y.	
22	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
23	. .	. .	. .	+ 1 42.5	71 1 49.6	2 41.9	− 32 10 52.3	+ 1.6	Y.	
24	. .	. .	. .	+ 2 11.1	71 2 18.2	2 42.0	− 32 11 21.0	+ 1.6	Y.	
25	. .	. .	. .	− 0 40.1	70 59 27.0	2 41.6	− 32 8 29.4	+ 1.5	Y.	
26	30.034	73.4	67.8	+ 0 50.2	71 0 57.3	2 41.7	− 32 9 59.8	+ 1.4	Y.	
27	. .	. .	. .	− 0 1.7	67 0 1.8	2 11.5	− 28 8 34.1	− 0.6	Y.	
28	. .	. .	. .	− 1 15.1	66 58 48.5	2 11.4	− 28 7 20.6	− 0.6	Y.	
29	30.034	73.1	66.8	+ 1 21.0	69 16 32.4	2 27.7	− 30 25 20.9	− 0.3	Y.	
30	. .	. .	. .	+ 1 26.0	57 51 33.5	1 29.5	− 18 59 23.8	− 4.1	Y.	
31	. .	. .	. .	− 1 8.2	57 48 59.37	1 29.4	− 18 56 49.5	− 4.1	Y.	
32	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
33	29.896	78.0	75.8	− 1 39.8	62 43 26.3	1 46.5	− 23 51 33.5	− 0.6	Y.	
34	. .	. .	. .	− 2 8.8	65 42 59.4	2 1.7	− 26 51 21.8	0.0	Y.	
35	. .	. .	. .	− 1 21.1	74 8 48.6	3 11.9	− 35 18 21.2	+ 1.9	Y.	
36	29.900	77.9	74.3	− 0 6.8	S. 74 10 3.0	3 12.1	− 35 19 35.9	+ 1.9	Y.	
37	. .	. .	. .	− 2 36.9	N. 12 37 29.3	12.4	+ 51 31 20.9	− 18.7	Y.	
38	. .	. .	. .	+ 1 36.9	S. 63 1 44.6	1 48.3	− 24 9 53.6	− 2.2	Y.	Faint.
39	29.910	77.5	73.5	− 1 33.7	41 48 30.8	49.5	− 2 55 41.1	− 8.8	Y.	
40	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
41	30.006	80.5	78.5	+ 3 19.8	73 38 24.2	3 5.0	− 34 47 49.9	+ 2.0	Y.	
42	. .	. .	. .	− 3 34.9	73 31 29.5	3 3.6	− 34 40 53.9	+ 2.0	Y.	
43	. .	. .	. .	+ 0 6.8	73 35 11.1	3 4.3	− 34 44 36.2	+ 1.8	Y.	
44	. .	. .	. .	+ 1 12.2	73 36 16.6	3 4.6	− 34 45 42.0	+ 1.7	Y.	
45	. .	. .	. .	+ 0 42.5	73 35 46.9	3 4.5	− 34 45 12.1	+ 1.7	Y.	
46	. .	. .	. .	− 1 10.9	73 33 53.5	3 4.2	− 34 43 18.4	+ 1.6	Y.	
47	30.014	80.4	78.5	− 0 51.7	73 34 12.6	3 4.2	− 34 43 37.6	+ 1.5	Y.	
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
49	. .	. .	. .	− 2 46.8	1 37 20.4	1.6	+ 37 16 17.3	− 18.4	Y.	
50	30.210	78.0	71.8	− 2 50.2	1 38 17.0	1.6	+ 37 15 20.6	− 18.4	Y.	
51	. .	. .	. .	− 4 25.6	64 35 41.7	1 57.9	− 25 44 0.3	− 0.7	Y.	
52	30.214	77.2	70.3	− 5 25.3	64 34 42.0	1 57.8	− 25 43 0.5	− 0.8	Y.	
53	. .	. .	69.7	+ 1 25.8	69 16 33.2	2 27.7	− 30 25 21.7	+ 0.1	Y.	
54	. .	. .	. .	− 3 19.9	59 56 47.8	1 37.1	− 21 4 45.7	− 3.2	Y.	Very faint.
55	30.220	76.2	69.1	− 1 41.4	41 48 27.1	50.4	− 2 55 38.3	− 9.1	Y.	
56	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
57	. .	. .	. .	− 0 5.4	77 30 2.9	4 9.0	− 38 40 32.6	+ 2.3	Y.	
58	30.156	73.8	67.3	− 2 11.2	77 27 57.2	4 8.3	− 38 38 26.2	+ 2.2	Y.	
59	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
60	30.158	72.7	65.2	− 0 6.8	72 50 4.2	3 1.5	− 33 59 26.5	− 1.5	Y.	As one star, if duplex.
61	30.236	73.5	68.8	− 0 11.3	51 54 54.0	1 12.0	− 13 2 26.7	− 7.9	Y.	
62	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
63	. .	. .	. .	− 2 22.2	62 27 46.0	1 49.0	− 23 35 55.8	− 8.3	Y.	
64	. .	. .	. .	+ 0 10.2	S. 38 55 19.4	46.0	− 0 2 26.1	− 13.8	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Sept. 6	1	Anon. $20^h 27^m 40^s$.	9.2	3	V, VII, IX.	58 55 2.3	12.2	12.2	8.0	14.2	5.9	9.13	23.529	−0.115	23.422
	2	Lacaille 8587. . .	6.5	3	III–VII.	91 25 2.2	13.8	12.4	7.3	13.7	3.8	8.87	34.651	. .	34.542
9	3	Anon. $19^h 0^m 8^s$ . .	8.5	3	III–VII.	71 55 4.6	13.6	13.8	9.8	13.8	6.6	10.37	30.670	−0.096	30.576
	4	O. Arg. S. 19631. .	8.5	3	III–VII.	78 35 1.4	11.8	13.7	7.9	13.2	4.6	8.77	37.838	. .	37.745
	5	Nadir	. .	.	. .	200 0 0.9	9.6	10.7	7.5	10.5	3.9	7.18	30.201	. .	. .
	6	Weisse XX, 841. .	. .	2	I, IX.	66 10 0.9	8.2	10.2	4.6	10.7	1.5	6.02	34.548	. .	34.458
	7	Weisse XX, 846. .	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	36.206	. .	36.110
	8	Anon. $20^h 37^m 1^s$.	7.0	3	V, VII, IX.	94 30 0.0	8.2	9.3	5.3	9.8	0.1	5.45	33.684	. .	33.610
	9	Anon. $20^h 39^m 5^s$.	8.5	3	III–VII.	“ “ “	“	“	“	“	“	“	34.791	. .	34.702
	10	Lalande 41544 . .	8.3	3	III–VII.	71 30 2.2	12.2	12.9	8.6	12.6	4.1	8.77	32.042	. .	31.948
	11	Anon. $21^h 24^m 51^s$.	8.5	3	III–VII.	82 30 2.0	11.6	11.4	7.9	11.4	0.9	7.53	31.304	. .	31.212
	12	Weisse XXI, 1139 .	7.7	3	III–VII.	64 15 5.3	14.3	16.9	11.6	15.4	5.9	9.90	30.944	. .	30.849
13	13	O. Arg. S. 18915 .	8.5	3	V, VII, IX.	87 45 5.9	14.3	14.2	11.2	15.2	5.7	11.08	32.530	−0.086	32.642
	14	Anon. $19^h 0^m 12^s$.	9.5	3	III–VII.	67 45 0.2	9.0	9.9	5.0	9.6	2.1	5.97	35.216	. .	35.132
	15	Nadir	. .	.	. .	199 59 54.9	64.1	64.3	59.9	64.2	57.1	60.75	29.983	. .	. .
	16	Anon. $20^h 26^m 40^s$.	8.5	3	IV–VI.	58 55 5.9	17.1	15.3	13.1	18.6	8.9	13.15	29.911	. .	29.825
	17	B. A. C. 7221 . .	5.5	3	III–VII.	71 55 8.4	19.7	18.7	15.3	20.1	10.1	15.38	33.027	. .	32.943
	18	Lalande 41544 . .	8.3	3	III–VII.	71 30 2.1	13.9	13.1	9.2	13.4	4.4	9.35	32.087	. .	32.003
	19	O. Arg. S. 21490. .	10.0	1	V.	74 5 3.0	14.8	14.9	12.2	14.5	4.2	10.60	34.911	. .	34.825
	20	Weisse XXI, 1139 .	. .	3	III–VII.	64 15 2.2	12.5	13.7	9.4	13.1	1.8	8.78	30.803	. .	30.718
14	21	Anon. $21^h 44^m 10^s$.	. .	3	III–VII.	94 29 59.4	71.2	70.7	66.1	70.8	60.0	66.37	33.069	. .	32.990
	22	Lacaille 8585. . .	7.0	3	III–VII.	91 5 3.8	13.4	13.1	9.5	13.4	4.7	9.65	34.012	−0.068	33.950
	23	Nadir	. .	.	. .	199 59 59.6	68.4	68.8	65.1	69.3	61.4	65.43	30.116	. .	. .
	24	Anon. $21^h 15^m 53^s$.	8.0	3	IV–VI.	10 5 4.8	15.9	16.7	12.2	17.4	6.7	12.28	29.749	. .	29.678
	25	B. A. C. 7431 . .	6.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	33.329	. .	33.258
	26	O. Arg. N. 22321 .	7.5	3	IV½–V½.	349 0 2.8	14.0	16.7	10.7	15.8	4.2	10.70	32.062	. .	31.986
	27	Weisse XXI, 965 .	9.5	3	III–VII.	71 10 1.8	11.6	11.1	oblit.	12.2	3.3	8.15	36.813	. .	36.747
	28	Anon. $21^h 44^m 9^s$.	8.8	3	III–VII.	94 29 59.2	69.8	69.9	66.0	70.1	60.0	65.83	32.966	. .	32.905
16	29	Anon. $19^h 53^m 42^s$.	8.0	3	IV–VI.	52 20 4.0	7.5	10.6	4.7	12.1	4.5	7.23	35.092	+0.012	35.104
	30	Nadir	. .	.	. .	200 0 3.5	5.3	10.6	3.0	10.4	3.0	5.97	30.179	. .	. .
	31	O. Arg. S. 20817. .	9.0	3	III–VII.	83 10 1.5	4.8	10.0	2.0	8.3	59.1	4.28	34.491	. .	34.507
	32	Lalande 41624 . .	. .	3	III–VII.	20 50 0.9	3.6	7.5	0.1	9.5	59.2	3.47	33.063	. .	33.068
	33	Anon. $21^h 41^m 10^s$.	9.0	3	IV–VI.	77 50 0.9	4.9	9.2	2.1	9.0	59.5	4.27	29.989	. .	30.002
	34	Anon. $21^h 47^m 28^s$.	. .	3	III–VII.	70 50 1.1	5.3	8.6	2.1	9.5	0.1	4.45	29.579	. .	29.593
	35	Lacaille 9052. . .	7.0	3	IV–VI.	99 40 3.6	8.2	10.2	2.9	10.0	0.1	5.83	31.992	. .	32.007
19	36	Nadir	. .	.	. .	200 0 2.5	6.4	11.2	3.8	9.1	1.2	5.70	30.156	+0.026	. .
	37	O. Arg. S. 20100. .	. .	1	VII.	86 45 2.8	10.0	13.0	9.2	10.9	2.2	8.02	34.010	. .	34.051
	38	Anon. $20^h 4^m 27^s$.	9.0	3	IV–VI.	68 5 3.8	10.5	13.2	9.0	12.8	3.0	8.72	37.067	. .	37.093
	39	Weisse XX, 965. .	. .	3	III–VII.	71 5 3.0	9.5	12.8	9.0	11.0	2.4	7.95	27.303	. .	27.331
	40	O. Arg. S. 21759. .	8.3	4	I, II, VIII, IX.	80 35 3.5	10.4	13.7	9.7	11.7	1.2	8.37	28.579	. .	28.621
	41	O. Arg. S. 21760. .	8.5	3	IV–VI.	“ “ “	“	“	“	“	“	“	25.493	. .	25.520
	42	Anon. $22^h 35^m 36^s$.	8.0	2	VI, VII.	80 30 3.0	10.9	15.1	10.1	10.9	0.2	8.37	31.880	. .	31.915
21	43	Weisse XVIII, 1539	. .	3	VII, VIII, IX.	45 15 2.0	5.6	9.0	1.4	11.1	58.7	4.63	31.507	+0.007	31.517
	44	Lacaille 8153. . .	7.5	3	IV–VI.	95 55 3.9	10.1	2.0	6.4	13.0	3.4	6.47	30.030	. .	30.039
	45	Lacaille 8158. . .	7.5	3	IV–VI.	100 35 3.8	7.4	9.6	5.4	10.3	0.9	6.23	34.462	. .	34.472
	46	O. Arg. S. 20022. .	. .	3	IV–VI.	86 0 4.6	9.0	13.1	6.0	14.1	1.6	8.07	27.299	. .	27.308
	47	Lacaille 8278. . .	. .	3	IV–VI.	95 55 7.6	12.9	15.8	9.5	17.0	13.8	12.77	36.640	. .	36.649
	48	γ Sagittæ	. .	3	V, VI, VII.	39 45 7.3	13.8	15.7	9.5	19.4	9.1	12.47	31.245	. .	31.249
	49	Nadir	. .	.	. .	200 0 7.1	10.3	14.8	9.2	13.6	7.6	10.43	30.326	. .	. .
	50	Lalande 44860 . .	7.5	3	IV–VI.	79 55 3.8	11.4	3.5	7.7	13.3	2.5	7.03	32.357	. .	32.365
23	51	Weisse XX, 46 . .	8.0	3	IV–VI.	68 5 3.0	8.9	11.2	4.1	13.1	5.0	7.55	28.499	+0.043	28.542
	52	Nadir	. .	.	. .	200 0 2.5	4.4	8.8	1.2	8.5	2.2	4.60	30.104	. .	. .
	53	Anon. $20^h 27^m 41^s$.	. .	1	VIII.	58 55 4.6	9.7	12.0	5.0	14.1	4.7	8.35	23.632	. .	23.685
	54	B. A. C. 7437 . .	7.5	3	IV–VI.	35 10 6.6	10.4	13.5	3.1	15.5	4.1	8.87	30.198	. .	30.241
	55	O. Arg. S. 21490. .	. .	2	VII, IX.	74 0 5.5	8.9	13.5	7.0	14.1	2.9	8.65	25.105	. .	25.166
	56	Anon. $21^h 44^m 9^s$.	. .	3	IV–VI.	94 30 6.9	10.8	13.0	6.8	14.0	4.5	9.33	32.820	. .	32.865
26	57	Weisse XXI, 1063 .	. .	3	IV–VI.	64 50 6.4	8.8	12.0	6.8	12.2	4.5	8.45	28.553	+0.011	28.564
	58	Nadir	. .	.	. .	200 0 4.5	6.9	12.5	5.0	10.9	4.4	7.33	30.223	. .	. .
	59	Anon. $22^h 23^m 24^s$.	. .	1	V.	52 20 4.5	9.1	12.8	4.8	13.8	5.2	8.37	33.440	. .	33.451
	60	Lacaille 9172. . .	. .	2	VIII, IX.	91 40 6.1	11.2	13.5	6.4	14.0	3.4	9.10	31.448	. .	31.495
	61	Anon. $22^h 35^m 36^s$.	. .	3	IV–VI.	80 30 7.0	12.2	14.5	7.0	15.7	6.0	10.40	31.763	. .	31.775
	62	O. Arg. S. 22450. .	9.0	3	IV–VI.	83 35 6.0	10.9	14.8	7.0	14.2	4.8	9.62	31.105	. .	31.117
	63	O. Arg S. 22545. .	. .	3	III–VII.	82 5 4.0	8.3	12.0	4.0	11.6	1.6	6.92	30.131	. .	30.146
	64	82 Aquarii	. .	3	IV–VI.	66 10 2.5	7.4	11.2	4.5	12.2	2.1	6.65	32.654	+0.011	32.665

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 3 25.7	S. 38 58 34.8	46.1	− 0 5 41.7	− 13.9	Y.	
2	30.245	71.0	64.0	− 2 22.4	71 22 46.5	2 47.6	− 32 31 54.9	− 7.5	Y.	
3	30.156	73.4	68.7	− 0 18.0	51 54 52.3	1 11.8	− 13 2 24.9	− 7.8	Y.	
4	. .	. .	67.5	− 4 3.0	58 31 5.8	1 32.0	− 19 38 58.6	− 6.6	Y.	
5	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
6	. .	. .	. .	− 2 19.8	46 7 46.3	59.0	− 7 15 6.0	− 12.5	Y.	
7	. .	. .	. .	− 3 11.6	46 6 54.4	58.9	− 7 14 14.1	− 12.5	Y.	
8	. .	. .	. .	− 1 53.2	74 28 12.3	3 21.0	− 35 37 54.1	− 6.0	Y.	
9	30.156	72.1	65.4	− 2 27.4	74 27 38.0	3 21.0	− 35 37 19.8	− 6.1	Y.	
10	30.152	71.7	63.8	− 1 1.0	51 29 7.7	1 11.4	− 12 36 39.9	− 12.7	Y.	
11	. .	. .	. .	− 0 38.0	62 29 29.6	1 48.9	− 23 37 39.2	− 11.1	Y.	
12	30.148	70.9	62.0	− 0 26.6	44 14 43.3	55.6	− 5 21 59.6	+ 14.6	Y.	
13	30.308	70.6	65.6	− 1 17.2	67 43 53.9	2 18.3	− 28 52 32.9	− 2.2	Y.	
14	. .	. .	. .	− 2 40.9	47 42 25.1	1 2.6	− 8 49 48.4	− 9.1	Y.	
15	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	Faint.
16	30.308	68.8	62.2	+ 0 5.5	38 55 18.6	46.3	− 0 2 25.7	− 14.0	Y.	
17	. .	. .	. .	− 1 32.2	51 53 43.2	1 13.2	− 13 1 17.1	− 11.4	Y.	
18	30.306	68.0	59.5	− 1 2.8	51 29 6.6	1 12.4	− 12 36 39.8	− 12.6	Y.	
19	. .	. .	. .	− 2 31.2	54 2 39.4	1 19.4	− 15 10 19.5	− 12.5	Y.	Faint.
20	30.308	67.7	59.3	− 0 22.5	44 14 46.3	56.2	− 5 22 3.2	− 14.6	Y.	
21	. .	. .	. .	− 1 33.7	74 28 32.7	3 24.7	− 35 38 18.2	− 9.3	Y.	
22	30.222	70.0	64.4	− 2 3.8	S. 71 3 5.8	2 44.3	− 33 12 10.9	− 6.6	Y.	
23	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
24	. .	. .	. .	+ 0 10.1	N. 9 54 37.7	10.0	+ 48 48 26.9	− 19.8	Y.	
25	. .	. .	. .	− 1 42.1	9 56 29.8	10.0	+ 48 50 19.1	− 19.7	Y.	
26	30.216	69.2	61.9	− 1 2.2	N. 31 0 51.5	34.4	+ 69 55 5.2	− 18.7	Y.	
27	. .	. .	. .	− 3 31.7	S. 51 6 36.5	1 10.9	− 12 14 8.1	− 13.4	Y.	Corr. +0″.93 applied to mean of A, B, E, F.
28	30.214	69.0	61.7	− 1 31.0	74 28 34.8	3 23.1	− 35 38 18.7	− 9.2	Y.	
29	30.084	73.6	70.8	− 2 40.0	32 17 27.2	35.4	+ 6 35 36.6	− 15.1	Y.	
30	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
31	. .	. .	. .	− 2 21.0	63 7 43.0	1 50.6	− 24 15 54.3	− 8.4	Y.	
32	30.070	71.8	67.0	− 1 36.2	0 48 27.3	0.8	+ 38 5 11.1	− 19.9	Y.	
33	. .	. .	. .	− 0 0.1	57 50 4.2	1 29.6	− 18 57 54.5	− 12.1	Y.	
34	30.070	71.0	66.1	+ 0 12.7	50 50 17.2	1 9.3	− 11 57 47.2	− 13.6	Y.	
35	. .	. .	. .	− 1 2.9	79 39 3.0	4 59.2	− 40 50 22.9	− 9.0	Y.	
36	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
37	30.190	66.0	59.6	− 2 7.0	66 43 1.0	2 12.8	− 27 51 34.6	− 4.9	Y.	Extremely faint.
38	. .	. .	. .	− 3 42.5	48 1 26.2	1 3.9	− 9 8 50.9	− 11.2	Y.	
39	30.184	62.0	55.8	+ 1 23.5	51 6 31.5	1 11.7	− 12 14 3.9	− 13.4	Y.	
40	. .	. .	. .	+ 0 43.2	60 35 51.6	1 42.5	− 21 43 54.8	− 11.8	Y.	
41	. .	. .	. .	+ 2 20.2	60 37 28.5	1 42.6	− 21 45 31.8	− 11.8	Y.	
42	30.176	62.0	54.3	− 1 0.0	60 29 8.4	1 42.2	− 21 37 11.4	− 13.4	Y.	
43	. .	. .	. .	− 0 47.5	25 14 17.1	26.9	+ 13 38 55.3	− 16.0	F.	
44	. .	. .	. .	− 0 1.2	75 55 5.2	3 43.2	− 37 5 9.2	− 0.7	F.	
45	30.316	68.0	65.6	− 2 20.2	80 32 46.0	5 29.0	− 41 44 35.8	+ 0.7	F.	
46	. .	. .	. .	+ 1 24.2	66 1 32.3	2 7.6	− 27 10 0.6	− 4.8	F.	
47	. .	. .	. .	− 3 28.6	75 51 44.2	3 42.4	− 37 1 47.3	− 1.8	F.	
48	30.320	68.0	65.2	− 0 39.1	19 44 33.4	20.5	+ 19 8 45.4	− 18.4	F.	
49	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
50	30.334	64.0	59.0	− 1 14.1	59 53 52.9	1 39.4	− 21 1 53.1	− 13.9	F.	
51	30.100	69.0	66.3	+ 0 45.7	48 5 53.2	1 3.0	− 9 13 16.9	− 11.0	F.	
52	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
53	. .	. .	. .	+ 3 17.5	38 58 25.8	45.6	− 0 5 32.4	− 14.3	F.	Very faint.
54	. .	. .	. .	− 0 7.6	15 10 1.3	15.4	+ 23 43 22.6	− 19.6	F.	
55	30.100	68.0	64.5	+ 2 31.2	54 2 39.9	1 18.1	− 15 10 18.7	− 12.1	F.	
56	. .	. .	. .	− 1 29.8	74 28 39.6	3 21.3	− 35 38 21.6	− 7.9		
57	. .	. .	. .	+ 0 45.0	44 50 53.4	55.9	− 5 58 10.0	− 14.5	F.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
59	. .	. .	. .	− 1 48.2	32 18 20.2	35.6	+ 6 34 43.4	− 17.0	F.	Exceedingly faint.
60	30.124	72.8	68.4	− 0 46.8	71 39 22.3	2 48.1	− 32 48 31.1	− 10.0	F.	
61	. .	. .	. .	− 0 55.6	60 29 14.8	1 39.3	− 21 37 14.8	− 12.6	F.	
62	. .	. .	. .	− 0 35.0	63 34 34.6	1 53.0	− 24 42 48.4	− 12.4	F.	
63	. .	. .	. .	− 0 4.6	62 5 2.3	1 46.1	− 23 13 9.2	− 12.9	F.	
64	30.126	72.0	67.4	− 1 23.5	S. 46 8 43.1	58.7	− 7 16 2.6	− 15.3	F.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Sept. 26	1	11 Piscium	. .	3	VI, VII, VIII.	61 24 58.5	62.5	65.3	57.0	66.3	56.3	60.98	34.153	+0.011	34.172
	2	Weisse XXIII, 845.	. .	3	IV–VI.	58 34 59.0	64.1	67.0	59.0	68.3	59.7	62.85	29.018	. .	29.029
Oct. 4	3	Moon, S. L. . . .	. .	3	IV–VI.	77 20 0.2	4.3	9.0	2.2	8.3	56.6	3.43	28.801	−0.024	28.778
	4	Nadir	. .	.	. .	200 0 0.6	6.2	10.6	4.4	9.1	0.2	5.18	30.189	. .	. .
5	5	Moon, S. L. . . .	. .	3	III–VII.	73 34 59.8	68.1	71.0	67.3	71.5	58.8	66.08	29.476	+0.001	29.480
	6	Nadir	. .	.	. .	200 0 0.8	7.6	11.3	6.9	10.3	1.0	6.32	30.201	. .	. .
8	7	Nadir	. .	.	. .	200 0 1.0	5.6	9.4	7.1	7.5	0.1	5.12	30.150	+0.013	. .
	8	Anon. 23^h 56^m 27^s .	9.5	3	VII, VIII, IX.	94 15 2.1	11.5	12.2	10.5	10.4	1.5	8.03	24.063	. .	24.109
	9	B. A. C. 103 . . .	5.0	3	IV–VI.	92 35 0.8	9.5	9.2	9.0	9.0	59.6	6.18	32.393	. .	32.408
	10	O. Arg. S. 284 . .	. .	3	IV–VI.	86 25 0.4	8.7	12.0	9.4	9.8	4.6	7.48	29.111	. .	29.126
	11	Anon. 0^h 36^m 40^s .	9.0	2	IV, VI.	54 50 0.3	8.2	11.0	8.7	10.5	59.8	6.42	29.088	. .	29.098
	12	O. Arg. S. 428 . .	. .	3	IV–VI.	74 19 59.4	68.1	71.3	69.7	71.7	60.4	66.77	30.962	. .	30.976
	13	Moon, S. L. . . .	. .	3	III–VII.	59 44 57.5	66.2	68.0	67.0	67.6	58.8	64.18	34.295	. .	34.308
	14	Neptune	. .	3	IV–VI.	52 25 2.0	9.0	13.6	11.0	12.6	3.2	8.57	25.227	. .	25.240
10	15	Dorpat 2601 . . .	8 or 9	3	IV–VI.	57 20 2.0	8.9	9.1	5.7	12.7	4.2	7.10	33.845	+0.056	33.901
	16	Anon. 20^h 28^m 40^s .	. .	2	VI, IX.	68 55 0.4	6.7	8.4	5.0	12.3	5.1	6.32	29.475	. .	29.544
	17	Nadir	. .	.	. .	200 0 1.2	4.2	7.2	4.9	8.1	4.0	4.93	30.101	. .	. .
18	18	Moon, S. L. . . .	. .	3	IV–VI.	41 5 4.3	20.4	16.8	19.2	15.0	10.0	14.28	31.683	+0.047	31.730
	19	Nadir	. .	.	. .	200 0 1.6	10.8	12.6	14.5	3.0	3.0	7.58	30.195	. .	. .
21	20	Lalande 44922 . .	. .	2	VII, IX.	20 15 1.5	14.1	11.2	13.5	12.4	3.8	9.42	27.712	−0.071	27.626
	21	Lalande 45323 . .	. .	3	IV–VI.	20 45 4.1	16.9	12.9	16.7	15.2	7.7	12.25	39.089	. .	39.016
	22	Anon. 23^h 13^m 45^s .	8.5	3	III–VII.	93 30 1.9	15.9	10.0	16.2	12.1	6.1	10.37	36.181	. .	36.117
	23	Nadir	. .	.	. .	199 59 56.7	69.2	65.1	71.0	65.9	61.1	64.83	30.100	. .	. .
22	24	Rumker 10641 . .	. .	3	IV–VI.	66 5 2.7	8.5	9.3	9.8	10.5	3.7	7.42	31.697	+0.008	31.705
	25	Lalande 44860 . .	8.0	3	V, VI, VII.	79 55 0.8	8.3	8.5	7.8	8.8	1.6	5.97	32.150	. .	32.162
	26	Nadir	. .	.	. .	200 0 0.2	6.1	6.7	7.0	6.3	0.3	4.43	30.133	. .	. .
	27	O. Arg. S. 210 . .	7.0	3	V, VI, VII.	79 55 1.6	9.5	9.4	9.1	9.6	1.0	6.70	30.730	. .	30.746
	28	Groombridge 148 .	. .	3	IV–VI.	348 50 5.2	12.1	14.8	9.9	13.5	2.8	9.72	30.239	. .	30.255
	29	Neptune	. .	3	III–VII.	52 35 1.0	8.2	8.8	8.6	9.2	1.2	6.17	27.462	. .	27.469
	30	Weisse I, 557 . .	. .	3	I, III, VIII.	44 20 1.3	9.1	8.0	9.7	8.3	0.2	6.10	35.646	. .	35.658
	31	Weisse I, 558 . .	. .	3	II, IV, VII.	“ “ “	“	“	“	“	“	“	36.148	. .	36.150
	32	O. Arg. S. 992 . .	7.0	1	IX.	82 25 0.5	9.5	8.0	9.0	9.2	0.0	6.03	28.420	. .	28.462
24	33	Nadir	. .	.	. .	200 0 0.0	2.5	4.8	3.5	4.5	0.0	2.55	30.028	+0.053	. .
	34	Lacaille 9270. . .	. .	3	IV–VI.	100 59 59.8	62.6	63.2	62.0	66.2	58.4	62.03	34.117	. .	34.173
	35	Weisse XXII, 1087.	8.5	2	III, V.	63 55 1.5	5.6	5.2	4.1	6.5	0.6	3.92	28.300	. .	28.351
	36	Weisse XXII, 1088 .	9.0	2	III, VII.	“ “ “	“	“	“	“	“	“	28.250	. .	28.304
	37	Anon. 22^h 57^m 58^s .	8.8	3	III–VII.	63 5 0.3	5.4	6.1	4.0	7.1	59.5	3.73	31.737	. .	31.791
	38	Anon. 23^h 22^m 42^s .	9.0	1	IX.	63 10 0.9	6.8	5.2	3.7	9.0	1.6	4.53	27.875	. .	27.945
	39	Anon. 23^h 56^m 24^s .	7.5	3	IV–VI.	94 15 1.8	7.8	7.8	5.2	9.4	2.0	5.67	23.912	. .	23.967
	40	Weisse XXIII, 1183.	7.0	3	V, VI, VII.	60 5 1.8	7.3	8.9	7.9	10.7	3.1	6.62	28.165	. .	28.222
	41	O. Arg. S. 210 . .	. .	3	VII, VIII, IX.	79 55 1.5	8.2	8.6	5.6	9.6	1.3	5.80	30.587	. .	30.662
	42	Groombridge 148 .	. .	3	IV–VI.	348 50 2.0	9.0	11.2	7.5	11.4	1.7	7.13	30.141	. .	30.186
	43	Lacaille 238 . . .	. .	3	IV–VI.	83 35 0.6	6.9	7.9	7.2	8.6	59.3	5.08	31.427	. .	31.481
	44	Anon. 0^h 49^m 4^s . .	. .	3	VII, VIII, IX.	60 19 59.0	65.4	66.0	62.7	68.2	59.4	63.45	25.257	. .	25.321
	45	Weisse I, 188 . .	. .	3	IV–VI.	45 49 57.5	64.5	64.2	63.8	66.1	56.0	62.02	33.986	. .	34.038
	46	Neptune	. .	3	IV–VI.	52 34 58.2	64.0	64.7	63.8	67.0	59.0	62.78	24.951	. .	25.004
	47	Weisse I, 578 . .	. .	3	II, IV, V.	43 55 0.4	6.5	7.1	5.9	9.1	1.0	5.00	29.502	. .	29.553
	48	O. Arg. S. 992 . .	. .	2	VIII, IX.	82 25 0.8	7.8	7.3	7.5	8.5	0.2	5.35	28.324	. .	28.406
	49	Vesta	. .	3	IV–VI.	60 20 0.7	6.4	7.8	8.2	11.1	0.6	5.80	24.424	. .	24.477
25	50	Weisse (2) XXII, 1012	8.5	3	IV–VI.	19 55 2.6	13.4	10.7	10.2	14.9	6.9	9.78	34.201	−0.090	34.109
	51	Anon. 22^h 45^m 54^s .	8.3	3	III–VII.	“ “ “	“	“	“	“	“	“	36.648	. .	36.550
	52	Anon. 22^h 57^m 53^s .	. .	3	IV–VI.	65 4 58.6	68.1	65.9	66.2	68.3	62.1	64.87	31.118	. .	31.028
	53	Nadir	. .	.	. .	199 59 56.5	65.4	63.1	64.0	65.8	61.2	62.67	30.050	. .	. .
	54	Weisse O, 24. . .	8.8	3	III–VII.	55 30 3.4	12.0	10.9	10.4	16.1	8.4	10.20	37.875	. .	37.784
	55	Lacaille 98 . . .	6.5	2	VII, IX.	88 55 1.9	14.4	8.6	9.9	13.8	7.8	9.40	37.622	. .	37.560
	56	Anon. 0^h 35^m 39^s .	8.8	3	V, VII, IX.	54 50 3.4	13.4	9.7	10.1	14.3	7.0	9.65	29.227	. .	29.143
	57	Anon. 0^h 47^m 20^s .	9.0	2	VII, IX.	57 35 oblit.	14.4	11.2	11.3	16.1	9.9	11.28	34.160	. .	34.079
	58	Polaris	. .	5	I, IX.	330 20 0.8	8.8	9.2	7.1	11.1	3.5	6.75	34.988	. .	34.894
	59	η Piscium	. .	3	III–VII.	44 15 1.8	11.2	8.7	8.9	12.8	6.1	8.25	35.220	. .	35.127
29	60	σ^1 Gruis	6.5	3	III–VII.	100 5 0.1	11.8	6.8	11.6	7.2	1.1	6.43	33.378	−0.069	33.317
	61	σ^2 Gruis	5.5	2	VII, IX.	“ “ “	“	“	“	“	“	“	32.358	. .	33.327
	62	B. A. C. 7957. . .	5.0	3	III–VII.	98 40 0.9	14.3	8.9	13.0	10.3	3.4	8.47	31.275	−0.069	31.214

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 10.8	S. 41 22 50.2	49.8	− 2 30 0.7	− 16.0	F.	
2	30.124	71.0	66.2	+ 0 30.4	38 35 33.3	45.2	+ 0 17 20.8	− 16.2	F.	
3	29.900	64.0	60.0	+ 0 38.2	57 20 41.7	−61 3.0	− 17 25 59.5	. .	F.	
4	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
5	30.070	63.0	57.8	+ 0 16.3	53 35 22.4	−58 33.1	− 13 43 19.0	. .	F.	
6	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
7	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
8	30.234	56.0	50.1	+ 3 4.2	74 18 12.3	3 25.8	− 35 27 58.9	− 11.5	F.	
9	. .	. .	. .	− 1 15.5	72 33 50.7	3 4.8	− 33 43 16.3	− 12.6	F.	
10	. .	. .	. .	+ 0 27.4	66 25 34.9	2 13.8	− 27 34 9.4	− 13.6	F.	
11	. .	. .	. .	+ 0 28.2	34 50 34.7	40.9	+ 4 2 23.7	− 16.0	F.	
12	. .	. .	. .	− 0 30.6	54 19 36.2	1 21.7	− 15 27 18.7	− 15.0	F.	
13	30.238	55.8	49.4	− 2 15.1	39 42 49.1	−48 41.5	− 0 0 28.4	. .	F.	
14	. .	. .	. .	+ 2 28.9	32 27 37.5	37.2	+ 6 25 24.5	. .	F.	
15	30.108	63.6	60.4	− 2 2.3	37 18 4.8	43.6	+ 1 34 50.8	− 13.7	F.	
16	30.110	63.4	58.9	+ 0 14.3	48 55 20.6	1 5.8	− 10 2 47.2	− 11.0	F.	Cloudy.
17	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
18	30.100	48.0	42.3	− 0 54.2	21 4 20.1	−35 46.5	+ 18 25 5.7	. .	F.	
19	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
20	29.982	53.4	47.4	+ 1 14.3	0 16 23.7	0.3	+ 38 37 15.2	− 23.6	Y.	
21	. .	. .	. .	− 4 42.9	0 40 29.3	0.7	+ 38 13 9.2	− 23.2	Y.	
22	29.984	53.2	46.7	− 3 11.8	73 26 58.5	3 14.7	− 34 36 34.0	− 7.7	Y.	
23	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
24	. .	. .	. .	− 0 53.4	46 4 14.0	1 1.4	− 7 11 36.2	− 14.2	F.	
25	30.318	52.8	47.1	− 1 7.8	59 53 58.2	1 41.8	− 21 2 0.8	− 10.5	F.	
26	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
27	30.340	50.6	45.3	− 0 23.4	S. 59 54 43.3	1 42.3	− 21 2 46.4	− 12.4	F.	
28	. .	. .	. .	− 0 8.0	N. 31 9 58.3	36.0	+ 70 4 13.5	− 17.5	F.	
29	. .	. .	. .	+ 1 19.2	S. 32 36 25.4	38.0	+ 6 16 35.9	. .	F.	
30	. .	. .	. .	− 2 57.4	24 17 8.7	26.9	+ 14 36 3.7	− 15.2	F.	
31	. .	. .	. .	− 3 12.9	24 16 53.2	27.0	+ 14 36 19.1	− 15.2	F.	
32	30.360	49.4	44.1	+ 0 48.2	62 25 54.2	1 53.8	− 23 34 8.7	− 13.0	F.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
34	. .	. .	. .	− 2 10.8	80 57 51.2	5 53.5	− 42 10 5.5	− 4.0	F.	
35	. .	. .	. .	+ 0 51.6	43 55 55.4	56.5	− 5 3 12.8	− 14.8	F.	
36	. .	. .	. .	+ 0 53.1	43 55 57.0	56.5	− 5 3 14.3	− 14.8	F.	
37	30.384	57.6	52.5	− 0 56.1	43 4 7.6	54.8	− 4 11 23.2	− 15.1	F.	
38	30.374	57.0	51.9	+ 1 4.3	43 11 8.8	55.1	− 4 18 24.7	− 15.2	F.	
39	. .	. .	. .	+ 3 8.7	74 18 14.3	3 26.1	− 35 28 1.2	− 8.4	F.	
40	. .	. .	. .	+ 0 55.7	40 6 2.3	49.4	− 1 13 12.5	− 15.8	F.	
41	. .	. .	. .	− 0 20.8	S. 59 54 45.0	1 37.2	− 21 2 43.0	− 12.0	F.	
42	. .	. .	. .	− 0 5.8	N. 31 9 58.7	35.5	+ 70 4 13.5	− 18.1	F.	
43	. .	. .	. .	− 0 46.4	S. 63 34 18.7	1 57.6	− 24 42 37.1	− 11.8	F.	
44	30.350	56.0	51.6	+ 2 26.4	40 22 29.8	49.9	− 1 29 40.5	− 15.2	F.	
45	. .	. .	. .	− 2 6.6	25 47 55.5	28.4	+ 13 5 15.4	− 15.9	F.	
46	. .	. .	. .	+ 2 36.3	32 37 39.1	37.4	+ 6 15 22.8	. .	F.	
47	. .	. .	. .	+ 0 14.1	23 55 17.1	26.1	+ 14 57 54.2	− 15.2	F.	
48	30.350	56.0	51.8	+ 0 49.9	62 25 55.2	1 54.4	− 23 34 10.4	− 12.5	F.	
49	. .	. .	. .	+ 2 52.8	S. 40 22 58.6	46.2	− 1 30 5.5	. .	F.	
50	. .	. .	. .	− 2 8.8	N. 0 6 59.0	0.1	+ 39 0 38.4	− 24.3	Y.	
51	30.166	62.2	58.8	− 3 25.5	N. 0 8 15.7	0.1	+ 39 1 55.1	− 24.3	Y.	
52	. .	. .	. .	− 0 32.2	S. 45 3 32.6	57.5	− 6 10 50.9	− 14.5	Y.	
53	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
54	30.102	62.0	57.7	− 4 4.2	35 26 6.0	40.9	+ 3 26 52.3	− 16.6	Y.	
55	. .	. .	. .	− 3 57.2	68 51 12.2	2 27.7	− 30 0 0.7	− 10.1	Y.	
56	30.092	. .	. .	+ 0 26.8	34 50 36.5	40.1	+ 4 2 22.7	− 16.1	Y.	Faint.
57	. .	. .	. .	− 2 7.8	S. 37 33 3.4	44.2	+ 1 19 51.6	− 15.5	Y.	Corr. −0″.84 applied to mean of C, D, E, F.
58	. .	. .	. .	− 2 33.4	N. 49 42 26.7	1 7.8	+ 88 37 13.8	. .	Y.	
59	. .	. .	. .	− 2 40.7	S. 24 12 27.5	25.9	+ 14 40 45.8	. .	Y.	
60	. .	. .	. .	− 1 44.0	80 3 22.4	5 23.7	− 41 15 6.8	− 3.1	Y.	
61	30.228	57.1	49.2	− 1 12.9	80 3 53.5	5 24.7	− 41 15 38.9	− 3.1	Y.	
62	. .	. .	. .	− 0 38.0	S. 78 39 30.4	4 45.2	− 39 50 36.4	− 4.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Oct. 29	1	Lacaille 9292. . .	7.0	3	III–VII.	98 54 58.4	73.3	67.1	70.8	69.2	60.0	66.47	29.593	—0.069	29.532
	2	Lacaille 9351. . .	7.0	3	III–VII.	100 19 59.7	70.8	67.1	71.2	67.4	59.9	66.02	32.115	. .	32.054
	3	Nadir	. .	.	. .	199 59 58.3	71.7	67.7	72.4	67.9	62.3	66.72	30.160	. .	. .
31	4	Moon, S. L. . . .	. .	3	III–VII.	78 35 0.6	8.1	9.2	9.3	7.4	58.7	5.55	27.927	+0.033	27.963
	5	Nadir	. .	.	. . .	200 0 1.3	6.0	7.9	8.5	6.6	58.1	4.73	30.118	. .	. .
	6	Lalande 44922 . .	. .	3	III–VII.	20 15 2.1	10.0	11.7	11.3	13.0	58.7	7.80	27.620	. .	27.645
	7	O. Arg. S. 8 . . .	. .	2	V, VI.	78 50 0.9	7.8	9.0	8.1	10.3	59.7	5.97	34.082	. .	34.118
	8	O. Arg. S. 9 . . .	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	32.625	. .	32.684
	9	Weisse O, 511 . .	. .	1	IX.	54 25 2.2	10.2	10.1	10.2	10.8	57.1	6.77	24.624	. .	24.666
	10	B. A. C. 230 . . .	. .	3	IV–VI.	73 10 1.6	11.0	9.7	10.2	11.2	59.5	7.20	33.707	. .	33.741
	11	Neptune	. .	3	III–VII.	52 40 0.1	7.2	7.9	9.7	8.0	0.4	5.55	26.770	. .	26.802
Nov. 1	12	Moon, S. L. . . .	. .	3	V, VII, IX.	75 5 3.9	16.6	14.2	17.1	14.2	7.1	12.18	36.591	—0.048	36.412
	13	σ^1 Gruis	. .	3	IV–VI.	100 5 0.9	13.4	8.7	11.9	9.7	3.3	7.98	33.418	. .	33.373
	14	σ^2 Gruis	. .	3	V, VII, IX.	" " "	"	"	"	"	"	"	32.319	. .	32.296
	15	B. A. C. 7957. . .	. .	3	IV–VI.	98 40 1.2	15.3	10.4	12.8	12.5	3.1	9.22	31.156	. .	31.110
	16	Lalande 44918 . .	. .	1	V.	20 15 4.8	17.2	15.7	17.1	16.2	8.2	13.20	37.082	. .	37.034
	17	Nadir	. .	.	. .	199 59 59.0	71.1	67.9	72.9	68.2	64.5	67.27	30.156	. .	. .
	18	Weisse O, 21. . .	8.5	3	III–VII.	46 55 4.2	14.1	11.9	13.8	13.6	6.7	10.72	33.130	. .	33.080
	19	48 Piscium	5.5	3	III–VII.	43 10 1.2	14.7	10.8	14.4	12.6	6.0	9.95	31.561	. .	31.510
	20	Weisse O, 571 . .	9.0	3	III–VII.	54 50 1.9	14.4	10.6	14.0	13.0	5.0	9.82	31.381	. .	31.332
	21	i Piscium, (1st *) . .	. .	1	V.	31 55 2.6	17.2	11.3	16.4	14.1	7.0	11.43	34.290	. .	34.242
	22	i Piscium, (2d *) . .	. .	2	III, VII.	" " "	"	"	"	"	"	"	34.217	. .	34.162
	23	Neptune	. .	3	III–VII.	52 40 4.1	17.3	14.0	17.9	14.5	8.9	12.78	25.961	. .	25.912
2	24	Moon, S. L. . . .	. .	2	III, VII.	70 49 58.8	64.8	65.1	64.9	68.1	60.5	63.70	32.196	+0.035	32.234
	25	Weisse O, 511 . .	. .	2	V, VII.	54 30 1.0	7.1	6.9	5.6	10.2	1.0	5.30	34.279	. .	34.317
	26	ν Andromedæ . . .	. .	3	V, VI, VII.	18 29 59.7	64.7	65.2	63.0	68.1	58.8	63.25	27.973	. .	28.006
	27	Anon. $0^h\ 47^m\ 22^s$.	. .	3	VII, VIII, IX.	57 35 4.5	21.4	21.4	20.3	25.0	17.8	18.40	34.306	. .	34.351
	28	Nadir	. .	.	. .	199 59 59.3	62.9	64.1	64.3	63.2	60.2	62.33	30.039	. .	. .
	29	Neptune	. .	3	III–VII.	52 40 0.0	3.8	3.6	5.9	7.2	59.8	3.38	24.407	. .	24.441
3	30	B. A. C. 7957 . .	. .	3	I, III, V.	98 40 0.0	14.8	7.9	11.7	10.7	1.8	7.82	31.092	—0.019	31.084
	31	Lacaille 9292. . .	. .	2	VII, IX.	98 54 59.2	72.8	66.2	69.9	67.8	60.5	66.07	29.372	. .	29.389
	32	Lacaille 9351. . .	. .	3	III–VII.	100 20 4.2	15.8	12.1	14.1	12.6	5.4	10.70	32.064	. .	32.053
	33	Nadir	. .	.	. .	200 0 0.2	13.2	9.0	14.1	10.2	4.8	8.58	30.164	. .	. .
	34	Moon, S. L. . . .	. .	3	III–VII.	66 15 0.7	12.1	9.9	12.5	10.4	4.1	8.28	36.817	. .	36.799
	35	O. Arg. S. 312 . .	9.0	3	III–VII.	89 5 1.2	16.9	10.8	13.0	11.9	5.3	9.85	31.109	. .	31.096
	36	Lacaille 234 . . .	7.2	3	III–VII.	98 5 0.0	16.3	9.7	12.3	10.8	2.8	8.65	33.728	. .	33.717
	37	a^1 Ursæ Minoris . .	. .	1	V.	330 20 1.0	14.5	12.4	14.1	11.4	3.4	9.47	34.548	. .	34.529
	38	Neptune	. .	3	III–VII.	52 45 3.4	16.1	13.2	17.8	13.5	7.7	11.95	33.385	. .	33.365
4	39	O. Arg. S. 22450. .	9.5	2	VII, IX.	83 34 59.5	66.0	65.1	63.5	66.3	58.2	63.10	30.989	+0.041	31.055
	40	Anon. $22^h\ 59^m\ 11^s$.	9.2	2	VI, VII.	67 20 0.2	5.1	5.8	2.9	7.0	0.5	3.58	29.755	. .	29.802
	41	Anon. $23^h\ 21^m\ 29^s$.	8.0	3	IV–VI.	4 24 59.8	64.8	66.0	61.9	67.0	57.0	62.75	31.291	. .	31.328
	42	Anon. $23^h\ 23^m\ 11^s$.	7.5	3	IV–VI.	" " "	"	"	"	"	"	"	23.829	. .	23.866
	43	Nadir	. .	.	. .	200 0 1.2	6.9	7.7	7.7	6.7	0.8	5.17	30.124	. .	. .
	44	B. A. C. 103 . . .	. .	3	III–VII.	92 35 1.3	9.2	7.1	6.0	9.0	0.0	5.43	32.137	. .	32.184
	45	Moon, S. L. . . .	. .	3	III–VII.	61 20 0.2	6.3	7.1	3.5	6.8	59.1	3.83	26.211	. .	26.252
	46	Lacaille 234 . . .	. .	3	IV–VI.	98 5 0.2	7.4	6.5	4.0	8.5	58.2	4.13	33.558	. .	33.601
	47	Neptune	. .	1	IV.	52 45 0.0	4.8	6.5	6.2	8.2	1.0	4.45	32.085	. .	32.122
5	48	Nadir	. .	.	. .	200 0 0.0	11.2	8.8	10.3	9.5	4.5	7.38	30.143	—0.030	. .
	49	Anon. $0^h\ 35^m\ 41^s$.	8.8	3	III–VII.	54 50 2.5	16.1	10.9	14.7	14.3	5.8	10.72	29.281	. .	29.250
	50	Lacaille 238 . . .	. .	3	IV–VI.	83 35 0.0	14.1	8.9	11.6	9.9	2.6	7.85	31.470	. .	31.441
	51	Neptune	. .	3	III–VII.	52 45 3.8	17.8	14.3	16.8	16.2	9.9	13.13	31.258	. .	31.227
	52	Moon, S. L, . . .	. .	3	III–VII.	56 30 3.7	17.1	12.7	16.2	15.7	8.9	12.38	28.072	. .	28.042
	53	Vesta	. .	1	V.	60 55 2.2	16.8	11.8	15.8	13.9	7.3	11.30	29.808	. .	29.778
7	54	Weisse (2) XXII, 1012	. .	1	V.	19 50 1.0	8.6	8.0	10.2	10.1	0.0	6.32	24.240	+0.075	24.315
	55	Anon. $22^h\ 46^m\ 53^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.713	. .	26.786
	56	Anon. $22^h\ 57^m\ 56^s$.	8.0	3	III–VII.	65 5 1.4	8.5	13.0	11.4	9.2	0.7	7.37	30.958	. .	31.034
	57	Nadir	. .	.	. .	200 0 2.3	9.0	7.6	12.5	8.9	3.1	7.23	30.156	. .	. .
	58	Weisse O, 321 . .	. .	3	IV–VI.	63 35 1.7	8.2	7.5	11.0	9.2	1.6	6.53	33.125	. .	33.200
	59	48 Piscium	. .	3	VII, VIII, IX.	43 10 1.4	9.2	7.8	11.8	10.0	1.1	6.88	31.387	. .	31.464
	60	Neptune	. .	3	III–VII.	52 45 1.0	7.8	7.7	12.1	9.8	1.2	6.60	28.920	. .	28.994
	61	B. A. C. 514 . . .	. .	3	III–VII.	29 30 1.4	9.9	8.1	13.0	11.9	2.3	7.77	30.331	. .	30.401
	62	Anon. $1^h\ 43^m\ 2^s$ . .	. .	3	II, III, IV.	45 5 1.4	8.5	8.5	13.5	11.0	1.1	7.33	19.099	. .	19.163
	63	Anon. $1^h\ 43^m\ 1^s$ . .	. .	1	IX.	" " "	"	"	"	"	"	"	40.570	. .	40.647
	64	B. A. C. 728 . . .	6.5	3	III–VII.	48 40 1.4	8.3	7.4	12.8	11.7	1.9	7.25	33.397	+0.075	33.470

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.236	57.0	49.1	+ 0 14.7	S. 78 55 21.1	4 51.8	− 40 6 33.7	− 4.1	Y.	
2	. .	. .	. .	− 1 4.3	80 19 1.7	5 32.2	− 41 30 54.6	− 4.0	Y.	
3	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
4	29.926	56.5	49.6	+ 1 3.8	58 36 9.3	−62 11.2	− 18 40 18.9	. .	F.	
5	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
6	. .	. .	. .	+ 1 13.7	0 16 21.5	0.3	+ 38 37 17.4	− 24.9	F.	
7	. .	. .	. .	− 2 9.1	58 47 56.9	1 36.1	− 19 55 53.8	− 11.2	F.	
8	29.964	55.5	48.2	− 1 24.1	58 48 41.8	1 36.2	− 19 56 38.8	− 11.2	F.	
9	. .	. .	. .	+ 2 46.8	34 27 53.6	40.1	+ 4 25 5.5	− 16.4	F.	Extremely faint.
10	. .	. .	. .	− 1 57.3	53 8 9.9	1 17.9	− 14 15 48.6	− 12.8	F.	
11	30.000	57.0	47.1	+ 1 40.1	32 41 45.6	37.4	+ 6 11 16.2	. .	F.	
12	30.040	56.0	49.5	− 3 20.8	55 1 51.4	−59 37.2	− 15 8 34.9	. .	Y.	
13	. .	. .	. .	− 1 45.8	80 3 22.2	5 21.9	− 41 15 4.9	− 2.7	Y.	
14	30.040	55.8	48.9	− 1 11.9	80 3 56.0	5 22.9	− 41 15 39.7	− 2.7	Y.	
15	. .	. .	. .	− 0 34.8	78 39 34.4	4 43.8	− 39 50 39.0	− 3.6	Y.	
16	. .	. .	. .	− 3 40.6	0 11 32.6	0.2	+ 38 42 6.5	− 25.0	Y.	
17	. .	. .	. .	. .	. . . .	. .	. . . .	. . .	Y.	
18	30.023	55.0	46.7	− 1 36.5	26 53 34.2	29.8	+ 11 59 35.3	− 18.4	Y.	
19	. .	. .	. .	− 0 47.3	23 9 22.6	25.1	+ 15 43 51.5	− 18.6	Y.	
20	30.028	54.7	46.2	− 0 41.8	34 49 28.1	40.9	+ 4 3 30.32	− 16.2	Y.	
21	. .	. .	. .	− 2 13.0	11 52 58.4	12.4	+ 27 0 28.5	− 19.2	Y.	
22	. .	. .	. .	− 2 10.5	11 53 1.0	12.4	+ 27 0 25.9	− 19.2	Y.	
23	30.032	54.0	46.6	+ 2 7.9	32 42 20.7	37.5	+ 6 10 41.0	. .	Y.	
24	29.840	59.0	55.0	− 1 10.0	50 48 53.7	−56 41.5	− 10 58 33.0	. .	Y.	
25	29.822	59.0	54.4	− 2 15.3	S. 34 27 50.0	39.4	+ 4 25 9.9	− 16.3	Y.	
26	. .	. .	. .	+ 1 2.4	N. 1 28 54.3	1.5	+ 40 22 35.1	− 21.2	Y.	
27	29.816	58.8	54.0	− 2 16.4	S. 37 33 2.0	44.1	+ 1 19 53.1	− 15.4	F.	
28	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
29	29.820	56.5	54.8	+ 2 53.9	32 42 57.2	36.7	+ 6 10 5.3	. .	F.	
30	. .	. .	. .	− 0 34.0	78 39 33.8	4 42.8	− 39 50 37.4	− 3.2	Y.	
31	29.995	55.0	49.5	+ 0 19.1	78 55 25.2	4 49.4	− 40 6 35.3	− 3.3	Y.	
32	. .	. .	. .	− 1 4.3	80 19 6.4	5 29.4	− 41 30 57.6	− 3.3	Y.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
34	30.000	54.0	48.8	− 3 3.3	46 11 35.0	−53 23.0	− 6 24 32.8	. .	Y.	
35	30.020	53.5	47.2	− 0 34.3	69 4 35.5	2 32.2	− 30 13 28.4	− 8.8	Y.	
36	. .	. .	. .	− 1 56.5	S. 78 3 12.1	4 30.1	− 39 14 3.0	− 7.1	Y.	
37	. .	. .	. .	− 2 22.0	N. 49 42 12.5	1 9.0	+ 88 37 0.7	− 17.4	Y.	
38	30.008	53.2	47.5	− 1 45.5	S. 32 43 26.4	37.5	+ 6 9 35.3	. .	Y.	
39	30.092	54.5	48.9	− 0 32.1	63 34 30.0	1 57.3	− 24 42 48.1	− 7.9	F.	
40	. .	. .	. .	+ 0 37.5	S. 47 20 9.8	1 3.5	− 8 27 34.0	− 13.2	F.	
41	. .	. .	. .	− 0 41.6	N. 15 35 38.8	16.4	+ 54 29 34.4	− 26.3	F.	
42	30.076	54.0	47.8	+ 3 11.8	N. 15 31 45.4	16.3	+ 54 25 41.0	− 26.2	F.	
43	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
44	. .	. .	. .	− 1 8.4	S. 72 33 57.0	3 5.0	− 33 43 22.7	− 7.5	F.	
45	. .	. .	. .	+ 1 57.3	41 22 1.1	−49 50.4	− 1 38 31.4	. .	F.	
46	. .	. .	. .	− 1 52.9	78 3 11.2	4 31.1	− 39 14 3.1	− 6.8	F.	
47	30.064	53.0	46.1	− 1 6.5	32 43 58.0	37.6	+ 6 9 3.6	. .	F.	Cloudy during this observation and afterwards.
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
49	30.210	53.3	47.8	+ 0 23.5	34 50 34.2	41.0	+ 4 2 24.0	− 16.0	Y.	
50	. .	. .	47.5	− 0 45.2	63 34 22.7	1 58.0	− 24 42 41.5	− 9.8	Y.	
51	. .	. .	. .	− 0 38.4	32 44 34.7	37.8	+ 6 8 26.8	. .	Y.	
52	30.206	52.5	47.2	+ 1 1.3	36 31 13.7	−46 8.9	+ 3 8 34.5	. .	Y.	
53	30.210	52.2	46.9	+ 0 6.9	S. 40 55 18.2	47.5	− 2 2 26.5	. .	Y.	
54	. .	. .	. .	+ 2 57.8	N. 0 6 55.9	0.1	+ 39 0 35.2	− 25.7	F.	
55	30.212	54.0	47.6	+ 1 40.6	N. 0 8 13.1	0.1	+ 39 1 52.5	− 25.6	F.	
56	. .	. .	. .	− 0 32.4	S. 45 4 35.0	59.1	− 6 11 54.8	. .	F.	
57	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
58	. .	. .	. .	− 1 40.3	43 33 26.2	56.0	− 4 40 43.0	− 13.7	F.	
59	. .	. .	. .	− 0 45.9	23 9 21.0	25.2	+ 15 43 53.0	− 14.1	F.	
60	30.216	52.5	44.6	+ 0 31.5	32 45 38.1	38.0	+ 6 7 23.2	. .	F.	
61	. .	. .	. .	− 0 12.6	9 29 55.2	9.9	+ 29 23 34.1	− 17.1	F.	
62	. .	. .	. .	+ 5 38.5	25 10 45.9	27.9	+ 13 42 25.5	− 15.2	F.	
63	. .	. .	. .	− 5 34.2	24 59 33.1	27.7	+ 13 53 38.5	− 15.2	F.	
64	30.222	52.0	42.9	− 1 48.8	S. 28 38 18.5	32.5	+ 10 14 48.3	− 13.4	F.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1870. Nov. 7	1	Moon, S. L.	. .	3	I, II, III.	47 25 0.4	5.5	6.5	11.0	9.1	1.1	5.60	26.659	+0.075	26.946
	2	Moon, N. L.	. .	2	VIII, IX.	46 55 0.8	8.4	8.0	11.8	11.0	0.5	6.75	26.990	. .	26.824
8	3	Weisse O, 321	9.0	3	III–VII.	63 35 0.8	11.8	7.9	13.8	11.2	3.9	8.23	33.017	−0.027	32.991
	4	Weisse O, 571	9.0	3	III–VII.	54 50 0.8	13.0	9.1	13.8	11.2	4.1	8.67	31.313	. .	31.285
	5	Weisse I, 188	. .	3	III–VII.	45 50 1.5	12.2	9.8	13.8	12.2	4.3	8.97	34.218	. .	34.189
	6	Neptune	. .	3	III–VII.	52 45 1.2	12.1	9.8	13.9	12.2	5.2	9.07	28.075	. .	28.047
	7	Weisse I, 753	7.5	3	I, III, V.	70 15 1.3	15.5	10.9	16.2	13.5	6.4	10.63	34.815	. .	33.785
	8	χ Ceti	5.5	2	VII, IX.	" " "	"	"	"	"	"	"	35.912	. .	35.901
	9	Nadir	. .	.	. . .	199 59 56.4	68.8	64.3	70.5	66.3	62.1	64.73	30.054	. .	. .
	10	B. A. C. 728	. .	3	III–VII.	48 40 0.3	10.3	6.9	12.0	11.8	4.8	7.68	33.515	. .	33.486
	11	Moon, N. L.	. .	3	V, VII, IX.	43 5 1.2	13.5	10.2	14.0	12.0	4.6	9.25	32.336	. .	32.221
9	12	O. Arg. S. 21452.	7.5	2	VII, IX.	83 35 1.5	7.1	5.0	10.8	7.8	1.0	5.53	30.139	+0.076	30.239
	13	Anon. $22^h 40^m 30^s$	. .	2	VI, VII.	1 0 0.5	5.0	5.6	11.0	8.2	0.6	5.15	30.442	. .	30.508
	14	Anon. $22^h 40^m 30^s$	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	36.016	. .	36.042
	15	Anon. $0^h 28^m 13^s$	. .	2	IV, VI.	57 50 1.0	11.0	10.0	15.9	10.6	3.9	8.73	36.644	. .	36.720
	16	Weisse O, 786	. .	2	VIII, IX.	48 40 1.0	7.1	6.3	11.6	9.0	0.9	5.98	29.440	. .	29.521
	17	Neptune	. .	3	IV–VI.	52 45 0.4	5.2	6.0	11.1	8.0	0.0	5.12	26.835	. .	26.911
	18	Nadir	. .	.	. . .	200 0 0.0	5.3	4.4	10.2	4.0	0.0	3.98	30.051	. .	. .
	19	Rumker 875	8.0	3	IV–VI.	46 25 0.2	8.6	7.3	11.6	9.0	0.0	6.12	28.822	. .	28.897
	20	O. Arg. S. 2488	9.0	2	VI, VII.	81 15 2.8	11.9	9.8	16.0	9.2	1.3	8.50	34.741	. .	34.827
	21	O. Arg. S. 2939	. .	3	IV–VI.	81 20 3.8	12.3	9.9	16.5	9.9	1.0	8.90	29.813	. .	29.890
	22	Anon. $4^h 17^m 1^s$	. .	3	IV–VI.	42 20 4.0	13.2	11.9	18.8	12.8	2.6	10.55	33.873	. .	33.948
	23	Moon, N. L.	. .	3	III–VII.	39 50 5.0	13.4	12.0	19.2	14.4	4.1	11.35	27.700	. .	27.773
10	24	Anon. $0^h 35^m 15^s$	. .	3	V, VII, IX.	57 49 57.3	69.9	64.8	75.1	65.1	58.4	65.10	34.908	−0.022	34.893
	25	Neptune	. .	3	IV–VI.	52 45 2.4	16.4	12.0	22.8	12.9	6.2	12.12	26.246	. .	26.224
	26	Nadir	. .	.	. . .	199 59 57.7	73.9	67.1	79.8	66.1	62.9	67.92	30.151	. .	. .
	27	Moon, N. L.	. .	3	III–VII.	37 29 56.7	73.4	67.9	78.5	66.4	58.9	66.97	30.033	. .	30.255
	28	Lacaille 1918.	7.0	3	III–VII.	86 9 58.8	74.1	70.2	81.9	67.9	60.8	68.95	33.149	. .	33.132
	29	Jupiter, N. L.	. .	2	I, IX.	36 4 58.8	73.8	68.8	81.0	67.5	60.3	68.53	32.720	. .	32.677
	30	Jupiter, S. L..	. .	3	III–VII.	" " "	"	"	"	"	"	"	31.087	. .	31.061
	31	O. Arg. S. 4474	7.7	3	IV–VI.	87 40 2.2	18.4	12.7	22.8	10.5	3.1	11.62	34.972	. .	34.952
12	32	B. A. C. 77	6.5	3	III–VII.	90 40 0.4	12.8	7.0	13.8	8.8	2.9	7.62	37.533	−0.020	37.519
	33	Weisse O, 306	8.0	3	V, VII, IX.	67 59 55.7	68.2	63.9	70.8	66.7	59.4	64.12	36.499	. .	36.490
	34	B. A. C. 160	6.5	3	III–VII.	84 25 4.1	14.9	12.8	18.6	13.7	7.8	11.98	39.076	. .	39.061
	35	Anon. $0^h 35^m 16^s$	9.0	3	III–VII.	57 50 1.3	12.7	7.5	15.8	10.8	5.9	9.00	34.956	. .	34.936
	36	61 Piscium	6.5	3	III–VII.	38 40 0.0	12.7	8.2	14.7	11.2	4.7	8.58	30.036	. .	30.012
	37	Anon. $0^h 47^m 21^s$	9.5	3	V, VII, IX.	57 35 2.1	16.8	11.8	18.2	15.8	9.1	12.30	33.907	. .	33.895
	38	B. A. C. 306	6.0	3	III–VII.	93 5 5.1	18.8	12.1	21.7	14.2	8.4	13.38	31.988	. .	31.974
	39	Neptune	. .	3	III–VII.	52 50 3.2	6.4	11.9	19.9	13.7	8.6	10.62	33.790	. .	33.769
	40	Nadir	. .	.	. .	199 59 55.1	68.2	62.4	71.0	64.8	59.6	63.52	30.018	. .	. .
15	41	B. A. C. 77	. .	3	III–VII.	90 35 4.5	20.1	13.1	24.1	12.7	6.4	13.48	28.276	−0.038	28.244
	42	Weisse O, 306	8.3	2	IV, VI.	67 54 59.1	73.4	68.9	78.7	68.2	63.7	68.67	27.216	. .	27.179
	43	B. A. C. 160	. .	3	III–VII.	84 20 0.1	14.8	10.9	19.4	10.7	3.5	9.90	29.547	. .	29.514
	44	O. Arg. S. 388	. .	3	III–VII.	86 10 0.0	15.1	11.2	21.1	10.7	3.1	10.20	39.381	. .	39.348
	45	61 Piscium	. .	3	III–VII.	38 40 2.2	16.3	12.1	20.9	12.2	4.9	11.43	30.181	. .	30.139
	46	Lacaille 241	7.7	3	III–VII.	84 20 4.4	20.4	15.7	24.2	15.4	8.3	14.73	29.480	. .	29.447
	47	B. A. C. 306	. .	3	III–VII.	93 5 2.7	18.7	12.1	22.7	11.4	5.9	12.25	32.122	. .	32.090
	48	Neptune	. .	3	III–VII.	52 50 1.1	15.7	11.6	21.0	10.2	4.6	10.70	31.161	. .	31.122
	49	Nadir	. .	.	. .	199 59 55.4	71.1	64.9	77.0	65.1	59.9	65.57	30.092	. .	. .
17	50	B. A. C. 167	. .	3	III–VII.	56 30 0.0	14.1	8.6	18.4	11.1	4.1	9.38	33.870	−0.013	33.857
	51	Weisse O, 648	. .	3	III–VII.	57 50 3.2	16.1	10.9	20.9	13.8	6.0	11.82	36.243	. .	36.230
	52	Weisse O, 677	8.0	3	V, VII, IX.	64 0 0.8	14.3	9.1	18.6	10.2	3.2	9.37	30.002	. .	29.998
	53	Anon. $0^h 47^m 17^s$	9.5	1	IX.	57 35 1.4	12.6	7.7	15.5	10.4	3.4	8.50	34.278	. .	34.279
	54	Lalande 1966.	7.5	3	IV–VI.	358 5 2.4	16.4	12.8	21.6	12.7	3.7	11.60	34.917	. .	34.899
	55	Neptune	. .	3	III–VII.	52 50 0.8	14.8	10.1	19.2	11.6	4.0	10.08	29.319	. .	29.305
	56	Lalande 2751.	. .	3	IV–VI.	350 40 0.9	15.1	12.0	20.9	12.4	3.9	10.87	35.481	. .	35.461
	57	B. A. C. 472	6.8	3	III–VII.	58 35 2.8	18.1	13.4	22.4	15.6	9.8	13.68	29.783	. .	29.770
	58	Groombridge 150	6.2	3	IV–VI.	355 40 3.7	17.3	13.1	20.8	13.4	5.3	12.28	28.146	. .	28.127
	59	Nadir	. .	.	. .	199 59 56.3	71.1	65.0	76.8	65.7	71.3	66.03	30.079	. .	. .
18	60	Anon. $22^h 40^m 30^s$	. .	2	VI, VII.	1 0 2.2	11.5	10.1	16.9	12.3	2.1	9.18	30.475	+0.094	30.460
	61	Anon. $22^h 40^m 30^s$	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	36.192	. .	36.238
	62	Nadir	. .	.	. .	200 0 2.1	10.8	7.9	15.5	9.1	2.5	7.98	30.161	. .	. .
	63	Groombridge 34.	8.0	3	III–VII.	15 40 3.6	12.5	11.0	16.0	11.4	2.1	9.43	37.530	. .	37.615
	64	B. A. C. 167	7.0	3	III–VII.	56 30 0.9	9.8	6.8	15.1	9.0	1.3	7.15	33.635	+0.094	33.728

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 35.6	S. 27 26 41.2	−24 9.5	+ 12 5 53.1	. .	F.	Correction for defective illumination = 0″.0.
2	30.226	51.0	42.3	+ 1 39.4	26 56 46.1	−23 45.6			F.	
3	29.986	55.5	49.6	− 1 33.7	43 33 34.5	55.4	− 4 40 50.6	− 14.0	Y.	
4	29.986	55.4	49.3	− 0 40.2	34 49 28.4	40.6	+ 4 3 30.3	− 15.9	Y.	
5	. .	. .	. .	− 2 11.3	25 47 57.7	28.2	+ 13 5 13.4	− 16.4	Y.	Faint.
6	29.970	55.1	49.2	+ 1 1.1	32 46 10.2	37.4	+ 6 6 51.7	. .	Y.	
7	. .	. .	. .	− 1 58.7	50 13 12.0	1 9.9	− 11 20 42.7	− 11.9	Y.	Micrometer mean diminished by one revolution. V. January 11.
8	29.960	55.2	48.8	− 3 5.1	50 12 5.6	1 9.9	− 11 19 36.2	− 11.9	Y.	
9	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
10	29.954	55.1	48.1	− 1 49.3	28 38 18.4	31.9	+ 10 14 49.0	− 13.4	Y.	
11	29.910	54.5	48.2	− 1 16.0	23 4 53.2	− 5 48.5	+ 15 55 34.5	. .	Y.	Observed with N. wire.
12	29.906	58.0	53.1	− 0 7.5	S. 63 34 58.0	1 55.6	− 24 43 14.4	− 5.8	F.	
13	29.988	66.0	48.1	− 0 15.9	N. 19 0 10.8	20.1	+ 57 54 10.1	− 28.6	F.	
14	. .	. .	. .	− 3 9.5	N. 19 3 4.3	20.2	+ 57 57 3.7	− 28.6	F.	
15	. .	. .	. .	− 3 30.8	S. 37 46 37.9	45.5	+ 1 6 15.9	− 15.3	F.	
16	. .	. .	. .	+ 0 15.0	28 40 21.0	32.2	+ 10 12 46.1	− 17.0	F.	Very faint.
17	30.046	52.0	44.9	+ 1 36.7	32 46 41.8	37.8	+ 6 6 19.7	. .	F.	
18	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
19	30.094	49.0	41.0	+ 0 34.5	26 25 40.6	29.6	+ 12 27 29.0	− 10.2	F.	
20	. .	. .	. .	− 2 31.3	61 12 37.2	1 48.0	− 22 20 45.9	− 10.6	F.	
21	. .	. .	. .	+ 0 3.4	61 20 12.3	1 48.6	− 22 28 21.7	− 10.3	F.	
22	. .	. .	. .	− 2 3.8	22 18 6.8	24.4	+ 16 35 8.0	− 6.3	F.	
23	30.112	48.0	40.6	+ 1 9.7	19 51 21.1	− 3 3.4	+ 19 5 21.6	. .	F.	
24	30.250	44.2	35.9	− 2 33.4	37 47 31.7	46.9	+ 1 5 20.7	− 15.2	Y.	
25	30.244	43.1	35.4	+ 1 58.2	32 47 10.3	38.8	+ 6 5 50.2	. .	Y.	
26	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
27	30.224	40.2	32.7	− 0 8.0	17 29 59.1	− 59.7	+ 21 24 40.0	. .	Y.	N. wire.
28	. .	. .	. .	− 1 38.2	66 8 30.8	2 16.8	− 27 17 8.4	− 8.6	Y.	
29	. .	. .	. .	− 1 23.9	16 3 44.6	17.0	+ 22 49 12.3	. .	Y.	
30	30.228	40.0	32.3	− 0 33.2	16 4 35.3	17.0				
31	. .	. .	. .	− 2 35.2	67 37 36.4	2 27.0	− 28 46 24.1	− 8.6	Y.	
32	29.854	49.0	42.2	− 3 55.9	70 36 11.7	2 45.9	− 31 45 18.4	− 6.6	Y.	
33	. .	. .	. .	− 3 23.6	47 36 40.5	1 5.2	− 9 4 6.5	− 12.7	Y.	
34	. .	. .	. .	− 4 44.3	64 20 27.6	2 2.1	− 25 28 50.5	− 8.4	Y.	
35	29.850	48.8	41.7	− 2 34.8	37 47 34.2	45.7	+ 1 5 19.3	− 15.0	Y.	
36	. .	. .	. .	− 0 0.4	18 40 8.2	19.9	+ 20 13 11.1	− 19.1	Y.	
37	. .	. .	. .	− 2 2.1	37 33 10.2	45.3	+ 1 19 43.7	− 15.0	Y.	Very faint.
38	29.850	48.3	41.1	− 1 1.8	73 4 11.5	3 11.6	− 34 13 43.9	− 6.6	Y.	
39	. .	. .	40.4	− 1 58.2	32 48 12.5	37.9	+ 6 4 48.9	. .	Y.	
40	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
41	29.778	42.7	34.5	+ 0 55.0	70 36 8.4	2 48.1	− 31 5 17.3	− 6.1	Y.	
42	. .	. .	. .	+ 1 28.3	47 56 37.0	1 6.1	− 9 4 3.8	− 12.5	Y.	Faint.
43	. .	. .	. .	+ 0 15.2	64 20 25.1	2 3.8	− 25 28 49.6	− 8.0	Y.	
44	. .	. .	. .	− 4 53.4	66 5 16.8	2 14.0	− 27 13 51.6	− 7.6	Y.	
45	. .	. .	. .	− 0 4.4	18 40 7.0	20.2	+ 20 13 12.0	− 19.3	Y.	
46	29.774	42.0	33.7	+ 0 17.3	64 20 32.0	2 3.9	− 25 28 56.7	− 8.1	Y.	
47	. .	. .	. .	− 1 5.5	73 4 6.8	3 14.2	− 34 13 41.7	− 6.1	Y.	
48	29.780	41.3	33.4	− 0 35.2	32 49 35.5	37.6	+ 6 3 26.2	. .	Y.	
49	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
50	. .	. .	. .	− 2 0.9	36 28 8.5	44.6	+ 2 24 46.2	− 15.3	Y.	
51	. .	. .	. .	− 3 15.4	37 46 56.4	46.8	+ 1 5 56.1	− 14.8	Y.	
52	30.118	42.1	34.8	+ 0 0.1	44 0 9.4	58.2	− 5 7 28.4	− 13.2	Y.	
53	. .	. .	. .	− 2 14.2	S. 37 32 54.3	46.4	+ 1 19 58.5	− 14.7	Y.	Very faint.
54	. .	. .	. .	− 2 33.6	N. 21 57 22.0	24.3	+ 60 51 25.6	− 23.2	Y.	
55	30.110	42.0	34.6	+ 0 21.8	S. 32 50 31.8	38.8	+ 6 2 28.6	. .	Y.	
56	. .	. .	. .	− 2 51.2	N. 29 22 40.4	34.0	+ 68 16 53.6	− 21.6	Y.	
57	. .	. .	. .	+ 0 7.2	S. 38 35 20.9	48.2	+ 0 17 30.2	− 13.6	Y.	
58	30.104	42.0	34.4	+ 0 58.6	N. 24 18 49.1	27.3	+ 63 12 55.6	− 20.5	Y.	
59	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
60	30.034	43.0	32.6	− 0 17.5	19 0 8.4	20.8	+ 57 54 8.4	− 29.5	F.	
61	. .	. .	. .	− 3 15.6	19 3 6.5	20.9	+ 57 57 6.6	− 29.5	F.	
62	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
63	30.028	41.0	31.9	− 3 58.9	N. 4 23 49.5	4.7	+ 43 17 33.4	− 25.0	F.	
64	. .	. .	. .	− 1 56.9	S. 36 28 10.3	44.7	+ 2 24 44.2	− 15.2	F.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Nov. 18	1	Weisse O, 648 . .	. .	3	IV–VI.	57 45 3.7	20.1	19.0	25.0	21.0	11.9	16.78	26.710	+0.094	26.804
	2	Weisse O, 706 . .	. .	2	VI, IX.	55 30 2.9	12.8	11.1	19.0	14.0	3.0	10.47	29.387	. .	29.488
	3	Lacaille 241 . . .	. .	2	VII, IX.	84 20 3.7	14.4	11.2	17.5	12.8	2.8	10.40	29.224	. .	29.345
	4	Lalande 1966. . .	. .	3	III–VII.	358 5 2.5	12.4	10.9	18.5	11.2	0.7	9.37	34.667	. .	34.744
	5	Neptune	. .	3	III–VII.	52 50 1.7	11.0	9.5	16.0	10.0	1.8	8.33	28.336	. .	28.429
	6	Lalande 2751. . .	. .	3	IV–VI.	350 40 1.6	10.8	9.7	16.0	10.5	0.3	8.15	35.282	. .	35.369
	7	Lalande 2966. . .	. .	3	IV–VI.	352 40 1.6	10.5	9.0	15.0	10.0	0.0	7.68	33.461	. .	33.548
	8	12-year Cat. 150. .	6.0	3	IV–VI.	355 40 0.1	10.0	8.2	13.9	8.1	58.8	6.52	27.738	. .	27.826
	9	Weisse I, 1075 . .	. .	3	IV–VI.	60 5 0.9	10.7	9.5	16.1	11.0	2.2	8.40	28.078	. .	28.172
	10	Weisse II, 147 . .	. .	3	III–VII.	57 45 3.7	18.0	14.7	22.0	17.5	7.5	13.90	32.075	. .	32.169
	11	Weisse II, 464 . .	. .	3	III–VII.	52 40 1.0	13.4	9.1	17.4	12.0	1.0	8.98	36.257	. .	36.350
	12	Weisse II, 718 . .	6.0	3	IV–VI.	28 40 1.9	12.0	9.2	18.2	12.5	1.1	9.15	35.351	. .	35.443
	13	Lalande 5490. . .	. .	3	IV–VI.	357 40 1.3	12.5	10.8	17.1	10.8	58.5	8.50	28.487	. .	28.576
19	14	Weisse XXIII, 1183	7.5	3	III–VII.	60 5 2.2	15.0	11.9	21.2	11.8	5.7	11.30	28.377	−0.020	28.357
	15	Groombridge 34. .	. .	3	III–VII.	15 35 1.0	15.8	10.0	18.5	9.8	2.9	9.67	28.120	. .	28.091
	16	B. A. C. 103 . . .	5.5	3	III–VII.	92 35 0.9	14.7	9.0	19.1	9.2	2.0	9.15	32.437	. .	32.423
	17	ε Andromedæ . . .	4.0	3	III–VII.	30 15 0.1	15.1	9.5	18.8	9.7	2.2	9.23	26.899	. .	26.874
	18	Weisse O, 677 . .	8.3	3	III–VII.	60 0 4.9	19.2	14.1	25.0	13.7	6.9	13.97	30.208	. .	30.189
	19	Weisse O, 770 . .	9.5	3	V, VII, IX.	55 35 1.8	17.4	13.1	23.8	13.3	4.9	12.38	32.788	. .	32.775
	20	Lalande 1966. . .	. .	3	IV–VI.	358 5 1.1	16.1	11.9	22.2	11.5	2.2	10.83	34.920	. .	34.895
	21	Neptune	. .	3	III–VII.	52 50 3.7	20.2	15.7	24.2	14.6	7.5	14.32	27.757	. .	27.736
	22	A Cassiopeæ . . .	. .	3	IV–VI.	349 20 0.0	14.3	11.7	20.2	9.5	0.8	9.42	33.769	. .	33.741
	23	B. A. C. 472 . . .	7.0	3	III–VII.	58 35 3.4	20.5	14.6	24.1	15.6	9.4	14.60	29.829	. .	29.809
	24	12-year Cat. 150. .	. .	3	IV–VI.	355 39 59.2	75.1	70.6	78.4	69.7	60.1	68.85	28.043	. .	28.017
	25	Nadir	. .	.	. .	199 59 54.8	70.7	64.2	75.7	63.9	58.6	64.65	30.041	. .	. .
23	26	Lacaille 241 . . .	. .	3	VI,VII,VIII.	84 20 0.0	9.6	9.0	14.0	9.8	59.0	6.90	29.097	+0.042	29.154
	27	Neptune	. .	3	III–VII.	52 55 1.3	10.5	8.6	13.9	9.7	0.1	7.35	33.835	. .	33.876
	28	Nadir	. .	.	. .	200 0 1.3	10.9	7.0	15.3	8.8	1.3	7.43	30.195	. .	. .
24	29	11 Piscium	. .	3	III–VII.	61 25 1.1	16.9	10.2	17.1	13.2	6.5	10.83	34.406	−0.003	34.403
	30	Lacaille 9597. . .	8.3	3	V, VII, IX.	97 40 0.8	17.1	10.1	18.2	12.9	5.3	10.73	26.862	. .	26.884
	31	Nadir	. .	.	. .	199 59 57.2	73.1	65.9	76.5	67.4	61.9	67.00	30.101	. .	. .
	32	Weisse I, 578 . .	8.5	3	IV–VI.	43 55 2.0	16.8	11.5	19.9	12.6	6.2	11.50	29.955	. .	29.951
26	33	Weisse O, 306 . .	8.2	3	III–VII.	67 55 0.2	13.9	9.0	18.7	11.6	6.2	9.93	27.151	−0.036	27.117
	34	O. Arg. S. 312 . .	9.0	3	III–VII.	89 5 0.8	16.0	9.3	18.5	11.8	6.2	10.43	31.035	. .	31.005
	35	61 Piscium	. .	3	III–VII.	38 40 1.2	16.7	11.2	19.0	14.7	7.1	11.65	30.238	. .	30.198
	36	ε Piscium	. .	3	V, VII, IX.	51 45 1.3	15.4	9.5	18.8	13.8	7.1	10.98	37.279	. .	37.248
	37	a^1 Ursæ Minoris . .	. .	1	V.	330 19 58.7	72.4	70.2	75.0	70.4	62.1	68.13	34.792	. .	34.756
	38	Neptune	. .	3	III–VII.	52 55 4.1	16.7	12.1	20.2	13.4	8.4	12.48	31.961	. .	31.924
	39	Anon. 1^h 26^m 10^s .	9.0	3	III–VII.	43 50 1.9	16.8	11.2	19.8	13.2	8.0	11.82	28.007	. .	27.968
	40	Weisse (2) I, 575. .	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	36.554	. .	36.524
	41	Nadir	. .	.	. .	199 59 58.2	72.1	66.8	76.1	68.3	63.9	67.57	30.154	. .	. .
	42	Weisse I, 1075 . .	. .	3	III–VII.	60 5 0.3	11.7	8.9	17.0	10.8	4.1	8.80	28.189	. .	28.153
	43	Lalande 3987. . .	7.5	3	IV–VI.	351 50 0.0	13.5	10.7	18.0	11.4	4.0	9.60	31.447	. .	31.404
	44	Weisse II, 147 . .	6.0	3	III–VII.	57 45 oblit.	20.2	14.1	23.2	18.3	11.4	15.39	32.234	. .	32.198
	45	Weisse II, 464 . .	6.5	3	III–VII.	52 35 0.3	12.7	9.3	17.4	11.7	4.9	9.38	26.709	. .	26.672
	46	Weisse II, 718 . .	7.5	3	IV–VI.	28 35 2.9	16.7	12.3	20.8	14.8	7.9	12.57	26.004	. .	25.966
29	47	Moon, S. L. . . .	. .	3	III–VII.	72 30 1.4	13.4	6.9	15.4	11.2	8.9	9.53	26.620	−0.041	26.581
	48	Nadir	. .	.	. .	199 59 58.9	69.0	64.2	71.4	66.7	65.2	65.90	30.103	. .	. .
	49	ω Piscium	. .	3	III–VII.	52 44 59.2	66.5	65.0	70.1	68.1	64.4	65.55	31.908	. .	31.866
	50	ν Andromedæ . . .	. .	3	III–VII.	18 30 3.1	14.1	10.0	15.6	14.2	8.0	10.83	28.415	. .	28.366
Dec. 1	51	Groombridge 34. .	8.5	3	IV–VI.	15 35 2.4	19.1	11.9	22.4	12.4	6.0	12.37	28.284	−0.035	28.246
	52	Moon, S. L. . . .	. .	3	III–VII.	63 10 4.1	19.7	11.8	23.9	13.2	8.8	13.58	36.308	. .	36.274
	53	ε Piscium	. .	3	III–VII.	51 40 0.8	16.2	9.8	22.2	11.5	6.3	11.13	27.699	. .	27.663
	54	Neptune	. .	3	III–VII.	52 55 0.8	16.4	11.2	22.1	9.9	6.2	11.10	28.663	. .	28.627
	55	Anon. 1^h 13^m 55^s .	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	27.577	. .	27.551
	56	Lalande 2966. . .	8.0	3	IV–VI.	352 40 0.4	16.9	12.2	22.7	10.8	4.1	11.18	33.869	. .	33.827
	57	Weisse I, 578. . .	8.7	3	V, VII, IX.	43 55 0.0	15.4	9.2	21.1	8.4	4.5	9.77	29.721	. .	29.688
	58	Nadir	. .	.	. .	199 59 53.8	68.8	63.0	75.2	61.4	58.9	63.52	30.022	. .	. .
	59	Lalande 3987. . .	7.5	3	IV–VI.	351 50 2.2	18.4	14.7	24.1	13.6	6.1	13.18	31.578	. .	31.536
6	60	Lalande 5490. . .	. .	1	V.	357 40 1.5	16.8	13.2	22.0	12.5	oblit.	11.89	28.945	−0.052	28.893
	61	12 Eridani	. .	3	IV–VI.	88 25 2.3	17.3	10.4	21.8	11.2	6.9	11.65	37.715	. .	37.665
	62	Carrington 491 . .	. .	3	IV–VI.	332 40 0.5	14.9	12.7	20.4	11.6	5.1	10.87	29.228	. .	29.174
	63	B. A. C. 1111 . .	6.0	3	IV–VI.	356 4 57.6	74.1	70.2	77.0	67.9	61.6	68.07	27.749	. .	27.691
	64	Lalande 6888. . .	8.5	3	IV–VI.	17 50 2.9	18.3	13.9	22.9	12.7	5.2	12.65	31.086	−0.052	31.031

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 40.0	S. 37 46 56.8	46.9	+ 1 5 55.6	− 14.7	F.	
2	. .	. .	. .	+ 0 16.0	35 30 26.5	43.2	+ 3 22 29.6	− 15.3	F.	
3	30.036	40.8	31.8	+ 0 20.5	S. 64 20 30.9	2 5.5	− 25 28 57.2	− 7.6	F.	
4	. .	. .	. .	− 2 28.7	N. 21 57 19.4	24.4	+ 60 51 23.0	− 23.7	F.	
5	. .	. .	. .	+ 0 49.2	S. 32 50 57.5	38.9	+ 6 2 2.8	. .	F.	
6	. .	. .	. .	− 2 48.3	N. 29 22 40.2	34.1	+ 68 16 53.5	− 22.0	F.	
7	. .	. .	. .	− 1 51.2	27 21 43.6	31.3	+ 66 15 54.2	− 21.3	F.	
8	30.028	40.0	31.8	+ 1 8.1	N. 24 18 45.4	27.4	+ 63 12 52.0	− 20.7	F.	
9	. .	. .	. .	+ 0 57.2	S. 40 6 5.6	51.0	− 1 13 17.4	− 12.3	F.	
10	30.024	39.5	31.5	− 1 8.0	37 44 5.9	46.9	+ 1 8 46.5	− 12.3	F.	
11	. .	. .	. .	− 3 19.2	32 36 49.8	38.8	+ 6 16 10.7	− 12.4	F.	
12	. .	. .	. .	− 2 50.7	S. 8 37 18.5	9.2	+ 30 16 11.6	− 14.5	F.	
13	30.024	39.0	30.8	+ 0 44.6	N. 22 19 6.9	24.9	+ 61 13 11.1	− 13.0	F.	
14	30.060	38.0	31.4	+ 0 51.4	S. 40 6 2.7	51.1	− 1 13 14.6	− 14.5	Y.	
15	. .	. .	. .	+ 0 59.8	N. 4 23 50.6	4.7	+ 43 17 34.5	− 25.0	Y.	
16	. .	. .	. .	− 1 5.9	S. 72 34 3.2	3 10.7	− 33 43 34.6	− 4.9	Y.	
17	. .	. .	. .	+ 1 37.8	10 16 47.0	11.0	+ 28 36 41.2	− 21.4	Y.	
18	. .	. .	. .	− 0 5.9	44 0 8.0	58.6	− 5 7 27.4	− 12.9	Y.	
19	30.074	37.5	31.5	− 1 27.0	S. 35 33 45.4	43.4	+ 3 19 10.5	− 15.1	Y.	
20	. .	. .	. .	− 2 33.5	N. 21 57 22.6	24.5	+ 60 51 26.4	− 23.9	Y.	
21	. .	. .	. .	+ 1 10.9	S. 32 51 25.2	39.0	+ 6 1 35.0	. .	Y.	
22	30.070	37.2	31.6	− 1 57.2	N. 30 41 47.8	36.0	+ 69 36 3.1	− 22.5	Y.	
23	. .	. .	. .	+ 0 6.0	S. 38 35 20.6	48.4	+ 0 17 30.3	− 13.4	Y.	
24	30.078	37.0	31.3	+ 1 2.1	N. 24 18 49.1	27.4	+ 63 12 55.8	− 20.8	Y.	
25	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
26	29.956	41.0	37.9	+ 0 26.5	S. 64 20 33.4	2 3.6	− 25 28 57.7	− 6.8	F.	
27	. .	. .	. .	− 2 1.5	32 53 5.8	38.4	+ 5 59 55.0	. .	F.	
28	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	Cloudy.
29	30.144	43.0	37.4	− 2 18.0	41 22 52.8	52.9	− 2 30 6.4	− 14.0	Y.	
30	30.158	42.5	36.0	+ 1 37.5	77 41 48.2	4 30.2	− 38 52 39.2	− 2.1	Y.	
31	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
32	30.164	40.8	33.0	+ 0 1.5	23 55 13.0	26.9	+ 14 57 59.3	− 16.1	Y.	
33	29.840	45.2	39.5	+ 1 30.2	47 56 40.2	1 5.6	− 9 4 6.5	− 11.5	Y.	
34	. .	. .	. .	− 0 31.5	69 4 39.0	2 33.9	− 30 13 33.6	− 5.0	Y.	
35	29.835	45.0	38.3	− 0 6.2	18 40 5.4	21.2	+ 20 13 12.6	− 19.5	Y.	
36	. .	. .	. .	− 3 47.4	S. 31 41 23.6	36.6	+ 7 11 39.0	− 15.7	Y.	
37	. .	. .	. .	− 2 29.1	N. 49 42 21.0	1 9.9	+ 88 37 10.1	− 25.0	Y.	
38	29.832	44.7	38.3	− 1 0.3	S. 32 54 12.2	38.2	+ 5 58 48.8	. .	Y.	
39	. .	. .	. .	+ 1 3.6	23 51 15.4	26.2	+ 15 1 57.6	− 16.5	Y.	
40	. .	. .	. .	− 3 24.7	23 46 47.2	26.2	+ 15 6 25.9	− 16.5	Y.	
41	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
42	29.840	44.3	37.8	+ 0 57.8	S. 40 6 6.6	50.0	− 1 13 17.4	− 11.6	Y.	
43	. .	. .	. .	− 0 44.0	N. 28 10 34.4	31.8	+ 67 4 45.5	− 20.4	Y.	Corr. −1″.36 applied to mean of C, D, E, F.
44	. .	. .	. .	− 1 8.9	S. 37 44 6.5	46.0	+ 1 8 46.8	− 11.8	Y.	
45	. .	. .	. .	+ 1 44.2	32 36 53.5	38.0	+ 6 16 7.7	− 12.0	Y.	
46	29.836	44.2	37.4	+ 2 6.2	8 37 18.8	9.0	+ 30 16 11.4	− 15.3	Y.	
47	30.028	57.0	56.2	+ 1 47.0	52 31 56.5	−58 23.6	− 12 39 53.7	. .	Y.	
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
49	30.032	57.0	55.0	− 0 58.5	S. 32 44 7.1	37.1	+ 6 8 55.1	− 16.4	Y.	
50	30.048	56.0	51.2	+ 0 51.2	N. 1 28 58.0	1.5	+ 40 22 38.8	− 24.2	Y.	
51	29.976	45.2	37.3	+ 0 54.9	N. 4 23 52.7	4.6	+ 43 17 36.6	− 26.2	Y.	
52	29.970	45.0	36.7	− 3 16.8	S. 43 6 56.8	−51 19.0	− 3 21 58.6	. . .	Y.	
53	29.964	43.3	35.3	+ 1 13.2	31 41 24.3	37.0	+ 7 11 37.9	− 15.4	Y.	
54	. .	. .	. .	+ 0 43.0	32 55 54.1	38.7	+ 5 57 6.4	. .	Y.	
55	. .	. .	. .	+ 1 16.7	S. 32 56 27.8	38.0	+ 5 56 33.5	− 14.8	Y.	
56	. .	. .	. .	− 2 0.0	N. 27 21 48.8	31.1	+ 66 15 59.1	− 24.5	Y.	
57	29.950	43.1	34.4	+ 0 9.8	S. 23 55 19.5	26.6	+ 14 57 53.1	− 16.1	Y.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
59	29.936	43.0	34.0	− 0 48.1	N. 28 10 34.9	32.2	+ 67 4 46.4	− 21.6	Y.	
60	29.962	46.5	40.3	+ 0 34.7	N. 22 19 13.4	24.4	+ 61 13 17.1	− 17.5	Y.	Corr. −1″.49 applied to mean of A, B, C, D.
61	. .	. .	. .	− 4 0.5	S. 68 21 11.2	2 28.6	− 29 30 0.6	− 3.2	Y.	
62	29.976	46.2	39.6	+ 0 25.8	N. 47 19 23.3	1 4.4	+ 86 14 7.0	− 14.2	Y.	
63	. .	. .	. .	+ 1 12.3	23 53 39.6	26.3	+ 62 47 45.2	− 13.3	Y.	
64	. .	. .	. .	− 0 32.3	N. 2 10 19.7	2.3	+ 41 4 1.2	− 11.4	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Dec. 6	1	Groombridge 745	. .	2	VI, VII.	343	5	2.8	16.9	14.8	21.9	13.4	6.3	12.68	28.029	−0.052	27.946
	2	Weisse (2) IV, 1151	8.5	2	VII, IX.	23	55	1.1	16.3	11.0	20.4	10.4	4.4	10.60	28.359	. .	28.302
	3	Moon, N. L.	. .	2	I, III.	40	50	1.4	17.7	11.2	21.9	11.2	8.4	11.97	30.176	. .	30.279
	4	Moon, S. L.	. .	3	V, VII, IX.	41	20	1.9	17.9	11.8	21.9	12.6	8.0	12.35	30.477	. .	30.309
	5	Weisse (2) IV, 676	. .	3	III–VII.	17	0	0.7	16.4	11.3	20.9	10.4	4.7	10.73	28.509	. .	28.448
	6	Lalande 9012	. .	3	III–VII.	13	15	1.6	18.3	12.8	22.4	13.1	6.1	12.38	28.477	. .	28.415
	7	Nadir	. .	.	. .	199	59	54.9	71.3	63.8	75.1	62.9	61.3	64.88	30.080	. .	. .
7	8	B. A. C. 1111	. .	3	V, VI, VII.	356	10	2.1	17.1	13.8	21.2	11.6	6.7	12.08	37.476	−0.057	37.411
	9	Lalande 6888, (1st *)	5.5	1	V.	17	50	1.2	15.4	10.5	20.2	11.2	5.9	10.73	31.025	. .	30.968
	10	Lalande 6888, (2d *)	7.0	2	VII, IX.	“	“	“	“	“	“	“	“	“	31.265	. .	31.202
	11	Weisse (2) IV, 1151	8.5	3	V, VII, IX.	23	55	2.8	16.2	11.6	20.2	11.8	6.7	11.55	28.528	. .	28.464
	12	B. A. C. 1313	6.0	3	IV–VI.	358	30	1.7	16.8	13.3	23.0	13.0	6.1	12.32	33.319	. .	33.257
	13	Weisse (2) IV, 676	. .	3	III–VII.	17	0	2.0	16.8	11.8	21.8	11.8	6.9	11.85	28.541	. .	28.475
	14	Lalande 9012	. .	3	III–VII.	13	15	0.3	15.1	9.9	18.8	9.8	4.2	9.68	28.384	. .	28.324
	15	Lacaille 1659	8.5	3	III–VII.	98	45	3.1	19.2	11.2	22.0	13.2	5.9	12.43	27.049	. .	27.000
	16	Moon, N. L.	. .	3	I, III, V.	38	10	1.7	16.8	12.4	21.2	12.1	7.0	11.87	34.556	. .	34.569
	17	Moon, S. L.	. .	2	VII, IX.	38	39	57.9	73.2	67.9	76.7	69.7	63.8	68.20	34.222	. .	34.037
	18	Jupiter, N. L.	. .	1	I.	36	9	56.7	70.2	65.1	75.7	67.1	59.8	65.77	30.115	. .	30.022
	19	Jupiter, S. L.	. .	1	III.	“	“	“	“	“	“	“	“	“	28.495	. .	28.424
	20	Nadir	. .	.	. .	199	59	54.8	69.4	63.4	75.3	63.5	60.6	64.50	30.076	. .	. .
8	21	B. A. C. 1313	6.0	3	III–VII.	358	30	1.6	14.6	12.1	23.1	10.3	1.1	10.47	33.111	+0.069	33.163
	22	Nadir	. .	.	. .	200	0	1.9	14.0	9.4	23.1	7.0	2.5	9.65	30.239	. .	. .
	23	Lacaille 1659, (1st *)	. .	2	VI, VII.	98	45	0.1	13.4	8.9	18.3	8.5	59.6	8.13	26.804	. .	26.887
	24	Lacaille 1659, (2d *)	. .	2	VIII, IX.	“	“	“	“	“	“	“	“	“	27.075	. .	27.189
	25	Lacaille 1678	7.0	3	VII, VIII, IX.	95	55	1.1	14.1	9.0	20.0	9.0	0.0	8.87	32.099	. .	32.202
	26	B. A. C. 1565	5.0	3	V, VI, VII.	339	50	3.0	15.2	14.2	23.5	10.9	0.6	11.23	30.302	. .	30.342
	27	Lalande 9884	7.5	3	IV–VI.	340	35	3.9	14.0	13.0	22.0	11.2	1.7	10.97	23.533	. .	23.588
	28	O. Arg. N. 58	. .	3	VI, VII, VIII.	4	20	3.8	13.6	10.8	21.7	10.8	2.2	10.48	29.737	. .	29.792
	29	Jupiter, N. L.	. .	2	VI, VII.	36	10	4.8	15.2	14.2	22.9	13.0	3.4	12.25	29.505	. .	29.576
	30	Jupiter, S. L.	. .	2	VIII, IX.	“	“	“	“	“	“	“	“	“	27.860	. .	27.926
	31	Lalande 10797	. .	3	III–VII.	21	40	0.5	10.7	9.0	18.5	10.3	1.4	8.40	32.270	. .	32.332
	32	Anon. 5h 51m 7s	9.0	3	III–VII.	82	5	0.9	11.3	7.9	18.3	7.9	59.1	7.57	35.686	. .	35.759
	33	Moon, N. L.	. .	3	I, II, III.	36	24	59.7	70.8	66.5	76.0	65.7	58.0	66.12	32.068	. .	32.184
	34	Moon, S. L.	. .	3	VII, VIII, IX.	36	55	0.0	9.5	7.0	17.9	5.5	57.8	6.28	31.649	. .	31.646
	35	Lacaille 2226	. .	2	V, VII.	82	25	2.5	15.5	11.4	21.7	10.5	1.1	10.45	27.415	. .	27.491
	36	B. A. C. 2095	. .	3	IV–VI.	339	10	3.3	13.8	13.6	21.6	10.0	1.3	10.60	24.825	. .	24.878
	37	Anon. 6h 44m 21s	. .	3	IV–VI.	87	25	2.8	16.0	11.2	22.5	11.3	2.2	11.00	36.882	. .	36.953
	38	Weisse VI, 1579	. .	3	III, IV, V.	73	40	2.6	13.1	12.1	22.5	10.0	2.1	10.40	33.234	. .	33.301
	39	Weisse VI, 1587	. .	2	VI, VIII.	“	“	“	“	“	“	“	“	“	32.160	. .	32.240
	40	Anon. 7h 2m 23s	. .	2	V, VII.	73	30	1.9	13.8	10.5	23.0	10.3	2.0	10.25	32.160	. .	32.234
9	41	11 Tauri	. .	3	III–VII.	34	0	4.0	21.7	16.0	28.4	14.7	8.2	15.50	32.829	−0.057	32.768
	42	18 Pleiadum	. .	2	III, VII.	35	10	0.8	18.1	11.6	22.3	10.5	3.1	11.07	32.105	. .	32.042
	43	15 Pleiadum	9.0	1	V.	“	“	“	“	“	“	“	“	“	30.844	. .	30.787
	44	28 Tauri	6.5	3	V, VII, IX.	“	“	“	“	“	“	“	“	“	32.349	. .	32.291
	45	Weisse (2) IV, 1151	. .	3	III–VII.	23	55	0.8	18.1	12.4	23.0	10.2	3.1	11.27	28.497	. .	28.433
	46	ψ Tauri	. .	3	III–VII.	30	14	59.6	77.2	70.5	81.8	68.1	63.1	70.18	31.435	. .	31.373
	47	Nadir	. .	.	. .	199	59	56.7	73.7	67.1	81.0	65.2	62.6	67.72	30.179	. .	. .
	48	B. A. C. 1565	. .	3	IV–VI.	339	50	1.8	19.6	14.1	26.5	12.9	3.8	13.12	30.518	. .	30.446
	49	Lalande 9884	8.5	3	IV–VI.	340	35	2.2	19.5	15.5	27.8	13.8	4.7	13.92	23.802	. .	23.731
	50	Groombridge 995	6.5	1	V.	5	30	1.0	19.2	15.1	25.0	11.3	4.9	12.75	33.418	. .	33.361
	51	Lalande 10797	7.3	3	III–VII.	21	40	1.8	19.4	12.7	24.6	12.2	5.4	12.68	32.476	. .	32.412
	52	B. A. C. 2095	6.0	3	IV–VI.	339	10	4.3	20.8	18.5	27.6	14.8	6.9	15.48	25.129	. .	25.056
	53	B. A. C. 2266	. .	3	III–VII.	87	15	2.1	19.2	12.2	26.8	11.4	5.2	12.82	34.138	. .	34.086
	54	Moon, N. L.	. .	3	III–VII.	35	49	59.1	76.2	69.8	83.2	68.4	62.2	69.82	35.740	. .	35.679
10	55	Nadir	. .	.	. .	200	0	2.1	12.6	8.5	17.9	8.0	3.2	8.72	30.225	. .	. .
12	56	ρ Ursæ Majoris	. .	3	IV–VI.	350	45	2.8	15.3	13.3	21.5	14.0	2.5	11.57	27.256	+0.047	27.296
	57	Nadir	. .	.	. .	200	0	3.0	13.6	11.1	21.3	8.4	3.2	10.10	30.275	. .	. .
	58	Anon. 9h 17m 26s	8.5	3	III–VII.	87	15	1.7	12.8	9.6	21.8	10.2	1.9	9.67	25.479	. .	25.531
	59	Anon. 9h 21m 53s	6.5	3	V, VI, VII.	92	5	0.8	13.0	10.0	22.2	10.7	1.0	9.62	31.870	. .	31.925
	60	Moon	. .	3	IV–VI.	41	40	1.2	14.8	10.8	20.9	12.0	2.8	10.42	32.652	. .	32.698
	61	4 Sextantis	. .	3	III–VII.	53	55	2.0	14.2	10.2	18.1	12.1	1.6	9.70	28.233	. .	28.279
	62	Anon. 9h 49m 51s	. .	3	VI, VII, VIII.	99	0	1.3	14.4	9.2	18.2	11.4	1.1	9.27	35.061	. .	35.129
	63	Anon. 9h 58m 53s	9.0	3	III–VII.	37	40	1.9	13.6	10.5	18.1	11.2	1.2	9.42	27.742	. .	27.785
	64	Weisse X, 94	. .	3	IV–VI.	46	30	1.5	11.3	9.6	18.1	11.0	0.2	8.62	23.547	+0.047	23.593

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 4.3	N. 36 53 43.0	44.6	+ 75 48 6.9	— 11.7	Y.	
2	. .	. .	. .	+ 0 53.2	S. 3 56 3.8	4.1	+ 34 57 31.4	— 9.3	Y.	
3	. .	. .	. .	— 0 8.8	20 50 3.2	—18 43.7	+ 18 7 30.6	. .	Y.	Correction for defective illumination of north limb = 3″.0.
4	29.990	46.2	41.4	— 0 9.7	S. 21 20 2.7	—19 4.8				
5	. .	. .	. .	+ 0 48.6	N. 2 59 0.7	3.1	+ 41 52 43.0	— 5.7	Y.	
6	29.988	46.0	40.3	+ 0 49.6	6 43 58.0	7.0	+ 45 37 44.3	— 4.6	Y.	
7	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
8	29.644	48.4	41.9	— 3 52.5	23 53 40.4	25.9	+ 62 47 45.6	— 13.6	Y.	
9	. .	. .	. .	— 0 30.3	2 10 19.6	2.2	+ 41 4 1.0	— 11.5	Y.	
10	. .	. .	. .	— 0 37.7	N. 2 10 26.9	2.2	+ 41 4 8.4	— 11.5	Y.	
11	29.646	48.0	41.9	+ 0 48.1	S. 3 55 59.6	4.0	+ 34 57 35.6	— 9.4	Y.	
12	. .	. .	. .	— 1 42.1	N. 21 31 29.8	23.1	+ 60 25 32.1	— 8.7	Y.	
13	29.644	47.2	41.4	+ 0 47.8	2 59 0.4	3.0	+ 41 52 42.7	— 5.8	Y.	
14	. .	. .	. .	+ 0 52.5	N. 6 43 57.8	5.9	+ 45 37 43.0	— 4.7	Y.	
15	. .	. .	. .	+ 1 33.9	S. 78 46 46.3	4 47.0	— 39 57 54.1	— 1.8	Y.	Appears single.
16	. .	. .	. .	— 2 23.2	18 7 48.6	—16 23.7	+ 20 47 21.0	. .	Y.	Correction for defective illumination of north limb = 0″.5.
17	29.654	47.0	42.2	— 2 6.5	18 38 1.7	—16 49.9				
18	. .	. .	. .	— 0 0.7	16 9 5.1	16.3	+ 22 43 52.8	. .	Y.	Under clouds.
19	29.660	47.0	43.0	+ 0 49.3	S. 16 9 55.1	16.3				
20	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
21	29.982	41.2	32.9	— 1 39.1	N. 21 31 28.6	23.8	+ 60 25 31.7	— 9.0	F.	
22	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
23	. .	. .	. .	+ 1 37.4	S. 78 46 45.5	4 56.1	— 39 58 2.3	— 1.5	F.	
24	. .	. .	. .	+ 1 28.0	78 46 36.1	4 56.0	— 39 57 52.8	— 1.5	F.	
25	. .	. .	. .	— 1 9.0	S. 75 53 59.9	3 56.1	— 37 4 16.7	— 1.7	F.	
26	29.992	41.0	32.9	— 0 10.7	N. 40 9 59.5	50.9	+ 79 4 29.6	— 2.0	F.	
27	. .	. .	. .	+ 3 20.5	39 21 28.5	49.5	+ 78 15 57.3	+ 0.2	F.	
28	. .	. .	. .	+ 0 6.5	N. 15 39 43.0	16.9	+ 54 33 39.2	— 0.1	F.	
29	. .	. .	. .	+ 0 13.3	S. 16 10 25.5	16.9	+ 22 42 31.0	. .	F.	
30	. .	. .	. .	+ 1 4.9	16 11 17.2	16.9				
31	. .	. .	. .	— 1 13.1	1 38 55.3	1.7	+ 37 14 42.2	+ 1.0	F.	
32	. .	. .	. .	— 3 0.6	62 2 7.0	1 53.3	— 23 10 21.0	— 1.2	F.	
33	. .	. .	. .	— 1 8.4	16 23 57.7	—14 55.2	+ 22 29 41.8	. .	F.	Correction for defective illumination of north limb = 0″.1.
34	. .	. .	. .	— 0 51.6	16 54 14.7	—15 22.2				
35	29.990	41.0	32.1	+ 1 18.5	S. 62 26 29.0	1 55.4	— 23 34 45.1	— 0.8	F.	
36	. .	. .	. .	+ 2 40.2	N. 40 47 9.2	52.1	+ 79 41 40.5	+ 9.4	F.	
37	. .	. .	. .	— 3 38.1	S. 67 21 32.9	2 24.1	— 28 30 17.8	— 0.9	F.	
38	. .	. .	. .	— 1 43.5	53 38 26.9	1 22.0	— 14 46 9.7	+ 1.0	F.	
39	. .	. .	. .	— 1 10.2	53 39 0.2	1 22.1	— 14 46 43.0	+ 0.9	F.	
40	29.990	40.5	31.5	— 1 10.0	53 29 0.2	1 21.6	— 14 36 42.6	+ 1.2	F.	
41	30.188	35.3	30.7	— 1 26.8	13 58 48.8	15.2	+ 24 54 35.3	— 10.5	Y.	
42	. .	. .	. .	— 1 4.0	15 9 7.1	16.5	+ 23 44 15.6	— 9.8	Y.	
43	. .	. .	. .	— 0 24.7	15 9 46.4	16.5	+ 23 43 36.3	— 9.8	Y.	
44	. .	. .	. .	— 1 11.8	15 8 59.3	16.5	+ 23 44 23.4	— 9.7	Y.	
45	. .	. .	. .	+ 0 49.1	3 56 0.3	4.2	+ 34 57 34.7	— 9.7	Y.	
46	30.200	35.7	30.2	— 0 43.0	S. 10 14 27.2	11.0	+ 28 39 1.1	— 8.7	Y.	
47	. .	. .	. .	. .	. . . .	. .	. . . .	. .	Y.	
48	30.206	36.2	29.5	— 0 14.0	N. 40 10 0.8	51.6	+ 79 4 31.7	— 2.4	Y.	
49	. .	. .	. .	+ 3 16.0	39 21 30.0	50.2	+ 78 15 59.4	— 0.1	Y.	
50	. .	. .	. .	— 1 45.4	N. 14 31 32.6	15.8	+ 53 25 27.8	+ 0.8	Y.	
51	. .	. .	. .	— 1 15.6	S. 1 38 57.1	1.8	+ 37 14 40.4	+ 0.9	Y.	
52	30.196	35.5	29.7	+ 2 34.7	N. 40 47 9.9	52.7	+ 79 41 41.8	+ 9.2	Y.	
53	. .	. .	. .	— 2 8.1	S. 67 13 4.8	2 25.0	— 28 21 50.5	— 0.4	Y.	
54	30.200	35.5	29.0	— 2 58.1	S. 15 47 11.7	0 31.8	+ 23 5 55.8	. .	Y.	
55	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
56	. .	. .	. .	+ 1 24.6	N. 29 13 23.8	33.8	+ 68 7 36.8	+ 24.1	F.	
57	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
58	. .	. .	. .	+ 2 19.8	S. 67 17 29.5	2 23.4	— 28 26 13.6	+ 1.3	F.	
59	29.980	37.0	32.5	— 1 0.3	72 4 9.3	3 4.7	— 33 13 34.7	+ 0.1	F.	
60	. .	. .	. .	— 1 24.6	21 38 45.9	—35 36.8	+ 17 50 30.2	. .	F.	
61	. .	. .	. .	+ 0 53.9	33 56 3.6	40.6	+ 4 56 55.1	+ 11.5	F.	
62	29.970	37.0	32.4	— 2 40.8	78 57 28.5	5 0.9	— 40 8 50.1	— 1.6	F.	
63	. .	. .	. .	+ 1 9.3	17 41 18.8	19.3	+ 21 12 1.2	+ 17.2	F.	
64	. .	. .	. .	+ 3 20.3	S, 26 33 29.0	30.2	+ 12 19 40.1	+ 17.4	F.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1870.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Dec. 12	1	Weisse X, 96.	. .	2	VII, IX.	46	30	1.5	11.3	9.6	18.1	11.0	0.2	8.62	28.300	+0.047	28.351
	2	Anon. 10^h 29^m 39^s	9.0	3	III, IV, V.	94	35	2.2	14.5	11.4	20.5	12.0	1.2	10.30	34.282	. .	34.329
	3	Anon. 10^h 29^m 47^s	9.0	2	VI, VII.	“	“	“	“	“	“	“	“	“	41.525	. .	41.585
	4	Anon. 10^h 30^m 17^s	8.2	2	VIII, IX.	“	“	“	“	“	“	“	“	“	36.518	. .	36.606
	5	Lacaille 4506.	. .	3	V, VI, VII.	90	30	1.8	16.0	10.1	19.0	11.1	0.0	9.67	32.269	. .	32.324
	6	Lacaille 4553.	. .	3	VI, VII, VIII.	101	20	3.6	15.4	10.7	21.0	12.2	1.2	10.68	29.273	. .	29.343
16	7	Carrington 491	. .	3	1–5	332	40	2.0	14.0	12.9	19.0	12.6	1.1	10.27	29.126	+0.058	29.182
	8	ψ Tauri	. .	3	IV–VI.	30	15	3.0	15.0	11.9	21.3	12.8	2.0	11.00	31.277	. .	31.333
	9	O. Arg. S. 3494	. .	3	III–VII.	87	55	3.0	16.1	11.1	21.5	12.0	1.0	10.78	26.922	. .	26.986
	10	Lacaille 1678.	. .	3	IV–VI.	95	50	2.5	15.8	11.7	21.7	12.9	1.4	11.50	22.669	. .	22.729
	11	Anon. 5^h 3^m 38^s	9.0	3	IV–VI.	54	40	1.1	13.8	9.9	21.0	10.2	1.0	9.50	35.367	. .	35.425
	12	Nadir	. .	.	. .	200	0	2.4	14.0	9.2	21.4	9.5	0.8	9.55	30.247	. .	. .
	13	Jupiter, S. L..	. .	2	VI, VII.	36	10	3.2	14.1	11.1	21.5	11.5	1.0	10.40	21.900	. .	21.960
	14	Jupiter, N. L.	. .	2	VIII, IX.	“	“	“	“	“	“	“	“	“	23.605	. .	23.660
	15	Groombridge 990	. .	2	VII, VIII.	7	30	4.9	19.1	14.5	23.5	13.5	2.5	13.00	25.660	. .	25.701
21	16	Anon. 3^h 32^m 12^s	. .	3	III–VII.	87	10	4.5	17.9	15.9	26.0	12.7	2.0	13.17	28.527	+0.022	28.554
	17	4 Pleiadum.	7.0	2	VI, VII.	34	54	59.5	74.1	69.8	80.9	68.4	58.3	68.50	25.360	. .	25.384
	18	13 Pleiadum.	7.5	2	VI, VII.	35	20	0.9	13.6	12.0	20.8	9.2	58.5	9.17	25.280	. .	25.304
	19	Anon. 4^h 53^m 31^s	7.0	3	VII, VIII, IX.	87	55	2.1	15.5	11.9	22.6	10.3	57.4	9.97	27.729	. .	27.779
	20	Anon. 5^h 1^m 52^s	9.5	2	VI, VII.	87	40	1.2	14.6	11.0	22.3	9.0	56.5	10.77	27.868	. .	27.901
	21	Anon. 5^h 5^m 2^s	. .	1	VII.	84	25	1.8	14.6	14.5	22.0	10.8	56.5	10.03	20.940	. .	20.977
	22	Jupiter, S. L.	. .	4	I, II, VIII, IX.	36	15	2.4	16.0	14.6	22.9	10.6	57.2	10.62	27.617	. .	27.623
	23	Jupiter, N. L.	. .	3	IV–VI.	“	“	“	“	“	“	“	“	“	29.280	. .	29.301
	24	θ^2 Orionis, (1st *)	. .	2	V, VI.	64	20	3.3	14.5	14.2	24.5	12.1	59.5	11.35	24.900	. .	24.924
	25	θ^2 Orionis, (2d *)	. .	2	V–VI.	“	“	“	“	“	“	“	“	“	24.805	. .	24.829
	26	Nadir	. .	.	. .	200	0	2.3	14.4	10.8	23.4	8.0	58.6	9.58	30.284	. .	. .
29	27	*i* Piscium, (1st *)	. .	3	III–VII.	31	55	0.8	16.1	10.8	17.1	14.2	2.5	10.25	34.381	−0.055	34.321
	28	*i* Piscium, (2d *)	. .	1	IX.	“	“	“	“	“	“	“	“	“	34.322	. .	34.257
	29	Moon, S. L.	. .	3	III–VII.	60	10	0.0	13.1	10.9	14.9	13.2	1.5	8.93	35.299	. .	35.244
	30	Nadir	. .	.	. .	200	0	2.1	18.7	14.7	21.2	15.0	5.3	12.83	30.342	−0.055	. .

Number.	Barometer.	THERM'S.		Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
		At.	Ex.							
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 51.6	S. 26 31 0.2	30.2	+ 12 22 8.9	+ 14.7	F.	
2	. .	. .	. .	− 2 15.7	74 32 54.6	3 35.7	− 35 42 51.1	− 0.4	F.	
3	. .	. .	. .	− 6 3.8	74 29 6.5	3 34.8	− 35 39 2.1	− 0.6	F.	
4	29.976	37.4	31.6	− 3 27.2	74 31 43.0	3 35.5	− 35 41 39.3	− 0.4	F.	
5	. .	. .	. .	− 1 12.8	72 28 56.8	2 49.2	− 31 38 6.7	+ 0.7	F.	
6	29.968	37.0	31.5	+ 0 20.6	S. 81 20 31.2	6 20.1	− 42 33 12.1	− 2.2	F.	
7	30.130	34.0	29.6	+ 0 25.6	N. 47 19 24.1	1 6.2	+ 86 14 9.5	− 17.7	F.	
8	. .	. .	. .	− 0 41.8	S. 10 14 29.2	11.0	+ 28 38 59.0	− 9.2	F,	
9	. .	. .	. .	+ 1 34.3	67 56 45.1	2 29.9	− 29 5 35.8	+ 0.1	F.	
10	. .	. .	. .	+ 3 47.3	75 53 58.3	3 59.3	− 37 4 18.4	+ 0.6	F.	
11	30.128	33.5	28.7	− 2 50.1	34 37 19.4	42.2	+ 4 15 37.6	− 1.9	F.	Faint.
12	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	F.	
13	. .	. .	. .	+ 4 11.3	16 14 21.7	17.2	+ 22 39 26.8	. .	F.	
14	. .	. .	. .	+ 3 18.2	S. 16 13 28.6	17.2				
15	30.124	33.0	28.5	+ 2 14.5	N. 12 27 32.5	13.5	+ 51 21 25.3	− 0.9	F.	
16	30.220	27.0	18.8	+ 0 45.5	S. 67 10 58.6	2 28.0	− 28 19 47.4	+ 0.2	F.	
17	. .	. .	. .	+ 2 24.4	14 57 32.9	16.8	+ 23 55 49.6	− 10.4	F.	
18	. .	. .	. .	+ 2 26.9	15 22 36.1	21.8	+ 23 30 41.4	− 10.2	F.	
19	. .	. .	. .	+ 1 9.5	67 56 19.5	2 34.0	− 29 5 14.3	+ 1.4	F.	
20	. .	. .	. .	+ 1 5.7	67 41 16.5	2 32.1	− 28 50 9.4	+ 1.5	F.	
21	. .	. .	. .	+ 4 42.0	64 29 52.3	2 11.1	− 25 38 24.2	+ 1.3	F.	
22	. .	. .	. .	+ 1 14.4	16 16 25.0	18.4	+ 22 37 22.2	. .	F.	
23	. .	. .	. .	+ 0 21.9	16 15 32.5	18.3				
24	. .	. .	. .	+ 2 38.8	44 22 50.1	1 1.5	− 5 30 12.3	+ 0.3	F.	
25	30.230	25.0	17.5	+ 2 41.8	44 22 53.1	1 1.5	− 5 30 15.3	+ 0.3	F.	
26	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	F.	
27	29.872	35.8	20.7	− 2 15.5	11 52 54.8	13.0	+ 27 0 31.5	− 20.9	Y.	
28	. .	. .	. .	− 2 13.5	11 52 56.8	13.0	+ 27 0 29.5	− 20.9	Y.	
29	. .	. .	. .	− 2 44.4	S. 40 7 24.5	−49 29.9	− 0 24 15.4	. .	Y.	Images faint.
30	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	Y.	

CORRECTIONS

TO THE

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THE AMERICAN EPHEMERIS

GIVEN BY

INDIVIDUAL OBSERVATIONS OF STARS

WITH THE

TRANSIT CIRCLE.

1870.

CORRECTIONS

TO THE

STAR POSITIONS OF THE AMERICAN EPHEMERIS, ETC.

NOTE.—In order to obviate the necessity for reference to the American Ephemeris, immediately below the name of each star is given its mean right ascension, and mean north polar distance, for 1870.0, as stated in that work.

a ANDROMEDÆ.

	h.	m.	s.
Right Ascension. . .	0	1	40.29
	°	′	″
North Polar Distance .	61	37	37.84

				s.		″
Feb.	3	E.	−	0.05	+	0.4
	19	F.	+	0.10	−	0.3
	25	F.	+	0.01	−	0.4
Mar.	3	F.	+	0.02	+	0.3
April	5	Ha.	+	0.01	+	0.9
	12	E.	−	0.04		0.0
May	6	E.	−	0.06	+	0.3
June	19	E.		0.00	+	1.5
	20	F.	+	0.21	+	1.4
July	16	E.	+	0.03	+	1.3
Mean			+	0.023	+	0.54
Div., Flex., etc. .				. .	−	0.41

γ PEGASI.

	h.	m.	s.
Right Ascension. . .	0	6	32.62
	°	′	″
North Polar Distance .	75	32	20.68

				s.		″
June	20	F.	+	0.10	−	0.1
July	16	E.	+	0.04	+	1.5
Mean			+	0.070	+	0.70
Div., Flex., etc. .				. .	−	0.21

β CETI.

	h.	m.	s.
Right Ascension. . .	0	37	3.74
	°	′	″
North Polar Distance .	108	42	1.72

				s.		″
April	25	F.	+	0.30	−	3.4
May	13	F.	+	0.21		
June	29	F.	+	0.12	+	0.3
Mean			+	0.210	−	1.55
Div., Flex., etc. .				. .	−	0.39

21 CASSIOPEÆ, S. P.

	h.	m.	s.
Right Ascension. . .	0	37	6.38
	°	′	″
North Polar Distance .	344	16	35.11

				s.		″
Mar.	16	Ha.	+	0.20	+	4.1
	21	F.	+	0.26	+	2.3

21 CASSIOPEÆ—Continued.

				s.		″
April	5	F.	+	0.52	+	0.1
	9	Ha.	−	0.12	−	0.7
	12	S.	−	0.45	+	1.5
	22	E.	+	0.28	+	3.1
	25	E.	+	0.30	+	1.8
	30	Ha.	+	0.53	+	2.1
May	14	F.	+	0.01	+	2.6
	19	E.	+	0.66	+	3.5
June	7	E.	+	0.41	+	1.3
Mean			+	0.236	+	1.82
Div., Flex., etc. .				. .	−	0.26

ε PISCIUM.

	h.	m.	s.
Right Ascension. . .	0	56	11.88
	°	′	″
North Polar Distance .	82	48	36.92

				s.		″
June	20	F.	+	0.09	+	0.7
July	16	E.	+	0.04	+	0.1
Mean			+	0.065	+	0.90
Div., Flex., etc. .				. .	−	0.21

POLARIS.

	h.	m.	s.
Right Ascension. . .	1	11	17.67
	°	′	″
North Polar Distance .	1	23	1.54

				s.		″
Feb.	1	E.		. .	+	1.4
	24	F.		. .	−	3.9
	25	F.	+	1.86	−	0.7
Mar.	3	F.	+	1.33	+	0.7
	7	Ha.		. .	+	0.8
	9	F.		. .	−	1.2
	10	Ha.	+	0.35	+	0.1
	16	Ha.	+	0.57	+	2.0
	18	F.	+	0.03	−	0.5
	19	Ha.	−	0.50	+	0.6
	22	Ha.		. .	+	1.1
	23	E.	+	0.84	−	0.5
	24	F.	+	0.25	+	1.2
	25	Ha.	+	0.23	+	0.1
	30	F.		. .	+	2.1
April	6	Ha.		. .		. .
	8	F.	−	2.75	+	1.2
	12	E.	−	0.27	−	1.9
	22	F.	+	0.27	−	0.7
	25	F.	+	1.46	+	0.2
	29	Ha.	+	4.82	+	1.0
May	1	F.	+	0.79	+	1.5
	6	E.		. .	+	1.1
	8	Ha.	+	1.87		0.0

POLARIS—Continued.

				s.		″
May	11	Ha.	+	2.89	−	2.0
	13	F.	+	0.39	+	0.6
	15	E.	+	3.29	+	0.2
	16	F.		. .	+	1.5
	19	F.	+	1.61	+	1.8
June	6	E.	+	0.05	+	1.6
	17	S.	+	0.93		. .
	20	F.	−	1.07	+	0.3
	22	E.	−	1.77	+	0.9
	24	S.	−	6.13		. .
	28	E.		. .	−	0.2
	29	F.		. .	−	0.4
	29	S.	+	1.98		. .
July	14	S.	−	4.99		. .
	16	E.		. .	+	0.8
	17	S.	+	0.46		. .
	19	E.	+	2.99	+	0.4
Mean			+	0.406	+	0.38
Div., Flex., etc. .				. .	+	0.01

POLARIS, S. P.

	h.	m.	s.
Right Ascension. . .	1	11	17.67
	°	′	″
North Polar Distance .	358	36	58.46

				s.		″
Feb.	20	Ha.		. .	−	1.1
Mar.	1	Ha.		. .	+	0.2
	16	Ha.	+	0 29	+	0.5
	18	F.	−	1.40	+	1.2
	19	Ha.	−	1.20	+	1.3
	21	F.		. .	+	1.3
	24	F.	+	0.75		0.0
April	5	F.		. .	+	0.1
	7	Ha.		. .	−	1.0
	8	F.	−	0.74	+	0.6
	9	Ha.		. .	−	0.4
	12	Ha.	−	0.24	−	0.3
	22	E.		. .	+	0.7
	23	F.	+	0.94	+	1.8
	25	E.		. .	+	0.5
	26	F.	+	1.36	+	1.4
	27	Ha.		. .	−	0.9
	30	Ha.	+	5.40	+	0.4
May	2	F.	+	0.63	+	1.1
	5	F.		. .	−	0.7
	9	Ha.	+	2.70	−	0.1
	11	F.		. .		0.0
	12	Ha.	+	3.29	+	0.3
	14	F.	+	0.63	+	1.7
	16	E.	+	2.94	−	0.4
	19	E.	−	1.46	−	0.8
	20	F.	+	1.56	+	2.3
June	7	E.	−	0.42	+	0.2
	18	S.	−	2.69		. .
	21	S.	−	2.36	−	0.5
	22	E.	−	1.89		0.0

Polaris, S. P.—Continued.

			s.	″
June	23	F.	− 0.82	+ 0.9
	24	S.	− 3.76	. .
	30	S.	− 2.79	+ 1.7
July	5	F.	. .	+ 0.8
	23	F.	− 0.27	− 0.7
	27	E.	. .	− 0.5
Aug.	2	E.	− 2.85	− 1.3
	5	Ha.	− 0.41	+ 0.8
	8	S.	+ 0.02	. .
	12	S.	− 2.16	− 0.7
Mean			− 0.177	+ 0.28
Div., Flex., etc. .			. .	− 0.04

θ Ceti.

	h.	m.	s.
Right Ascension . . .	1	17	31.54
	°	′	″
North Polar Distance .	98	51	16.57

			s.	″
June	20	F.	+ 0.12	+ 0.7
July	16	E.	+ 0.07	+ 1.8
	17	S.	+ 0.06	. .
	19	E.	+ 0.02	+ 2.3
Mean			+ 0.090	+ 1.60
Div., Flex., etc. .			. .	+ 0.01

38 Cassiopeæ, S. P.

	h.	m.	s.
Right Ascension . . .	1	21	56.65
	°	′	″
North Polar Distance .	339	35	39.33

			s.	″
Mar.	31	F.	. .	+ 0.5
May	19	E.	+ 0.14	+ 1.7
June	7	E.	+ 0.55	+ 0.7
Mean			+ 0.345	+ 0.97
Div., Flex., etc. .			. .	− 0.34

η Piscium.

	h.	m.	s.
Right Ascension . . .	1	24	31.73
	°	′	″
North Polar Distance .	75	19	29.80

			s.	″
July	16	E.	− 0.01	. .
	17	S.	+ 0.06	. .
	19	E.	+ 0.06	+ 1.3
Mean			+ 0.037	+ 1.30
Div., Flex., etc. .			. .	− 0.21

ο Piscium.

	h.	m.	s.
Right Ascension . . .	1	38	31.91
	°	′	″
North Polar Distance .	81	29	50.93

			s.	″
June	22	E.	− 0.17	− 0.2
July	17	S.	− 0.06	. .
	19	E.	0.00	+ 0.2
Mean			+ 0.077	0.00
Div., Flex., etc. .			. .	− 0.22

β Arietis.

	h.	m.	s.
Right Ascension . . .	1	47	27.73
	°	′	″
North Polar Distance .	69	49	41.94

			s.	″
Feb.	25	F.	0.00	+ 0.4
Mar.	9	F.	− 0.12	− 0.6
	30	F.	− 0.04	+ 3.2
May	6	E.	+ 0.08	+ 2.6
	13	F.	+ 0.02	− 0.7
June	6	E.	+ 0.14	− 0.2
	22	E.	− 0.08	+ 0.9
	24	S.	− 0.03	. .
	26	S.	+ 0.04	+ 2.0
	28	E.	− 0.04	+ 1.5
July	17	S.	+ 0.05	. .
Mean			+ 0.002	+ 1.01
Div., Flex., etc. .			. .	− 0.23

50 Cassiopeæ, S. P.

	h.	m.	s.
Right Ascension . . .	1	52	22.97
	°	′	″
North Polar Distance .	341	47	24.36

			s.	″
April	5	F.	+ 0.51	+ 0.9
	30	Ha.	+ 0.36	+ 1.5
May	11	F.	− 0.16	+ 0.8
	16	E.	+ 0.29	+ 1.2
	20	F.	− 0.36	+ 2.5
June	7	E.	+ 0.31	+ 0.3
	22	E.	+ 0.07	+ 1.7
Mean			+ 0.146	+ 1.27
Div., Flex., etc. .			. .	− 0.29

α Arietis.

	h.	m.	s.
Right Ascension . . .	1	59	50.95
	°	′	″
North Polar Distance .	67	9	12.18

			s.	″
Feb.	25	F.	+ 0.02	+ 0.5
Mar.	3	F.	+ 0.09	+ 0.9
	7	Ha.	. .	+ 1.0
	9	F.	+ 0.06	− 0.1
	16	Ha.	− 0.03	+ 1.3
	18	F.	− 0.04	+ 1.0
	19	Ha.	+ 0.04	+ 2.6
	23	E.	0.00	+ 0.5
	25	Ha.	− 0.01	+ 2.0
	30	F.	− 0.04	+ 2.7
April	8	F.	0.00	+ 3.0
May	11	Ha.	+ 0.05	+ 0.5
	13	F.	+ 0.01	+ 1.2
June	14	S.	+ 0.12	. .
	22	E.	− 0.10	+ 0.6
	26	S.	+ 0.02	+ 0.9
	28	E.	− 0.03	+ 0.6
	29	S.	+ 0.13	+ 0.5
July	17	S.	0.00	. .
	19	E.	+ 0.04	+ 0.8
Mean			+ 0.017	+ 1.14
Div., Flex., etc. .			. .	− 0.28

ι Cassiopeæ, S. P.

	h.	m.	s.
Right Ascension . . .	2	18	23.15
	°	′	″
North Polar Distance .	336	48	55.80

ι Cassiopeæ, S. P.—Continued.

			s.	″
April	5	F.	+ 0.40	+ 2.3
May	16	E.	+ 0.63	+ 0.4
May	20	F.	− 0.48	+ 1.7
June	7	E.	+ 0.58	− 0.1
	10	E.	+ 0.54	+ 1.9
	22	E.	+ 0.20	+ 2.0
July	5	F.	− 0.08	− 1.5
Mean			+ 0.256	+ 0.96
Div., Flex., etc. .			. .	− 0.43

α Ceti.

	h.	m.	s.
Right Ascension . . .	2	55	29.14
	°	′	″
North Polar Distance .	86	25	18.87

			s.	″
Mar.	23	E.	+ 0.05	− 0.4
	25	Ha.	+ 0.09	+ 1.9
	30	F.	+ 0.08	+ 0.5
June	10	F.	+ 0.07	. .
	20	S.	− 0.07	+ 0.1
	27	E.	+ 0.08	+ 0.3
Mean			+ 0.050	+ 0.48
Div., Flex., etc. .			. .	− 0.18

48 Cephei, S. P.

	h.	m.	s.
Right Ascension . . .	3	3	55.23
	°	′	″
North Polar Distance .	347	15	8.95

			s.	″
May	16	E.	+ 0.40	0.0
	20	F.	− 0.86	+ 1.7
Mean			− 0.230	+ 0.85
Div., Flex., etc. .			. .	− 0.26

α Persei.

	h.	m.	s.
Right Ascension . . .	3	15	3.13
	°	′	″
North Polar Distance .	40	36	14.88

			s.	″
Mar.	24	F.	+ 0.11	− 0.7
	25	Ha.	+ 0.13	+ 1.0
	30	F.	− 0.01	+ 0.5
April	8	F.	+ 0.09	− 0.5
	13	E.	+ 0.04	− 2.6
June	10	F.	+ 0.35	. .
	16	S.	+ 0.13	− 2.1
	27	E.	+ 0.02	− 1.8
Mean			+ 0.108	− 0.89
Div., Flex., etc. .			. .	+ 0.04

δ Persei.

	h.	m.	s.
Right Ascension . . .	3	33	40.57
	°	′	″
North Polar Distance .	42	37	51.44

			s.	″
Mar.	30	F.	+ 0.25	. .
April	8	F.	+ 0.20	+ 0.1
	13	E.	+ 0.11	− 1.5
June	16	F.	+ 0.23	. .
	24	E.	+ 0.29	− 2.6
	27	E.	+ 0.49	. .
	30	E.	+ 0.27	− 2.0
Mean			+ 0.263	− 1.50
Div., Flex., etc. .			. .	+ 0.07

η TAURI.

	h.	m.	s.
Right Ascension . . .	3	39	45.59
North Polar Distance .	66°	27′	56″.37

				s.		″
Mar.	24	F.	+	0.05	+	0.5
	30	F.	+	0.06	+	0.9
April	8	F.		0.00	—	1.2
	13	E.	—	0.05	+	0.9
	26	F.	+	0.07	—	1.0
June	14	S.	+	0.10		. .
	16	F.		0.00	—	1.8
	21	E.	+	0.05	—	1.5
	24	E.	+	0.13		. .
	27	E.	+	0.10	—	0.1
	28	F.	—	0.02	—	2.0
	30	E.	—	0.02	—	0.6
Mean			+	0.039	—	0.59
Div., Flex., etc. .				. .	—	0.31

ζ PERSEI.

	h.	m.	s.
Right Ascension. . .	3	45	57.87
North Polar Distance .	68°	30′	17″.33

				s.		″
April	8	F.		0.00	+	0.9
June	24	E.	+	0.31	—	2.4
	30	E.	+	0.01	—	0.8
Mean			+	0.107	—	0.77
Div., Flex., etc. .				. .	—	0.33

α TAURI.

	h.	m.	s.
Right Ascension. . .	4	28	27.79
North Polar Distance .	73°	45′	15″.15

				s.		″
Feb.	9	E.		. .	+	1.1
April	8	F.	—	0.08	+	2.0
	13	E.	—	0.05	+	1.9
	26	F.	—	0.06		0.0
	30	Ha.	—	0.03	+	1.5
May	4	E.	+	0.01	+	0.1
	15	E.	+	0.05	+	2.5
	17	F.	—	0.10		. .
June	13	F.	+	0.06		. .
	16	F.	—	0.03		0.0
	19	F.	—	0.09	+	1.4
	20	S.	—	0.06		. .
	21	E.	+	0.05	—	1.5
	22	F.	—	0.12	—	0.1
	24	E.	+	0.11	+	0.2
	26	S.	+	0.04	+	1.5
June	27	E.	+	0.08	+	1.2
	30	E.	—	0.06	+	1.4
July	12	E.	—	0.04	—	0.1
	13	E.	—	0.04	—	0.5
	15	E.	+	0.14	—	0.6
Mean			—	0.011	+	0.66
Div., Flex., etc. .				. .	—	0.21

α TAURI, (Ref.)

				s.		″
June	28	N.	—	0.28	+	2.2
Div., Flex., etc. .				. .	+	0.93

9 CAMELOPARDALIS, S. P.

	h.	m.	s.
Right Ascension . . .	4	41	8.45
North Polar Distance . .	336°	7′	3″.53

				s.		″
May	15	Ha.	+	0.24	+	0.3
June	25	E.	+	0.42	+	1.7
July	19	E.	+	0.31		0.0
Mean			+	0.323	+	0.67
Div., Flex., etc. .				. .	—	0.47

ι AURIGÆ.

	h.	m.	s.
Right Ascension	4	48	31.82
North Polar Distance .	57°	2′	32″.55

				s.		″
April	23	F.	+	0.22	+	1.8
	26	F.	—	0.13	+	0.5
	30	E.	+	0.01	+	1.7
July	13	E.	+	0.01	—	1.1
	14	S.	—	0.03		. .
Mean			+	0.016	+	0.72
Div., Flex., etc. .				. .	—	0.32

11 ORIONIS.

	h.	m.	s.
Right Ascension	4	57	8.57
North Polar Distance .	74°	46′	45″.27

				s.		″
Feb.	10	F.	—	0.11	+	0.8
Mar.	9	F.	—	0.09	+	0.1
Mean			—	0.100	+	0.45
Div., Flex., etc. .				. .	—	0.21

α AURIGÆ.

	h.	m.	s.
Right Ascension	5	7	5.33
North Polar Distance . .	44°	8′	14″.98

				s.		″
June	23	S.	+	0.09		. .
	27	E.	+	0.07	+	1.2
July	10	F.	+	0.01	+	0.9
	12	F.	+	0.01	—	0.4
	13	E.	+	0.13	—	0.8
	17	S.	+	0.03		. .
	18	E.	+	0.29	—	0.4
	25	F.	—	0.09	+	0.3
	27	E.	+	0.02	+	0.2
Mean			+	0.062	+	0.14
Div., Flex., etc. .				. .	+	0.08

β ORIONIS.

	h.	m.	s.
Right Ascension	5	8	17.46
North Polar Distance .	98°	21′	13″.90

				s.		″
Mar.	9	F.	—	0.03	—	1.4
April	23	F.	+	0.13	+	0.3
	26	F.		0.00	—	1.0
	30	Ha.	+	0.08	+	0.1
May	4	E.	+	0.01	+	1.8
	15	E.	+	0.18	+	0.8
	17	F.	+	0.12	+	0.9
	25	E.	—	0.05	+	0.3

β ORIONIS—Continued.

				s.		″
June	16	F.	—	0.11	+	1.8
	21	E.	+	0.03	—	0.1
	22	F.	+	0.06	+	0.3
	24	E.	+	0.19	—	0.2
	28	F.	—	0.12	—	1.0
July	8	S.	—	0.05		. .
	10	F.	+	0.02	+	0.7
	11	S.	+	0.02		. .
	12	F.	—	0.07	—	1.7
	13	E.	+	0.05	—	0.9
	14	S.	+	0.02	—	0.7
	17	S.	+	0.02	—	1.2
	18	E.	+	0.16	+	3.0
	25	F.		0.00	—	0.9
	27	E.	+	0.01		0.0
Mean			+	0.020	+	0.04
Div., Flex., etc. .				. .	+	0.00

β TAURI.

	h.	m.	s.
Right Ascension	5	18	4.51
North Polar Distance .	61°	30′	18″.55

				s.		″
Mar	9	F.	+	0.01	—	1.6
April	23	F.	+	0.03	+	1.3
	26	F.	—	0.05	+	0.4
	30	Ha.	—	0.03	+	1.3
May	4	E.	+	0.04	—	0.5
	14	F.	—	0.03	+	1.9
	16	E.	+	0.05	+	2.0
	17	F.	—	0.01	+	1.4
	21	E.	+	0.09	+	0.9
	22	F.	+	0.05	+	0.4
	24	E.	+	0.12	—	0.9
	28	F.	+	0.03	+	1.4
July	8	S.	+	0.01		. .
	13	E.	—	0.01	+	0.1
	18	E.	+	0.21	+	0.1
	20	S.	+	0.04	+	0.1
	21	E.	+	0.08	+	1.1
	25	F.	—	0.04	+	0.4
	27	E.	—	0.01	+	0.3
Mean			+	0.031	+	0.56
Div., Flex., etc. .				. .	—	0.41

966 GROOMBRIDGE, S. P.

	h.	m.	s.
Right Ascension . .	5	22	21.68
North Polar Distance .	344°	57′	5″.34

				s.		″
June	20	F.	—	0.60	+	4.4
	23	F.	—	0.64	+	1.4
	25	E.	—	0.05	+	1.9
July	19	E.	+	0.03	—	0.2
Aug.	5	Ha.	—	0.73	+	1.7
	6	E.	—	0.42	+	1.0
	12	Ha.	—	0.54	—	0.2
Mean			—	0.421	+	1.43
Div., Flex., etc. .				. .	—	0.25

δ ORIONIS.

	h.	m.	s.
Right Ascension . . .	5	25	21.97
North Polar Distance .	90°	23′	51″.64

				s.		″
Feb.	10	F.	—	0.07	—	0.7
Mar.	9	F.	—	0.09	—	0.3
April	26	F.	+	0.04	—	0.6
	30	Ha.	—	0.01	+	1.1

δ ORIONIS—Continued.

			s.	″
May	25	E.	− 0.13	+ 0.2
June	22	F.	− 0.02	+ 1.0
	24	E.	+ 0.14	− 0.1
	28	F.	− 0.09	− 0.2
July	13	E.	− 0.09	− 1.4
	17	S.	− 0.02	− 1.0
	19	F.	− 0.11	− 1.5
Mean			− 0.041	− 0.32
Div., Flex., etc. .			. .	− 0.17

ε ORIONIS.

	h.	m,	s.
Right Ascension . . .	5	29	37.05
North Polar Distance .	91°	17′	13″.70

			s.	″
Mar.	9	F.	+ 0.01	− 1.1
April	23	F.	− 0.01	+ 0.8
	30	Ha.	− 0.01	+ 2.1
May	4	E.	0.00	+ 0.3
	14	F.	+ 0.04	+ 2.7
	17	F.	− 0.16	+ 3.9
	21	E.	− 0.07	+ 1.4
	24	E.	+ 0.09	+ 1.8
	28	F.	+ 0.05	+ 0.6
July	11	S.	− 0.01	. .
	12	F.	− 0.08	+ 0.6
	13	E.	− 0.03	− 0.3
	14	S.	+ 0.07	. .
	17	S.	+ 0.11	− 0.1
	18	E.	+ 0.24	− 0.2
	27	E.	− 0.05	+ 0.5
Mean			+ 0.012	+ 0.43
Div., Flex., etc. .			. .	− 0.17

α COLUMBÆ.

	h.	m.	s.
Right Ascension . . .	5	34	56.58
North Polar Distance .	124°	8′	40″.99

			s.	″
Feb.	10	F.	− 0.13	+ 1.0
Mar.	9	F.	− 0.07	− 0.7
Mean			− 0.100	+ 0.15
Div., Flex., etc. .			. .	− 0.88

α ORIONIS.

	h.	m.	s.
Right Ascension . . .	5	48	8.07
North Polar Distance .	82°	37′	10″.28

			s.	″
April	23	F.	− 0.06	+ 2.1
	26	F.	− 0.06	+ 1.5
May	14	F.	− 0.06	+ 2.4
	16	E.	+ 0.01	+ 2.0
	17	F.	+ 0.01	+ 2.0
	19	E.	+ 0.04	− 1.1
	21	E.	− 0.07	+ 1.9
July	11	S.	− 0.05	. .
	12	F.	− 0.05	− 1.0
	13	E.	+ 0.03	+ 0.3
	14	S.	− 0.03	. .
	17	S.	0.00	+ 0.6
	19	F.	− 0.02	+ 0.3
	20	S.	− 0.02	. .
	21	E.	− 0.04	+ 1.5
	25	F.	+ 0.03	+ 1.5
	27	E.	− 0.09	+ 0.9
	28	F.	− 0.14	+ 0.3
	29	F.	− 0.18	− 1.0
Aug.	1	Ha.	− 0.05	− 0.2
	5	E.	− 0.06	+ 0.8
Mean			− 0.035	+ 0.82
Div., Flex., etc. .			. .	− 0.21

22 CAMELOPARDALIS.

	h.	m.	s.
Right Ascension . . .	6	4	30.84
North Polar Distance .	20°	38′	21″.77

			s.	″
Mar.	10	Ha.	+ 0.29	− 0.2
Div., Flex., etc. .			. .	− 0.01

22 CAMELOPPARDALIS, S. P.

	h.	m.	s.
Right Ascension . .	6	4	30.84
North Polar Distance .	339°	21′	38″.23

			s.	″
June	14	F.	+ 0.32	0.0
July	11	F.	+ 0.12	+ 1.0
	13	F.	+ 0.31	− 1.5
	30	F.	− 0.19	− 1.7
Mean			+ 0.140	− 0.55
Div., Flex., etc. .			. .	− 0.35

μ GEMINORUM.

	h.	m.	s.
Right Ascension. . .	6	15	5.76
North Polar Distance .	67°	25′	20″.00

			s.	″
May	14	F.	− 0.04	+ 2.8
Aug.	1	E.	0.00	+ 0.5
	5	E.	+ 0.06	0.0
Mean			+ 0.007	+ 1.10
Div., Flex., etc. .			. .	− 0.27

γ GEMINORUM.

	h.	m.	s.
Right Ascension . . .	6	30	12.12
North Polar Distance .	73°	29′	31″.56

			s.	″
May	14	F.	− 0.10	+ 3.7
	21	E.	− 0.07	+ 1.4
July	12	F.	+ 0.07	+ 2.7
	13	E.	− 0.01	+ 1.3
	19	F.	+ 0.15	. .
	20	S.	+ 0.06	. .
	22	F.	− 0.02	+ 1.4
	27	E.	− 0.03	+ 1.7
	30	F.	− 0.16	− 0.6
Aug.	1	E.	− 0.04	+ 1.2
	5	E.	+ 0.03	+ 1.0
	7	S.	− 0.10	+ 0.9
Mean			− 0.018	+ 1.47
Div., Flex., etc. .			. .	− 0.21

51 CEPHEI.

	h.	m.	s.
Right Ascension . . .	2	38	43.00
North Polar Distance .	2°	45′	37″.95

			s.	″
Feb.	12	E.	. .	− 1.4
Div., Flex., etc. .			. .	+ 0.09

51 CEPHEI, S. P.

	h.	m.	s.
Right Ascension . .	6	38	43.00
North Polar Distance .	357°	14′	22″.05

51 CEPHEI, S. P.—Continued.

			s.	″
June	17	F.	+ 0.86	− 1.2
	18	S.	+ 0.79	. .
June	21	S.	+ 0.55	. .
	24	S.	− 1.34	. .
	25	E.	− 0.21	− 0.9
	30	S.	− 0.09	. .
July	8	F.	+ 0.61	. .
	9	S.	− 0.07	. .
	13	F.	− 0.41	+ 0.2
	14	E.	− 0.26	− 1.7
	15	S.	− 3.36	. .
	18	E.	+ 1.84	− 0.1
	21	S.	− 0.59	− 1.6
	23	F.	− 0.39	. .
July	30	F.	− 0.02	− 1.2
Aug.	1	Ha.	+ 1.19	− 0.7
	3	F.	+ 0.65	+ 0.3
	5	Ha.	− 0.82	+ 1.5
	6	E.	+ 0.26	− 0.1
	7	S.	− 2.50	. .
	12	S.	− 2.54	− 0.3
	15	E.	+ 0.71	. .
	15	Ha.	+ 0.33	+ 1.7
Mean			− 0.209	− 0.32
Div., Flex., etc. .			. .	− 0.06

α CANIS MAJORIS.

	h.	m.	s.
Right Ascension . .	6	39	25.13
North Polar Distance .	106°	32′	22″.38

			s.	″
Mar.	10	Ha.	− 0.05	+ 0.4
May	14	F.	− 0.05	+ 3.7
	16	E.	+ 0.08	+ 3.9
	19	E.	− 0.06	0.0
	20	F.	+ 0.01	+ 1.2
	21	E.	− 0.10	+ 1.0
June	8	F.	+ 0.04	+ 0.9
	17	F.	− 0.10	+ 1.0
	20	F.	− 0.08	+ 0.1
July	19	F.	+ 0.04	+ 0.4
	20	S.	+ 0.06	+ 0.5
	27	E.	+ 0.04	+ 0.7
	30	F.	− 0.06	− 0.3
Aug.	1	E.	0.00	− 0.6
	3	S.	− 0.03	. .
	4	Ha.	0.00	+ 0.5
	5	E.	+ 0.11	− 0.7
	7	S.	+ 0.03	− 0.3
	11	S.	− 0.02	+ 0.3
Mean			− 0.007	+ 0.71
Div., Flex., etc. .			. .	− 0.31

ε CANIS MAJORIS.

	h.	m.	s.
Right Ascension . .	6	53	31.08
North Polar Distance .	118°	47′	48″.42

			s,	″
Feb.	10	F.	− 0.08	+ 0.4
	12	E.	− 0.03	+ 2.9
Mar.	10	Ha.	− 0.07	+ 1.7
May	20	F.	+ 0.06	. .
July	22	F.	− 0.03	− 0.8
	28	Ha.	− 0.12	+ 1.1
Aug.	1	E.	− 0.08	− 0.6
	2	F.	− 0.16	+ 0.3
	5	E.	− 0.06	+ 0.6
Mean			− 0.063	+ 0.70
Div., Flex., etc. .			. .	− 0.78

δ CANIS MAJORIS.

	h.	m.	s.
Right Ascension. . .	7	3	6.39
North Polar Distance .	116°	11′	17″.12

				s.		″
Feb.	10	F.	−	0.13	+	1.8
Mar.	10	Ha.	−	0.05	+	4.9
April	8	F.	−	0.12	+	4.6
Aug.	2	F.	−	0.16	+	0.3
	5	E.		0.00	+	2.4
Mean			−	0.092	+	2.80
Div., Flex., etc. .				. .	−	0.71

δ GEMINORUM.

	h.	m.	s.
Right Ascension . . .	7	12	21.48
North Polar Distance .	67°	46′	50″.29

				s.		″
Feb.	10	F.	−	0.09		0.0
	12	E.		. .	+	1.2
Mar.	2	E.		. .	+	0.7
	10	Ha.	−	0.11	+	1.0
	11	E.	−	0.16	+	1.7
	22	Ha.	−	0.03	+	1.2
Aug.	2	F.	+	0.01	+	1.7
	5	E.	+	0.10	+	5.1
	11	S.	−	0.10		. .
Mean			−	0.054	+	1.58
Div., Flex., etc. .				. .	−	0.26

67 PIAZZI.

	h.	m.	s.
Right Ascension . . .	7	17	19.86
North Polar Distance .	21°	16′	24″.61

				s.		″
Feb.	10	F.	−	0.23	−	2.8
Div., Flex., etc. .				. .	−	0.04

67 PIAZZI, S. P.

	h.	m.	s.
Right Ascension . .	7	17	19.86
North Polar Distance .	338°	43′	35″.39

				s.		″
June	17	F.	+	0.04	+	0.5
July	23	F.	−	0.13	+	1.7
Mean			−	0.045	+	1.10
Div., Flex., etc. .				. .	−	0.37

α² GEMINORUM.

	h.	m.	s.
Right Ascension . . .	7	26	17.85
North Polar Distance .	57°	49′	44″.80

				s.		″
Feb.	10	F.	+	0.33	+	1.0
	19	F.	+	0.21	+	0.7
Mar.	2	E.	+	0.21	−	0.8
	10	Ha.	+	0.24	−	1.0
	11	E.	+	0.20	+	0.7
	18	F.	+	0.26	−	1.2
	22	Ha.	+	0 20	+	0.2
April	8	F.	+	0.19	−	0.1
May	21	E.	+	0.36	+	1.2

α² GEMINORUM—Continued.

				s.		″
June	25	E.	+	0.39		0.0
	27	E.	+	0.12	+	0.5
July	28	Ha.	+	0.34	+	0.8
Aug.	1	E.	+	0.36	+	0.9
	2	F.	+	0.28	+	0.5
	5	E.	+	0.46	+	0.2
Mean			+	0.277	+	0.24
Div., Flex., etc. .				. .	−	0.32

α CANIS MINORIS.

	h.	m.	s.
Right Ascension . . .	7	32	29.83
North Polar Distance .	84°	26′	38″.43

				s,		″
Feb.	10	F.	−	0.17	−	0.9
	16	F.	−	0.26	−	0.3
	25	F.	−	0.20	−	1.2
Mar.	2	E.	−	0.17	−	0.9
	5	E.	−	0.11	−	0.1
	10	Ha.	−	0.15	−	0.2
	11	E.	−	0.12	+	1.2
	22	Ha.	−	0.14	+	0.4
April	8	F.	−	0.22	+	0.5
May	21	E.	−	0.21	+	1.0
June	15	S.	−	0.20		. .
	17	F.	−	0.19	+	1.7
	18	S.	+	0.03	+	1.7
	20	F.	−	0.10	+	0.8
	21	S.	−	0.20		. .
	24	S.	−	0.09	−	1.5
	25	E.	−	0.14	+	0.2
	27	S.	−	0.23	+	0.9
	28	E.	−	0.28	+	2.0
	29	F.	−	0.14	+	0.2
	30	S.	−	0.04		. .
July	28	Ha.	−	0.06	+	0.2
Aug.	1	E.	−	0.10	+	0.7
	2	F.	−	0.08	+	0.6
	5	E.	+	0.05	−	0.2
	11	S.	−	0.18	+	0.6
Mean			−	0.144	+	0.32
Div., Flex., etc. .				. .	−	0.19

β GEMINORUM.

	h.	m.	s.
Right Ascension. . .	7	37	21.50
North Polar Distance .	61°	39′	43″.40

				s.		″
Feb.	10	F.	−	0.08	−	0.9
Mar.	2	E.	−	0.02	−	0.5
	5	E.	−	0.04	+	1.3
	10	Ha.	+	0.02	−	0.9
	11	E.	−	0.04	+	1.1
	18	F.	−	0.02		0.0
April	8	F.	−	0.08	+	1.0
May	21	E.	+	0.08	+	0.9
June	15	S.	−	0.07		. .
	17	F.		0.00	+	1.9
	20	F.	−	0.04		. .
	21	S.		0.00		. .
	22	E.	−	0.06	+	0.3
	25	E.	−	0.13	+	1.0
	28	E.	−	0.19	+	1.5
	29	F.	+	0.02	+	0.1
Aug.	1	E.	−	0.03	+	0.9
	2	F.	+	0.07	+	1.0
	5	E.	+	0.16	+	0.9
	11	S.	−	0.03		. .
Mean			−	0.024	+	0.60
Div., Flex., etc. .				. .	−	0.41

φ GEMINORUM.

	h.	m.	s.
Right Ascension. . .	7	45	32.36
North Polar Distance .	62°	54′	0″.24

				s.		″
Feb.	12	E.	−	0.10	+	1.8
	13	F.	−	0.09	−	1.2
	25	F.	−	0.04	−	1.2
	26	Ha.	−	0.10		0.0
Mar.	2	E.	−	0.11	−	0.7
	3	F.	−	0.07	−	1.1
	5	E.	−	0.14	+	0.4
	10	Ha.	−	0.11	−	0.4
	11	E.		. .	+	2.1
	18	F.	−	0.01	−	0.3
	22	Ha.	−	0.06	+	0.7
April	8	F.	−	0.08	+	1.0
Mean			−	0.083	+	0.09
Div., Flex., etc. .				. .	−	0.42

3 URSÆ MAJORIS.

	h.	m.	s.
Right Ascension. . .	7	59	50.63
North Polar Distance .	21°	8′	50″ 14

				s.		″
Feb.	10	F.	−	0.34	−	0.7
	12	E.	+	0.24	−	0.1
Mar.	2	E.	−	0.16	+	0.5
	5	E.	−	0.07	+	1.1
Mean			−	0.082	+	0.20
Div., Flex., etc. .				. .	−	0.03

3 URSÆ MAJORIS, S. P.

	h.	m.	s,
Right Ascension. . .	7	59	50.63
North Polar Distance .	338°	51′	9″.86

				s.		″
July	8	F.	−	0.23	−	0.9
	11	F.	−	0.18	+	0.7
	13	F.	−	0.23	+	1.6
Mean			−	0.213	+	0.47
Div., Flex., etc. .				. .	−	0.36

15 ARGUS

	h.	m.	s.
Right Ascension. . .	8	2	0.54
North Polar Distance .	113°	55′	51″.25

				s.		″
Mar.	3	F.	−	0.07	+	0.4
	5	E.		. .	+	1.4
April	8	F.	−	0.03	+	1.1
Mean			−	0.050	+	0.97
Div., Flex., etc. .				. .	−	0.64

ε HYDRÆ.

	h.	m.	s.
Right Ascension. . .	8	39	53.46
North Polar Distance .	83°	6′	20″.67

				s.		″
Feb.	2	Ha.		0.00	−	0.9
	10	F.	+	0.02	+	0.1
	13	F.	−	0.03	−	0.1
	16	F.	−	0.11	+	0.7
	21	E.	−	0.22	−	1.5

ε Hydræ—Continued.

			s.	″
Feb.	25	F.	− 0.13	− 0.9
	26	Ha.	− 0.09	− 0.1
Mar.	1	Ha.	− 0.02	− 1.3
	2	E.	− 0.08	+ 1.2
	3	F.	− 0.07	0.0
	5	E.	. .	+ 2.2
	18	F.	− 0.16	+ 1.1
	25	Ha.	− 0.10	+ 0.9
Mean			− 0.082	+ 0.11
Div., Flex., etc. .			. .	− 0.21

ι Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	8	50	17.72
North Polar Distance .	41°	27′	0″.45

			s.	″
Feb.	2	Ha.	+ 0.08	− 1.6
	10	F.	− 0.03	− 2.0
	12	E.	+ 0.29	− 0.4
	16	F.	− 0.04	+ 0.2
	21	E.	− 0.25	− 2.8
	25	F.	− 0.07	− 2.2
	26	Ha.	− 0.07	− 2.2
Mar.	1	Ha.	+ 0.14	− 2.4
	2	E.	+ 0.01	− 0.8
	3	F.	0.00	+ 0.4
	5	E.	− 0.13	− 0.5
Mean			− 0.006	− 1.30
Div., Flex., etc. .			. .	+ 0.02

σ^2 Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	8	58	55.16
North Polar Distance .	22°	20′	27″.41

			s.	″
Feb.	10	F.	− 0.09	− 3.0
	16	F.	+ 0.24	− 1.0
Mar.	3	F.	− 0.11	− 1.6
Mean			+ 0.013	− 1.97
Div., Flex., etc. .			. .	− 0.10

κ Cancri.

	h.	m.	s.
Right Ascension. . .	9	0	42.23
North Polar Distance .	78°	48′	36″.15

			s.	″
Feb.	21	E.	− 0.21	+ 0.1
Mar.	2	E.	− 0.02	− 0.1
	5	E.	0.00	+ 1.0
	19	Ha.	+ 0.09	+ 0.4
	25	Ha.	− 0.09	+ 1.6
Mean			− 0.066	+ 0.60
Div., Flex., etc. .			. .	− 0.28

1 Draconis.

	h.	m.	s.
Right Ascension. . .	9	18	20.30
North Polar Distance .	8°	6′	9″.69

			s.	″
Feb.	16	F.	+ 1.21	+ 2.3
	26	Ha.	− 0.54	+ 0.5
Mar.	1	Ha.	− 0.04	− 2.0
	19	Ha.	− 0.08	+ 0.9
Mean			+ 0.138	+ 0.42
Div., Flex., etc. .			. .	+ 0.28

1 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	9	18	20.30
North Polar Distance .	351°	53′	50″.31

			s.	″
Aug.	6	E.	+ 0.25	− 2.3
Div., Flex., etc. .			. .	− 0.17

α Hydræ.

	h.	m.	s.
Right Ascension. . .	9	21	11.96
North Polar Distance .	98°	5′	46″.51

			s.	″
Feb.	2	Ha.	− 0.02	− 2.7
	10	F.	+ 0.07	− 1.2
	26	Ha.	− 0.05	+ 0.5
Mar.	19	Ha.	− 0.01	+ 0.8
	25	Ha.	+ 0.07	+ 1.1
July	13	F.	+ 0.02	+ 1.5
	20	F.	+ 0.04	+ 0.3
Mean			+ 0.017	+ 0.04
Div., Flex., etc. .			. .	+ 0.02

ε Leonis.

	h.	m.	s.
Right Ascension. . .	9	38	28.12
North Polar Distance .	65°	37′	42″.02

			s.	″
Feb.	2	Ha.	− 0.08	0.0
	16	F.	+ 0.01	+ 1.4
	25	F.	− 0.04	+ 0.5
	26	Ha.	− 0.13	+ 0.4
Mar.	1	Ha.	− 0.05	− 0.2
	2	E.	− 0.03	+ 0.8
	5	E.	− 0.05	+ 0.9
	9	F.	− 0.04	0.0
	10	Ha.	− 0.08	0.0
	19	Ha.	− 0.12	+ 0.9
	25	Ha.	− 0.08	+ 0.8
May	8	F.	− 0.06	+ 0.7
Mean			− 0.062	+ 0.52
Div., Flex., etc. .			. .	− 0.34

μ Leonis.

	h.	m.	s.
Right Ascension. . .	9	45	21.92
North Polar Distance .	63°	22′	55″.12

			s.	″
Feb.	2	Ha.	+ 0.01	− 0.7
	16	F.	+ 0.16	+ 1.5
	25	F.	0.00	− 1.5
	26	Ha.	− 0.03	− 0.3
Mar.	1	Ha.	. .	− 0.3
	2	E.	+ 0.03	0.0
	5	E.	0.00	− 0.2
	9	F.	+ 0.03	+ 0.3
	10	Ha.	+ 0.03	+ 0.4
	25	Ha.	+ 0.01	+ 1.2
Mean			+ 0.027	+ 0.04
Div., Flex., etc. .			. .	− 0.42

α Leonis.

	h.	m.	s.
Right Ascension . . .	10	1	26.83
North Polar Distance .	77°	23′	53″.53

α Leonis—Continued.

			s.	″
Feb.	2	Ha.	− 0.09	− 0.2
	21	E.	+ 0.01	− 0.5
	25	F.	+ 0.02	+ 0.3
Mar.	2	E.	0.00	+ 0.5
	3	F.	− 0.02	− 0.2
	5	E.	− 0.02	+ 1.3
	9	F.	− 0.02	− 0.3
	10	Ha.	− 0.08	− 1.0
	16	Ha.	− 0.06	+ 0.4
	19	Ha.	+ 0.03	+ 0.4
	24	F.	− 0.07	+ 1.6
May	8	F.	− 0.04	+ 0.8
July	8	F.	− 0.11	− 0.5
	13	F.	− 0.11	+ 1.5
	23	F.	− 0.07	+ 2.5
	28	E.	. .	+ 2.1
	29	F.	− 0.13	+ 2.5
Aug.	3	F.	− 0.01	+ 0.5
	6	E.	+ 0.02	+ 2.0
Mean			− 0.042	+ 0.72
Div., Flex., etc. .			. .	− 0.26

32 Ursæ Majoris.

	h.	m.	s.
Right Ascension . . .	10	8	33.82
North Polar Distance .	24°	14′	41″.14

			s.	″
Feb.	16	F.	+ 0.44	− 0.1
Mar.	2	E.	+ 0.07	− 2.3
	5	E.	0.00	− 1.3
	9	F.	+ 0.02	− 0.7
	10	Ha.	+ 0.14	+ 0.5
	19	Ha.	− 0.02	+ 0.1
	24	F.	− 0.04	+ 0.1
Mean			+ 0.087	− 0.53
Div., Flex., etc. .			. .	− 0.16

γ^1 Leonis.

	h.	m.	s.
Right Ascension . . .	10	12	48.12
North Polar Distance .	69°	30′	5″.78

			s.	″
Feb.	16	F.	0.00	+ 0.6
	21	E.	+ 0.04	− 0.5
	25	F.	− 0.01	− 0.2
Mar.	2	E.	+ 0.02	− 0.2
	3	F.	− 0.03	+ 0.1
	5	E.	+ 0.01	. .
	9	F.	− 0.05	− 0.5
	16	Ha.	0.00	+ 0.3
	24	F.	− 0.03	+ 0.4
April	22	E.	− 0.08	+ 2.5
July	8	F.	− 0.06	− 1.7
	23	F.	+ 0.05	+ 2.2
	28	E.	− 0.06	+ 2.8
	29	F.	− 0.08	+ 2.6
Aug.	3	F.	+ 0.02	+ 1.3
	6	E.	+ 0.09	+ 3.0
Mean			− 0.011	+ 0.85
Div., Flex., etc. .			. .	− 0.23

9 Draconis.

	h.	m.	s.
Right Ascension . . .	10	23	58.48
North Polar Distance .	13°	37′	8″.20

			s.	″
Feb.	16	F.	. .	+ 0.4
	25	F.	− 0.02	− 0.8
Mar.	5	E.	− 0.29	+ 0.8

9 DRACONIS—Continued.

				s.		″
Mar.	9	F.	−	0.27	−	2.0
	16	Ha.	−	0.01	−	1.0
	24	F.	−	0.34	−	0.2
April	25	E.	−	0.44	−	0.9
Mean			−	0.228	−	0.53
Div., Flex., etc. .				. .	+	0.05

9 DRACONIS, S. P.

	h.	m.	s.
Right Ascension . . .	10	23	58.48
North Polar Distance .	346°	22′	51″.80

				s.		″
July	16	E.	+	0.36	+	0.7
Div., Flex., etc. .				. .	−	0.25

ρ LEONIS.

	h.	m.	s.
Right Ascension . . .	10	25	57.92
North Polar Distance .	80°	1′	30″.62

				s.		″
Feb.	21	E.	+	0.01	+	0.5
	26	Ha.	+	0.05	−	0.3
Mar.	2	E.	−	0.07	+	0.9
	3	F.	−	0.12	−	0.1
	9	F.	−	0.04	−	1.4
	19	Ha.	−	0.01	−	0.3
May	8	F.	−	0.03	−	0.9
Mean			−	0.030	−	0.23
Div., Flex., etc. .				. .	−	0.27

l LEONIS.

	h.	m.	s.
Right Ascension . . .	10	42	25.33
North Polar Distance .	78°	46′	2″.42

				s.		″
Feb.	16	F.	+	0.08	+	0.2
	21	E.	+	0.02	−	0.9
	25	F.	−	0.01	−	0.3
	26	Ha.	−	0.04	−	0.9
Mar.	3	F.	+	0.10		0.0
	16	Ha.	+	0.02	+	0.7
	19	Ha.	−	0.03	+	0.1
	24	F.	−	0.04	+	2.5
	25	E.	−	0.03	+	0.3
Mean			−	0.014	+	0.19
Div., Flex., etc. .				. .	−	0.28

α URSÆ MAJORIS.

	h.	m.	s.
Right Ascension . . .	10	55	41.03
North Polar Distance .	27°	32′	52″.59

				s.		″
Feb.	16	F.	+	0.27	−	2.1
	26	Ha.	+	0.01	−	1.3
Mar.	1	Ha.		0.00	−	1.1
	9	F.	−	0.10	−	0.8
	24	F.	−	0.14	−	0.1
April	8	F.	+	0.15	−	1.2
	12	Ha.	+	0.13	+	0.3
	22	E.	−	0.01	+	1.1
	25	E.	−	0.02	−	4.8
May	4	E.	−	0.17	+	0.2
	9	Ha.	+	0.03	−	1.5
July	29	Ha.	+	0.25	+	0.6
Aug.	6	E.	+	0.44	+	1.0
Mean			+	0.065	−	0.75
Div., Flex., etc. .				. .	−	0.24

α URSÆ MAJORIS, (Ref.)

				s.		″
June	28	N.		. .	−	0.8
Div., Flex., etc. .				. .	+	0.22

δ LEONIS.

	h.	m.	s.
Right Ascension . . .	11	7	11.55
North Polar Distance .	68°	45′	51″.24

				s.		″
Feb.	26	Ha.	−	0.09	−	0.7
Mar.	1	Ha.	−	0.06		0.0
	9	F.	−	0.01	−	0.2
	16	Ha.	−	0.08	−	0.3
	19	Ha.	−	0.04	−	0.2
	21	F.	−	0.05	+	1.2
	24	F.	−	0.09	+	2.3
April	8	F.	−	0.09	−	2.2
	22	E.	−	0.06	+	1.7
	25	E.	−	0.09	+	2.2
	26	F.	−	0.11	+	2.6
May	9	Ha.	−	0.08	+	0.7
June	6	F.	−	0.15	+	2.6
July	23	F.	−	0.13	+	1.5
	29	Ha.	−	0.13	+	1.2
Aug.	2	E.	−	0.18	+	1.4
	6	E.	+	0.04	+	1.8
Mean			−	0.076	+	0.80
Div., Flex., etc. .				. .	−	0.24

δ LEONIS, (Ref.)

				s.		″
May	4	E.	−	0.18	+	1.3
Div., Flex., etc. .				. .	+	0.98

δ CRATERIS.

	h.	m.	s.
Right Ascension . . .	11	12	50.58
North Polar Distance .	104°	4′	30″.53

				s.		″
Feb.	25	F.	−	0.02	−	1.3
	26	Ha.	+	0.03	−	0.3
Mar.	1	Ha.	+	0.04	+	0.5
	9	F.	+	0.02	+	0.8
	16	Ha.	+	0.04	−	0.3
	19	Ha.	−	0.02		0.0
	24	F.	+	0.03	+	3.7
April	5	F.	+	0.09	+	1.3
	8	F.	+	0.04	+	0.6
	22	E.	+	0.06	+	2.6
	25	E.	+	0.04	+	0.6
	26	F.	+	0.05	+	2.1
May	4	F.	−	0.13	+	1.9
	9	Ha.	−	0.03		0.0
Mean			+	0.018	+	0.87
Div., Flex., etc. .				. .	−	0.29

τ LEONIS.

	h.	m.	s.
Right Ascension . . .	11	21	15.11
North Polar Distance .	86°	25′	40″.58

				s.		″
Feb.	16	F.	+	0.01	+	0.6
	25	F.	−	0.04	−	0.2
	26	Ha.	+	0.06	−	0.4
Mar.	1	Ha.	−	0.05	−	0.2
	9	F.	−	0.02	−	0.5
	19	Ha.	−	0.11	+	0.4
	21	F.	−	0.05	+	2.4
	24	F.	−	0.08	+	1.3
April	8	F.	−	0.04	+	0.4
	12	Ha.	−	0.02	+	2.2
	22	E.		0.00	+	2.2
	25	E.	−	0.05	+	0.2
April	26	F.	−	0.07	+	1.3
May	4	E.	−	0.01	+	0.5
	9	Ha.	−	0.01	+	0.1
Mean			−	0.032	+	0.69
Div., Flex., etc. .				. .	−	0.18

λ DRACONIS.

	h.	m.	s.
Right Ascension . . .	11	23	39.36
North Polar Distance .	19°	57′	7″.64

				s.		″
April	25	E.	+	0.08	−	1.9
May	4	E.	+	0.14	−	1.1
Mean			+	0.110	−	1.50
Div., Flex., etc. .				. .		0.00

υ LEONIS.

	h.	m.	s.
Right Ascension . . .	11	30	17.61
North Polar Distance .	90°	6′	21″.70

				s.		″
Feb.	16	F.	−	0.01	+	0.5
	26	Ha.		0.00	−	0.6
Mar.	1	Ha.	−	0.05	+	0.8
	24	F.	+	0.01	+	2.3
April	5	F.	−	0.01	+	1.8
	8	F.		0.00	−	0.1
	9	Ha.	−	0.07	+	0.5
	23	F.	−	0.12	+	0.4
	25	E.	+	0.04	+	1.4
	26	F.	+	0.02	+	1.0
May	4	E.	−	0.03	+	0.8
	9	Ha.	−	0.04	+	0.5
	21	Ha.	+	0.05	+	3.7
Mean			−	0.016	+	1.00
Div., Flex., etc. .				. .	−	0.17

β LEONIS.

	h.	m.	s.
Right Ascension . . .	11	42	25.64
North Polar Distance .	74°	42′	3″.69

				s.		″
Mar.	1	Ha.	−	0.01	+	0.9
	3	F.	+	0.10		0.0
	21	F.		0.00	+	0.9
April	5	F.	+	0.01	+	0.8
	8	F.	−	0.04		0.0
	9	Ha.	+	0.01	+	0.9
	12	Ha.	+	0.01	+	1.9
	22	E.	−	0.01	+	3.0
	23	F.	−	0.05	+	2.0
	25	E.	−	0.05	+	0.5
May	9	F.		0.00	+	1.0
July	26	F.	−	0.07	+	0.3
	30	F.	−	0.07		. .
Aug.	6	E.	+	0.05	+	2.6
	12	S.	−	0.04	+	1.6
Mean			−	0.011	+	1.11
Div., Flex., etc. .				. .	−	0.21

β LEONIS, (Ref.)

				s.		″
April	26	F.	−	0.10		. .
Div., Flex., etc. .				. .		. .

γ URSÆ MAJORIS.

	h.	m.	s.
Right Ascension . . .	11	46	58.91
North Polar Distance .	35°	34′	56″.91

			s.	″
Mar.	9	F.	+ 0.03	+ 0.1
	24	F.	− 0.08	+ 2.0
April	5	F.	− 0.43	+ 1.5
	9	Ha.	0.00	+ 0.7
	22	E.	+ 0.08	+ 1.1
	23	F.	− 0.09	+ 2.1
	26	F.	− 0.20	+ 2.9
	30	Ha.	− 0.04	+ 0.7
May	21	Ha.	+ 0.07	− 0.8
Aug.	2	E.	+ 0.22	+ 0.7
	6	E.	+ 0.32	+ 1.3
Mean			− 0.011	+ 1.12
Div., Flex., etc. .			. .	− 0.22

ο VIRGINIS.

	h.	m.	s.
Right Ascension . . .	11	58	35.22
North Polar Distance .	80°	32′	40″.85

			s.	″
Mar.	1	Ha.	− 0.04	+ 0.4
	9	F.	+ 0.01	− 0.5
April	5	F.	− 0.14	+ 1.1
	7	Ha.	− 0.01	+ 0.5
	8	F.	− 0.08	+ 0.1
	9	Ha.	− 0.13	+ 1.1
	12	Ha.	− 0.04	+ 1.1
	22	E.	− 0.05	+ 2.0
	23	F.	− 0.14	+ 1.7
	25	E.	− 0.10	+ 0.3
	26	F.	− 0.09	+ 1.9
	30	Ha.	− 0.06	+ 0.3
May	2	F.	− 0.01	− 0.3
	9	Ha.	− 0.06	− 0.6
	21	Ha.	− 0.07	+ 3.2
June	7	E.	+ 0.03	+ 0.6
Mean			− 0.061	+ 0.81
Div., Flex., etc. .			. .	− 0.25

4 DRACONIS.

	h.	m.	s.
Right Ascension . . .	12	6	4.84
North Polar Distance .	11°	39′	42″.05

			s.	″
Mar.	1	Ha.	+ 0.08	− 2.0
	18	F.	− 0.36	− 1.1
	19	Ha.	− 0.25	− 2.4
April	5	F.	− 0.49	− 0.6
	8	F.	− 0.13	− 2.0
	9	Ha.	− 0.22	− 2.0
	12	Ha.	− 0.05	− 2.2
	22	E.	− 0.33	− 0.4
	23	F.	− 0.09	+ 0.8
	25	E.	− 0.50	− 2.3
	30	Ha.	− 0.92	− 1.6
May	21	Ha.	+ 0.15	+ 0.3
Mean			− 0.259	− 1.29
Div., Flex., etc. .			. .	+ 0.13

η VIRGINIS.

	h.	m.	s.
Right Ascension . . .	12	13	15.34
North Polar Distance .	89°	56′	38″.21

			s.	″
Mar.	1	Ha.	+ 0.01	+ 0.1
	18	F.	− 0.07	+ 1.0
	24	F.	+ 0.09	+ 1.8
April	5	F.	− 0.07	+ 0.3
	6	Ha.	− 0.01	+ 0.9
	8	F.	− 0.08	+ 0.7
	9	Ha.	− 0.02	+ 0.8
	12	Ha.	+ 0.02	+ 1.6
	18	Ha.	− 0.02	+ 0.1
	22	E.	− 0.03	+ 2.7
	25	E.	− 0.01	+ 0.7
	30	Ha.	− 0.02	+ 0.6
May	2	F.	0.00	− 0.6
	21	Ha.	− 0.06	+ 2.3
June	6	F.	− 0.07	+ 1.5
Mean			− 0.023	+ 0.97
Div., Flex., etc. .			. .	− 0.17

β CORVI.

	h.	m.	s.
Right Ascension . . .	12	27	33.74
North Polar Distance	112°	40′	37″.36

			s.	″
Mar.	16	Ha.	− 0.04	+ 1.6
	18	F.	− 0.13	+ 2.6
	21	F.	− 0.04	+ 2.3
	24	F.	− 0.10	+ 0.7
April	6	Ha.	− 0.02	+ 3.3
	8	F.	+ 0.01	+ 2.5
	9	Ha.	+ 0.01	+ 3.6
	12	Ha.	+ 0.01	+ 2.3
	22	E.	0.00	+ 5.6
	25	E.	− 0.02	+ 0.5
	27	Ha.	− 0.09	+ 3.3
	30	Ha.	+ 0.07	+ 1.8
May	2	F.	+ 0.11	+ 0.9
	11	F.	+ 0.08	+ 2.6
	19	E.	− 0.06	+ 3.5
June	7	E.	+ 0.05	+ 3.9
Mean			− 0.010	+ 2.56
Div., Flex., etc. .			. .	− 0.58

κ DRACONIS.

	h.	m.	s.
Right Ascension . . .	12	27	55.29
North Polar Distance	19°	29′	42″.91

			s.	s.
April	5	F.	− 0.07	− 1.8
Div., Flex., etc. .			. .	0.00

κ DRACONIS, (Ref.)

			s.	″
April	23	F.	− 0.28	− 3.5
Div., Flex., etc..			. .	+ 0.14

32¹ CAMELOPARDALIS.

	h.	m.	s.
Right Ascension . . .	12	48	12.01
North Polar Distance .	15°	52′	50″.83

			s.	″
Mar.	18	F.	− 7.27	− 19.8
April	9	Ha.	− 7.83	− 20.6
	18	Ha.	− 8.23	− 21.1
	22	E.	− 8.41	− 18.5
	25	E.	− 8.50	− 18.7
	27	Ha.	− 7.21	− 21.8
	30	Ha.	− 8.94	− 19.8
May	19	E.	− 7.73	− 15.8
Mean			− 8.015	− 19.51
Div., Flex., etc. .			. .	+ 0.15

32² CAMELOPARDALIS.

	h.	m.	s.
Right Ascension. . .	12	48	12.01
North Polar Distance .	15°	52′	50″.83

			s.	″
Mar.	18	F.	+ 0.54	− 1.3
April	9	Ha.	+ 0.04	− 1.0
	18	Ha.	− 0.59	− 2.1
	22	E.	− 0.80	− 0.7
	25	E.	− 1.57	+ 0.9
	27	Ha.	+ 0.66	− 3.9
	30	Ha.	− 1.18	− 1.0
May	19	E.	− 0.41	+ 3.0
Mean			− 0.414	− 0.76
Div., Flex., etc. .			. .	+ 0.15

12 CANUM VENATICORUM.

	h.	m.	s.
Right Ascension. . .	12	49	56.60
North Polar Distance .	50°	58′	44″.07

			s.	″
Mar.	16	Ha.	− 0.03	+ 0.7
	19	Ha.	− 0.17	− 0.1
April	5	F.	− 0.04	+ 1.8
	8	F.	− 0.01	− 0.5
	23	F.	− 0.08	+ 1.9
	26	F.	− 0.09	+ 1.5
May	2	F.	− 0.10	+ 0.8
	11	F.	+ 0.09	+ 1.6
	14	F.	− 0.08	+ 1.9
June	6	F.	+ 0.08	+ 0.9
	7	E.	+ 0.01	+ 0.8
	23	F.	− 0.02	+ 2.6
Aug.	2	E.	+ 0.08	+ 2.8
Mean			− 0.028	+ 1.21
Div., Flex., etc. .			. .	− 0.10

θ VIRGINIS.

	h.	m.	s.
Right Ascension. . .	13	3	13.28
North Polar Distance .	94°	50′	38″.67

			s.	″
Mar.	16	Ha.	− 0.03	− 0.7
	19	Ha.	− 0.12	− 0.6
April	5	F.	− 0.03	+ 0.7
	7	Ha.	− 0.01	+ 0.4
	8	F.	0.00	0.0
	9	Ha.	+ 0.07	+ 0.6
	18	Ha.	− 0.05	− 1.4
	22	E.	− 0.09	+ 2.1
	23	F.	. .	+ 4.0
	26	F.	− 0.12	+ 0.8
May	2	F.	+ 0.01	+ 0.5
	9	Ha.	+ 0.01	− 0.7
	11	F.	− 0.02	− 1.1
	14	F.	− 0.03	− 1.0
	19	E.	− 0.02	+ 1.4
June	7	E.	− 0.14	+ 1.2
	21	S.	− 0.05	− 1.3
	22	E.	− 0.13	+ 1.0
	23	F.	− 0.06	+ 2.0
	24	S.	− 0.09	+ 1.3
July	5	F.	+ 0.01	+ 1.3
Mean			− 0.044	+ 0.50
Div., Flex., etc. .			. .	− 0.08

α VIRGINIS.

	h.	m.	s.
Right Ascension. . .	13	18	20.84
North Polar Distance .	100°	28′	54″.05

			s.	″
Mar.	18	F.	− 0.13	+ 0.7
April	8	F.	− 0.01	− 0.7
	22	E.	+ 0.07	+ 2.2

α VIRGINIS—Continued.

			s.	″
April	25	E.	+ 0.04	+ 1.3
	30	Ha.	− 0.07	+ 1.6
May	2	F.	+ 0.01	+ 0.9
	5	F.	+ 0.05	+ 0.9
	11	F.	− 0.09	+ 1.0
	19	E.	− 0.03	+ 1.6
June	6	F.	− 0.08	+ 1.3
	7	E.	− 0.03	+ 2.1
	8	F.	− 0.07	. .
	22	E.	− 0.14	+ 1.5
	23	F.	− 0.12	+ 1.8
July	5	F.	− 0.01	+ 0.7
	26	F.	− 0.03	+ 0.5
Aug.	2	E.	− 0.20	+ 0.4
	8	S.	− 0.05	. .
	12	F.	+ 0.01	− 0.4
Mean			− 0.046	+ 1.02
Div., Flex., etc. .			. .	− 0.09

ζ VIRGINIS.

	h.	m.	s.
Right Ascension. . .	13	28	4.23
North Polar Distance .	89°	55′	48″.15

			s.	″
April	26	F.	+ 0.07	+ 1.6
	27	Ha.	− 0.02	+ 1.3
	30	Ha.	− 0.02	+ 0.2
May	2	F.	+ 0.01	+ 1.1
	11	F.	− 0.01	+ 1.4
	14	F.	− 0.06	+ 1.7
	16	E.	− 0.11	+ 1.3
	19	E.	− 0.03	+ 2.2
June	7	E.	− 0.07	+ 2.6
	10	E.	− 0.07	+ 0.7
	22	E.	− 0.13	+ 1.3
	23	F.	0.00	+ 2.6
	30	S.	− 0.05	+ 2.4
July	5	F.	− 0.03	+ 2.9
Aug.	2	E.	− 0.02	+ 2.4
	12	F.	0.00	+ 1.7
Mean			− 0.034	+ 1.71
Div., Flex., etc. .			. .	− 0.17

η URSÆ MAJORIS.

	h.	m.	s.
Right Ascension. . .	13	42	24.99
North Polar Distance .	40°	2′	13″.53

			s.	″
April	27	Ha.	− 0.08	− 0.7
	30	Ha.	− 0.18	− 0.1
May	2	F.	− 0.14	− 0.5
	11	F.	− 0.08	+ 0.3
	16	E.	− 0.20	+ 0.6
	19	E.	− 0.03	+ 0.2
	20	F.	+ 0.08	+ 0.2
June	7	E.	− 0.10	+ 0.6
	8	F.	+ 0.03	− 0.8
	10	E.	− 0.03	− 3.7
	22	E.	− 0.21	+ 0.9
July	5	F.	− 0.08	− 0.5
Mean			− 0.084	− 0.29
Div., Flex., etc. .			. .	+ 0.04

η BOOTIS.

	h.	m.	s.
Right Ascension. . .	13	48	29.73
North Polar Distance .	70°	56′	57″.54

			s.	″
Feb.	20	Ha.	0.00	− 2.6
Mar.	18	F.	− 0.09	+ 1.5

η BOOTIS—Continued.

			s.	″
Mar.	24	F.	− 0.15	+ 1.4
April	5	F.	− 0.07	+ 2.7
	22	E.	− 0.01	+ 2.2
	26	Ha.	− 0.24	+ 0.7
	27	Ha.	− 0.05	+ 1.2
	30	Ha.	− 0.14	+ 1.8
May	2	F.	− 0.11	+ 2.2
	5	F.	− 0.14	+ 0.4
	11	F.	− 0.07	− 0.2
	12	Ha.	− 0.07	+ 1.0
	16	E.	− 0.10	+ 1.8
	19	E.	− 0.08	+ 2.2
June	7	E.	− 0.08	+ 1.3
	8	F.	− 0.12	. .
	10	E.	− 0.01	+ 1.0
	22	E.	− 0.18	+ 2.6
	30	S.	+ 0.01	. .
July	5	F.	− 0.07	+ 1.6
Mean			− 0.088	+ 1.26
Div., Flex., etc. .			. .	− 0.22

α DRACONIS.

	h.	m.	s.
Right Ascension. . .	14	0	52.26
North Polar Distance .	25°	0′	9″.60

			s.	″
Feb.	20	Ha.	+ 0.04	− 4.1
April	5	F.	− 0.18	+ 1.2
	25	E.	− 0.19	− 2.1
	27	Ha.	+ 0.06	− 1.8
	30	Ha.	− 0.29	− 1.9
May	5	F.	− 0.32	− 1.3
	11	F.	+ 0.04	− 2.1
	16	E.	− 0.20	− 2.3
	20	F.	+ 0.14	+ 0.4
June	7	E.	− 0.18	− 1.0
	10	E.	− 0.23	− 1.9
	22	E.	− 0.28	− 0.2
	30	S.	0.00	. .
July	5	F.	− 0.17	− 2.8
Mean			− 0.123	− 1.53
Div., Flex., etc. .			. .	− 0.17

α BOOTIS.

	h.	m.	s.
Right Ascension. . .	14	9	43.94
North Polar Distance .	70°	8′	21″.47

			s.	″
Feb.	20	Ha.	+ 0.01	− 1.6
April	5	F.	0.00	+ 2.5
	25	E.	− 0.02	+ 1.7
	27	Ha.	+ 0.09	+ 1.3
	30	Ha.	+ 0.01	+ 1.6
May	5	F.	+ 0.03	+ 1.3
	11	F.	− 0.02	+ 1.4
	12	Ha.	− 0.03	+ 1.8
	16	E.	− 0.04	+ 1.9
	20	F.	− 0.02	+ 2.1
June	6	F.	+ 0.03	+ 2.6
	7	E.	+ 0.03	+ 1.7
	10	E.	+ 0.06	+ 1.3
	22	E.	− 0.04	+ 1.7
	30	S.	+ 0.04	+ 1.6
July	5	F.	− 0.02	+ 0.6
Mean			+ 0.007	+ 1.47
Div., Flex., etc. .			. .	− 0.23

θ BOOTIS.

	h.	m.	s.
Right Ascension. . .	14	20	46.23
North Polar Distance .	37°	32′	50″.43

			s.	″
April	5	F.	0.00	+ 1.4
	27	Ha.	+ 0.19	− 0.2

θ BOOTIS—Continued.

			s.	″
May	5	F.	− 0.10	+ 1.7
	11	F.	+ 0.13	− 0.2
	16	E.	− 0.05	+ 0.2
	20	F.	+ 0.18	+ 1.4
June	7	E.	− 0.05	+ 0.6
	10	E.	− 0.01	+ 0.5
	22	E.	− 0.10	+ 1.9
July	5	F.	+ 0.04	+ 0.5
Mean			+ 0.023	+ 0.78
Div., Flex., etc. .			. .	− 0.09

5 URSÆ MINORIS.

	h.	m.	s.
Right Ascension. . .	14	27	49.83
North Polar Distance .	13°	43′	35″.37

			s.	″
April	5	F.	− 0.12	− 0.9
May	2	F.	+ 0.08	− 1.0
	14	F.	+ 0.26	− 1.7
	16	E.	− 0.45	− 0.8
	20	F.	+ 0.71	− 0.6
June	10	E.	− 0.15	− 0.9
	22	E.	− 0.09	+ 1.0
	30	S.	+ 0.12	− 1.8
Mean			+ 0.045	− 0.84
Div., Flex., etc. .			. .	+ 0.05

ε¹ BOOTIS.

	h.	m.	s.
Right Ascension . . .	14	39	18.60
North Polar Distance .	62°	22′	34″.44

			s.	″
April	5	F.	− 0.05	+ 0.8
May	2	F.	− 0.06	+ 1.4
	16	E.	. .	+ 1.0
	20	F.	− 0.03	+ 1.6
June	6	F.	+ 0.02	+ 2.6
	7	E.	− 0.09	+ 0.5
	10	E.	0.00	+ 2.2
	22	E.	+ 0.11	+ 0.6
	30	S.	− 0.02	. .
Aug.	12	F.	− 0.01	+ 1.0
Mean			− 0.014	+ 1.30
Div., Flex., etc. .			. .	− 0.41

α² LIBRÆ.

	h.	m.	s.
Right Ascension . . .	14	43	41.40
North Polar Distance	105°	29′	58″.48

			s.	″
Feb.	20	Ha.	+ 0.01	− 2.1
May	16	E.	0.00	+ 0.4
	20	F.	− 0.06	+ 1.8
June	6	F.	+ 0.03	+ 2.6
	10	E.	+ 0.10	+ 2.2
	14	F.	− 0.02	+ 1.2
	22	E.	− 0.07	+ 2.2
Aug.	12	F.	− 0.01	+ 1.9
Mean			− 0.002	+ 1.28
Div., Flex., etc. .			. .	− 0.27

β URSÆ MINORIS.

	h.	m.	s.
Right Ascension . . .	14	51	6.64
North Polar Distance .	15°	18′	48″.91

			s.	″
May	2	F.	− 0.31	− 1.6
	16	E.	− 0.02	− 3.1

β Ursæ Minoris—Continued.

				s.		″
May	20	F.	+	0.52		0.0
June	10	E.	—	0.12	—	1.6
	14	F.	+	0.21	—	1.9
	22	E.	—	0.19	+	0.1
Aug.	12	F.	+	0.11	—	1.3
Mean			+	0.028	—	1.34
Div., Flex., etc. .				. .	+	0.10

β Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension . . .	14	51	6.64
North Polar Distance	344°	41′	11″.09

				s.		″
Mar.	23	E.	—	0.24	+	2.3
	30	F.	+	0.34	+	4.2
Mean			—	0.050	+	3.25
Div., Flex., etc. .				. .	—	0.25

β Bootis.

	h.	m.	s.
Right Ascension . . .	14	57	2.95
North Polar Distance	. 49°	5′	43″.41

				s.		″
May	2	F.	+	0.02	+	1.0
	16	E.	—	0.03	—	0.3
	20	F.	+	0.04	+	1.6
June	6	F.	+	0.09	—	0.6
	10	E.	+	0.03	+	0.6
	22	E.	—	0.06	—	1.0
Aug.	12	F.	+	0.01	—	0.3
Mean			+	0.014	+	0.14
Div., Flex., etc. .				. .	+	0.07

β Libræ.

	h.	m.	s.
Right Ascension . . .	15	10	0.84
North Polar Distance	. 98°	54′	3″.79

				s.		″
May	2	F.	+	0.04	+	0.5
	11	F.		0.00	+	0.7
	16	E.	—	0.09	+	2.8
	20	F.	—	0.20	+	2.7
June	14	F.	—	0.07	+	1.8
	24	S.		0.00	+	0.6
	30	S.	—	0.08		. .
Aug.	12	F.	—	0.02	+	1.6
Mean			—	0.051	+	1.53
Div., Flex., etc. .				. .	+	0.01

μ¹ Bootis.

	h.	m.	s.
Right Ascension . . .	15	19	34.82
North Polar Distance	. 52°	9°	55″.65

				s.		″
Feb.	20	Ha.	—	0.01	—	2.1
	21	E.	—	0.20	—	0.9
	23	F.	—	0.10	+	1.7
May	2	F.	—	0.08	+	2.1
	11	F.	—	0.02		0.0
	14	F.		0.00	+	0.8
	16	E.		0.00	—	0.5
	20	F.	+	0.05	+	1.7
June	10	E.	—	0.06	+	1.3
	14	F.	+	0.01	—	0.3
	23	S.	+	0.01		. .
	30	S.	—	0.09		. .
Mean			—	0.041	+	0.38
Div., Flex., etc. .				. .	—	0.22

α Coronæ Borealis.

	h.	m.	s.
Right Ascension . . .	15	29	11.06
North Polar Distance	. 62°	50′	45″.65

				s.		″
Feb.	20	Ha.		0.00	—	2.8
	21	E.	+	0.06	—	1.1
April	23	F.	—	0.03	+	2.1
	26	F.		. .	+	1.1
May	2	F.	—	0.07	+	1.4
	11	F.	+	0.06	+	1.1
	16	E.	—	0.05	—	0.2
June	6	F.	+	0.05	+	0.9
	10	E.	+	0.03	+	1.6
	14	F.		0.00	+	0.3
	24	S.	+	0.03		. .
	30	S.	+	0.01		. .
Mean			+	0.008	+	0.44
Div., Flex., etc. .				. .	—	0.42

α Serpentis.

	h.	m.	s.
Right Ascension . . .	15	37	51.94
North Polar Distance	. 83°	9′	47″.92

				s.		″
Feb.	20	Ha.		0.00	—	2.0
	21	E.	+	0.05	—	0.7
April	23	F.		. .	+	2.1
	26	F.	+	0.05	+	2.2
May	2	F.	+	0.05	+	2.4
	11	F.	+	0.02	+	1.3
	14	F.	+	0.04	+	2.4
	16	E.	+	0.01	+	3.3
June	6	F.	+	0.01	+	3.0
	10	E.	—	0.03	+	2.0
	14	F.		0.00	+	1.7
	22	E.	—	0.04	+	2.6
	24	S.	+	0.08	+	1.0
	30	S.		. .	+	2.6
Aug.	4	S.	+	0.02	+	0.7
Mean			+	0.020	+	1.64
Div., Flex., etc. .				. .	—	0.21

ε Serpentis.

	h.	m.	s.
Right Ascension . . .	15	44	20.24
North Polar Distance	. 85°	7′	44″.29

				s.		″
Feb.	20	Ha.	—	0.06	—	3.5
	21	E.	+	0.03	—	0.9
April	26	Ha.	+	0.01	+	2.2
May	2	F.	—	0.05	+	1.2
	11	F.	+	0.01	+	1.1
	16	E.	—	0.05		. .
June	6	F.	—	0.02	+	1.1
	10	E.	—	0.05	+	2.8
	14	F.	—	0.05	—	0.3
	22	E.	—	0.13	+	1.6
	24	S.	+	0.02	+	0.8
July	8	F.	—	0.03	+	0.5
Mean			—	0.031	+	0.60
Div., Flex., etc. .				. .	—	0.19

ζ Ursæ Minoris.

	h.	m.	s.
Right Ascension . . .	15	48	45.35
North Polar Distance	. 11°	48′	24″.74

				s.		″
June	14	F.	+	0.06	—	0.5
	22	E.	—	0.44	+	1.4
Mean			—	0.190	+	0.45
Div., Flex., etc. .				. .	+	0.13

ε Coronæ Borealis.

	h.	m.	s.
Right Ascension . . .	15	52	12.44
North Polar Distance	. 62°	44′	37′.47

				s.		″
May	11	F.	—	0.07	+	0.2
June	14	F.	+	0.14	+	1.5
	22	E.	—	0.22	+	1.3
	30	S.	—	0.09	+	1.0
Aug.	5	S.	—	0.06	+	0.9
Mean			—	0.060	+	0.98
Div., Flex., etc. .				. .	—	0.42

δ Scorpii.

	h.	m.	s.
Right Ascension . . .	15	52	38.99
North Polar Distance	112°	14′	55″.85

				s.		″
May	14	F.	—	0.01	+	2.1
June	24	S.	+	0.04		. .
Mean			+	0.015	+	2.10
Div., Flex., etc. .				. .	—	0.55

β¹ Scorpii.

	h.	m.	s.
Right Ascension . . .	15	57	52.83
North Polar Distance	109°	26′	49″.93

				s.		″
May	11	F.	—	0.02	+	0.4
	14	F.	+	0.03	+	0.2
June	24	S.	+	0.02	—	0.1
	25	E.	—	0.14	+	2.1
July	8	F.	—	0.11	+	0.5
Mean			—	0.044	+	0.64
Div., Flex., etc. .				. .	—	0.41

Groombridge 2320.

	h.	m.	s.
Right Ascension . . .	16	5	58.46
North Polar Distance	. 21°	50′	50″.04

				s.		″
May	14	F.	+	0.19	+	1.3
Div., Flex., etc. .				. .	—	0.07

δ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	7	32.06
North Polar Distance	. 93°	21′	25″.72

				s.		″
Feb.	21	E.	+	0.10		0.0
May	11	F.	—	0.01	+	0.1
	15	Ha.	—	0.06	+	1.3
June	18	S.	+	0.01		. .
	25	E.	—	0.05	+	1.5
	30	S.	+	0.02	+	2.0
Mean			+	0.002	+	0.98
Div., Flex., etc. .				. .	—	0.25

τ Herculis.

	h.	m.	s.
Right Ascension. . .	16	15	49.92
North Polar Distance	. 43°	22′	33″.00

τ Herculis—Continued.

				s.		″
Feb.	21	E.	−	0.01	−	0.9
May	11	F.	+	0.19	−	0.1
	14	F.	+	0.10	−	0.4
	15	Ha.	+	0.07	+	0.1
June	18	S.	+	0.25		. .
	20	F.	+	0.22	+	2.1
	25	E.	+	0.12	+	0.4
	30	S.	+	0.18	+	0.9
Mean			+	0.140	+	0.30
Div., Flex., etc. .				. .	+	0.07

τ Herculis, (Ref.)

				s.		″
July	8	F.		. .	−	1.1
Div., Flex., etc. .				. .	+	0.44

α Scorpii.

	h.	m.	s.
Right Ascension. . .	16	21	26.41
North Polar Distance .	116°	8′	26″.67

				s.		″
May	11	F.	−	0.06	+	1.2
	14	F.	−	0.07	+	1.6
	15	Ha.	+	0.02		0.0
June	18	S.	−	0.07	+	0.5
	20	F.	−	0.15	+	1.1
	25	E.	−	0.20	+	2.2
Mean			−	0.088	+	1.10
Div., Flex., etc. .				. .	−	0.71

A Draconis.

	h.	m.	s.
Right Ascension. . .	16	28	14.95
North Polar Distance .	20°	57′	2″.41

				s.		″
June	13	S.	−	0.14		. .
July	8	F.	+	0.05	+	0.1
Mean			−	0.045	+	0.10
Div., Flex., etc. .				. .	−	0.02

ζ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	30	0.13
North Polar Distance .	100°	18′	3″.83

				s.		″
June	18	S.	−	0.03		. .
	20	F.	+	0.10	+	1.7
	24	S.		0.00	+	0.6
	25	E.		. .	+	2.4
Mean			+	0.023	+	1.57
Div., Flex., etc. .				. .	−	0.07

η Herculis.

	h.	m.	s.
Right Ascension. . .	16	38	26.39
North Polar Distance .	50°	49″	43″.43

				s.		″
June	11	S.	−	0.08		. .
	18	S.	−	0.14	+	0.2
	20	F.	+	0.02	+	2.2
	25	E.	−	0.19	+	2.4
	30	S.	−	0.04	+	1.8
July	19	E.	−	0.06	+	2.6
Aug.	8	Ha.		0.00	+	1.7
Mean			−	0.070	+	1.82
Div., Flex., etc. .				. .	−	0.08

κ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	51	30.90
North Polar Distance .	80°	25′	13″.75

				s.		″
Mar.	23	E.	−	0.04	−	0.4
May	15	Ha.	+	0.06	+	0.6
June	11	S.	−	0.02		. . .
	18	S.	+	0.08	−	0.2
	20	F.	−	0.01	+	2.0
	21	S.	+	0.11	+	0.7
	24	S.	+	0.03	+	1.8
	25	E.	−	0.06	+	2.0
Aug.	5	Ha.	−	0.01	+	1.4
	8	Ha.	+	0.06	+	1.7
Mean			+	0.020	+	1.03
Div., Flex., etc. .				. .	−	0.25

κ Ophiuchi, (Ref.)

				s.		″
July	19	E.	−	0.11		0.0
Div., Flex., etc. .				. .	+	0.70

d Herculis.

	h.	m.	s.
Right Ascension. . .	16	56	48.28
North Polar Distance .	56°	14′	29″.65

				s.		″
Mar.	23	E.	−	0.06	−	1.0
May	15	Ha.	+	0.16	+	1.1
June	20	F.	+	0.22	+	1.4
	24	S.	+	0.25		0.0
	25	E.	+	0.16	+	1.6
	30	S.	+	0.22	+	1.5
July	19	E.	+	0.07	+	1.4
Aug.	5	Ha.	+	0.12	+	1.4
Mean			+	0.142	+	0.92
Div., Flex., etc. .				. .	−	0.32

ε Ursæ Minoris.

	h.	m.	s.
Right Ascension. . .	16	59	22.83
North Polar Distance .	7°	45′	10″.91

				s.		″
Feb.	21	E.	−	0.59	−	1.6
Mar.	3	E.	−	1.51	−	1.9
Aug.	8	Ha.	−	0.31	−	0.3
Mean			−	0.803	−	1.27
Div., Flex., etc. .				. .	+	0.29

α¹ Herculis.

	h.	m.	s.
Right Ascension. . .	17	8	43.21
North Polar Distance .	75°	27′	33″.21

				s.		″
Mar.	23	E.	−	0.08	−	0.2
May	15	Ha.	+	0.03	+	0.8
June	18	S.		. .	+	2.1
	20	F.	−	0.06	+	0.7
	21	S.	+	0.10		. .
	24	S.	+	0.02	+	0.7
	25	E.	−	0.02	+	0.3
	30	S.		0.00	+	2.7
July	9	S.	+	0.02	+	0.5
Aug.	5	Ha.	−	0.04	+	1.6
	6	E.	−	0.15	+	0.4

α¹ Herculis—Continued.

				s.		″
Aug.	8	Ha.	−	0.01	+	1.0
	12	Ha.	+	0.07	−	0.5
Mean			−	0.010	+	0.84
Div., Flex., etc. .				. .	−	0.21

α¹ Herculis, (Ref.)

				s.		″
July	19	E.	−	0.04	−	0.8
Div., Flex., etc. .				. .	+	0.87

b Ophiuchi.

	h.	m.	s.
Right Ascension. . .	17	18	25.94
North Polar Distance .	114°	3′	8″.37

				s.		″
Mar.	23	E.	−	0.04		0.0
May	15	Ha.	+	0.06	+	2.3
June	20	F.		0.00	+	4.1
	23	F.	+	0.07	+	2.8
	25	E.	−	0.14	+	5.0
July	19	E.	−	0.10	+	2.0
Aug.	5	Ha.	−	0.08	+	3.4
	8	Ha.	+	0.06	+	2.6
	12	Ha.	+	0.08	+	0.8
	15	Ha.	+	0.02	+	4.4
Mean			−	0.007	+	2.74
Div., Flex., etc. .				. .	−	0.64

α Ophiuchi.

	h.	m.	s.
Right Ascension. . .	17	28	54.01
North Polar Distance .	77°	20′	34″.87

				s.		″
Mar.	23	E.	−	0.12	−	0.5
May	16	E.	−	0.06	+	0.7
June	11	S.	+	0.06		. .
	17	F.	+	0.03	−	0.1
	18	S.	+	0.09		. .
	20	F.	+	0.01	+	0.8
	21	S.	+	0.03		. .
	23	F.	+	0.05	+	0.8
	24	S.	+	0.08		. .
	25	E.	−	0.04	+	1.8
July	14	E.		0.00	+	0.7
Aug.	12	F.	+	0.04	−	1.3
	15	E.	+	0.09	+	0.2
Mean			+	0.020	+	0.34
Div., Flex., etc. .				. .	−	0.26

ω Draconis.

	h.	m.	s.
Right Ascension. . .	17	37	42.90
North Polar Distance .	21°	10′	57″.77

				s.		″
Mar.	23	E.	−	0.54	−	2.7
July	19	E.	−	0.11	−	2.5
Aug.	12	Ha.	−	0.05	−	3.4
Mean			−	0.023	−	2.87
Div., Flex., etc. .				. .	−	0.03

ω Draconis, (Ref.)

				s.		″
Aug.	5	Ha.	−	0.16	−	3.4
	6	E.		. .	+	0.5
Mean				. .	−	1.45
Div., Flex., etc. .				. .	+	0.19

μ^1 HERCULIS.

	h.	m.	s.
Right Ascension. . .	17	41	22.29
North Polar Distance .	62°	12′	4″.61

				s.		″
Mar.	23	E.	−	0.06	+	0.1
May	16	E.	−	0.07	+	0.4
June	23	F.		0.00	+	0.2
	25	E.	+	0.06	+	1.3
July	14	E.	−	0.08	−	0.4
	15	S.	−	0.04		. .
	18	S.	−	0.09	+	1.5
	21	S.	−	0.01		. .
	30	F.	−	0.02	−	0.3
Aug.	12	Ha.		0.00	−	0.9
	15	E.	−	0.12	+	1.2
Mean			−	0.039	+	0.34
Div., Flex., etc. .				. .	−	0.41

ψ^1 DRACONIS.

	h.	m.	s.
Right Ascension. . .	17	44	15.30
North Polar Distance .	17°	47′	16″.99

				s.		″
July	8	F.	+	0.48		0.0
	13	F.		0.00	−	0.8
Mean			+	0.240	−	0.40
Div., Flex., etc. .				. .	+	0.05

ψ^1 DRACONIS, (Ref.)

				s.		″
July	19	E.	+	0.01	+	1.5
Div., Flex., etc. .				. .	+	0.11

ψ^1 DRACONIS, S. P.

	h.	m.	s.
Right Ascension. . .	17	44	15.30
North Polar Distance .	342°	12′	43″.01

				s.		″
Mar.	9	F.	+	0.29	−	2.1
Div., Flex., etc. .				. .	−	0.29

γ DRACONIS.

	h.	m.	s.
Right Ascension. . .	17	53	35.40
North Polar Distance .	38°	19′	41″.60

				s.		″
Mar.	23	E.	−	0.19	−	1.7
June	23	F.	−	0.14	−	0.5
July	8	F.	−	0.17	−	0.5
	11	F.	−	0.13		0.0
	13	F.	−	0.01	+	0.3
	19	E.	−	0.13	−	0.1
	21	S.	+	0.05	−	1.3
	30	F.	−	0.16	−	0.8
Aug.	12	Ha.	−	0.13	−	1.4
	15	E.	−	0.08	+	0.9
Mean			−	0.109	−	0.51
Div., Flex., etc. .				. .	−	0.01

γ DRACONIS, (Ref.)

				s.		″
July	14	E.	−	0.16	−	0.9
Aug.	5	Ha.	−	0.20	−	3.0
Mean			−	0.180	−	1.95
Div., Flex., etc. .				. .	+	0.50

γ^2 SAGITTARII.

	h.	m.	s.
Right Ascension. . .	17	57	27.46
North Polar Distance .	120°	25′	21″.57

				s.		″
Mar.	23	E.	−	0.06	+	0.1
June	14	F.	−	0.07	+	0.9
July	8	F.	+	0.05	+	0.4
	11	F.	−	0.05	+	0.8
	13	F.	−	0.10	+	0.9
	14	E.	−	0.15	+	4.1
	19	E.	−	0.15	+	0.8
	30	F.	−	0.01	−	0.8
Aug.	1	Ha.	−	0.08		0.0
	12	Ha.		0.00		0.0
	15	E.	+	0.01	+	2.1
Mean			−	0.065	+	0.85
Div., Flex., etc. .				. .	−	0.76

μ^1 SAGITTARII.

	h.	m.	s.
Right Ascension. . .	18	5	59.34
North Polar Distance .	111°	5′	23″.68

				s.		″
Mar.	23	E.	−	0.08	+	0.4
June	17	F.	−	0.10	+	0.5
	20	F.		0.00	−	0.4
	25	E.	−	0.12	+	3.1
July	13	F.	−	0.02	−	0.7
	14	E.	−	0.10	+	0.1
	19	E.	−	0.10	+	4.8
	23	F.	+	0.06	+	1.7
Aug.	5	Ha.	+	0.03	+	1.4
	12	Ha.	+	0.07	+	0.3
	15	Ha.	+	0.09	+	0.8
Mean			−	0.026	+	1.09
Div., Flex., etc. .				. .	−	0.47

δ URSÆ MINORIS.

	h.	m.	s.
Right Ascension. . .	18	14	16.36
North Polar Distance .	3°	23′	38″.70

				s.		″
Mar.	23	E.	−	0.94	−	2.5
June	17	F.	+	0.41	+	0.4
	18	S.	−	0.65		. .
	20	F.	−	0.17		0.0
	21	S.	−	0.25		. .
	23	F.	−	0.49	+	0.5
	24	S.	−	0.43	−	1.2
	25	E.	−	0.04	+	0.9
	30	S.	−	1.04	+	0.1
July	8	F.	+	0.50	+	0.2
	9	S.	+	0.82	−	0.8
	11	F.		. .	+	0.6
	13	F.	−	0.31	−	1.0
	14	E.	−	0.20	−	0.9
	18	S.	−	0.52		. .
	19	E.	−	0.02	+	0.4
	21	S.	+	0.22		. .
	23	F.	−	0.56	+	0.1
	30	F.	−	0.07		0.0
Aug.	1	Ha.	+	1.41	+	0.6
	2	E.	+	0.31	−	1.6
	3	F.	+	0.27	+	0.6
	5	Ha.	+	0.63	+	1.7
	6	E.	−	0.21	−	0.7
	8	S.	−	1.06	−	0.7
	12	Ha.		. .	−	1.4
	15	Ha.	+	0.34		. .
	15	E.	−	0.15	+	1.5
Mean			+	0.085	−	0.14
Div., Flex., etc. .				. .	+	0.12

δ URSÆ MINORIS, S. P.

	h.	m.	s.
Right Ascension. . .	18	14	16.36
North Polar Distance .	356°	36′	21″.35

				s.		″
Feb.	3	E.		. .	+	1.2
	10	F.		. .	−	1.2
Mar.	10	Ha.	+	0.17	−	0.9
Mean				. .	−	0.30
Div., Flex., etc. .				. .	−	0.07

η SERPENTIS.

	h.	m.	s.
Right Ascension. . .	18	14	34.95
North Polar Distance .	92°	55′	47″.66

				s.		″
July	18	S.	+	0.07	+	1.9
Div., Flex., etc. .				. .	−	0.08

1 AQUILÆ.

	h.	m.	s.
Right Ascension. . .	18	28	7.90
North Polar Distance .	98°	19′	56″.07

				s.		″
June	17	F.	+	0.05	−	0.1
	21	S.	+	0.06	+	1.1
	23	F.	+	0.14		0.0
	25	E.		0.00	+	1.1
	30	S.		. .	+	1.4
July	9	S.	+	0.07	+	1.7
	11	F.	+	0.12	+	1.2
	13	F.	+	0.19	+	1.3
	14	E.		. .	+	1.8
	18	S.	+	0.06	+	1.8
	19	E.	−	0.05	+	1.3
	21	S.	+	0.11	+	1.8
	23	F.	+	0.07	+	1.0
	30	F.	+	0.09		. .
Aug.	1	Ha.	+	0.05	+	0.5
	6	E.	−	0.07	−	0.1
	12	Ha.	+	0.08	−	1.9
	15	Ha.	+	0.08	+	0.4
Mean			+	0.066	+	0.84
Div., Flex., etc. .				. .	+	0.02

1 AQUILÆ, (Ref.)

				s.		″
Aug.	5	Ha.	−	0.16	−	1.7
Div., Flex., etc. .				. .	+	0.30

α LYRÆ.

	h.	m.	s.
Right Ascension. . .	18	32	32.21
North Polar Distance .	51°	20′	9″.00

				s.		″
Feb.	6	F.	+	0.02	+	0.5
June	17	F.	+	0.03	+	0.4
	23	F.	−	0.07	+	0.6
	24	S.	−	0.04		. .
July	9	S.	−	0.03		. .
	11	F.	+	0.01	+	0.5
	13	F.	+	0.09	−	0.7
	18	S.	−	0.06	−	1.5
	19	E.	+	0.02	+	0.3
	21	S.	+	0.10		. .
	30	F.	−	0.05	+	0.5
Aug.	1	Ha.	−	0.03	−	0.5
	3	F.	+	0.04	−	0.3
	6	E.	+	0.03	−	1.9
	12	Ha.	−	0.11	−	0.6
	15	E.	−	0.04	+	1.3
Mean			−	0.006	−	0.11
Div., Flex., etc. .				. .	−	0.13

β LYRÆ.

	h.	m.	s.
Right Ascension . . .	18	45	16.81
	°	′	″
North Polar Distance .	56	47	11.91

				s.		″
Mar.	23	E.	+	0.01	−	0.9
June	23	F.	+	0.04	+	1.0
	25	E.	−	0.04		. .
July	9	S.	+	0.02	+	0.1
	13	F.	+	0.07	+	0.2
	14	E.	+	0.09	−	0.1
	19	E.	−	0.01	+	1.8
	23	F.	+	0.07	+	1.7
	30	F.	+	0.05	−	1.0
Aug.	3	F.	+	0.03	+	0.5
	6	E.	−	0.03	+	0.1
	8	S.	+	0.05		0.0
	15	Ha.	+	0.04	+	0.8
Mean			+	0.030	+	0.35
Div., Flex., etc. .				. .	−	0.32

σ SAGITTARII.

	h.	m.	s.
Right Ascension . . .	18	47	12.22
	°	′	″
North Polar Distance	116	27	18.13

				s.		″
June	17	F.	−	0.15	+	1.3
	23	F.	+	0.01	+	3.3
July	23	F.	−	0.06		. .
Aug.	1	Ha.	−	0.05	+	1.0
	6	E.	−	0.08		. .
Mean			−	0.066	+	1.87
Div., Flex., etc. .				. .	−	0.72

50 DRACONIS.

	h.	m.	s.
Right Ascension . . .	18	50	33.11
	°	′	″
North Polar Distance .	14	43	15.71

				s.		″
July	15	S.	+	0.31		. .
Aug.	6	E.	+	0.17		. .
Mean			+	0.240		. .

ζ AQUILÆ.

	h.	m.	s.
Right Ascension . . .	18	59	26.03
	°	′	″
North Polar Distance .	76	19	39.20

				s.		″
June	14	F.	+	0.09	+	1.3
	17	F.	+	0.08	+	0.6
	23	F.	+	0.08	+	1.1
July	9	S.	+	0.13		. .
	11	F.	−	0.04	+	1.4
	15	S.	+	0.09	+	2.0
	23	F.	−	0.06	+	1.3
Aug.	1	Ha.	+	0.13	+	0.7
	3	F.	+	0.13	+	1.6
	6	E.	−	0.15	−	0.1
	8	Ha.	+	0.08	+	1.1
	15	E.	+	0.11	+	2.1
Mean			+	0.056	+	1.19
Div., Flex., etc. .				. .	−	0.22

ζ AQUILÆ, (Ref.)

				s.		″
July	14	E.	+	0.16		0.0
Div., Flex., etc. .				. .	+	0.85

d SAGITTARII.

	h.	m.	s.
Right Ascension . . .	19	10	1.64
	°	′	″
North Polar Distance	109	10	51.02

				s.		″
June	17	F.	−	0.03	+	3.5
	23	F.	+	0.10	+	4.0
July	11	F.	+	0.09	+	4.6
Aug.	1	Ha.	+	0.06	+	3.3
	5	Ha.	−	0.01	+	3.3
	6	E.	−	0.13	+	3.5
	8	Ha.	+	0.06	+	2.8
	15	E.	+	0.06	+	5.3
Mean			+	0.025	+	3.79
Div., Flex., etc. .				. .	−	0.41

δ DRACONIS.

	h.	m.	s.
Right Ascension : . .	19	12	31.11
	°	′	″
North Polar Distance .	22	34	2.18

				s.		″
June	23	F.	−	0.05	+	1.9
Aug.	1	Ha.	−	0.02	−	0.9
	6	E.	+	0.30	−	1.7
Mean			+	0.077	−	0.23
Div., Flex., etc. .				. .	−	0.11

δ DRACONIS, (Ref.)

				s.		″
July	14	E.	+	0.01	−	0.9
Div., Flex., &c. .				. .	+	0.24

τ DRACONIS.

	h.	m.	s.
Right Ascension . . .	19	18	2.25
	°	′	″
North Polar Distance .	16	53	12.60

				s.		″
Aug.	6	E.	+	0.26	−	0.5
Div., Flex., etc. .				. .	+	0.08

τ DRACONIS, S. P.

	h.	m.	s.
Right Ascension . . .	19	18	2.25
	°	′	″
North Polar Distance	343	6	47.40

				s.		″
Mar.	10	Ha.	+	0.19	+	0.7
	11	E.	+	0.31		. .
Mean			+	0.250	+	0.70
Div., Flex., etc. .				. .	−	0.27

δ AQUILÆ.

	h.	m.	s.
Right Ascension . . .	19	18	56.56
	°	′	″
North Polar Distance .	87	8	31.42

				s.		″
Mar.	24	F.	+	0.11	+	0.3
June	14	F.	+	0.17	+	1.3
July	11	F.	+	0.12	+	1.5
	13	F.	+	0.12	+	0.2
	15	S.	+	0.09	+	0.3
Aug.	5	Ha.	+	0.03	+	0.6
	12	Ha.	+	0.02	−	0.4
	15	Ha.	+	0.04	+	1.2
Mean			+	0.088	+	0.62
Div., Flex., etc. .				. .	−	0.18

κ AQUILÆ.

	h.	m.	s.
Right Ascension . . .	19	29	53.77
	°	′	″
North Polar Distance .	97	18	49.65

				s.		″
July	8	F.	+	0.10	+	1.5
	11	F.	+	0.07	+	3.1
	13	F.	−	0.01	+	1.1
	14	E.	+	0.08	+	2.3
	15	S.	+	0.06	+	1.9
	23	F.	+	0.12	+	1.2
	30	F.	+	0.15	+	0.8
Aug.	1	Ha.	+	0.05	+	0.4
	3	F.	+	0.02	+	1.7
	5	Ha.	+	0.08	+	2.1
	6	E.	−	0.14	+	0.4
	8	Ha.	+	0.07	+	1.1
	12	S.	+	0.14	+	2.0
	15	E.	+	0.08	+	2.5
Mean			+	0.062	+	1.58
Div., Flex., etc. .				. .	−	0.01

γ AQUILÆ.

	h.	m.	s.
Right Ascension . . .	19	40	7.73
	°	′	″
North Polar Distance .	79	42	5.44

				s.		″
Feb.	18	F.	+	0.13	+	0.3
	24	F.	+	0.03	+	4.8
June	17	F.		0.00	+	0.5
July	8	F.	+	0.07	−	0.1
	11	F.	+	0.02	+	1.5
	13	F.	+	0.06	+	0.2
	15	S.	+	0.09		. .
	23	F.	−	0.03	+	0.6
Aug.	1	Ha.	+	0.01	−	0.3
	3	F.	+	0.03	+	0.2
	5	Ha.	−	0.03	+	0.6
	6	E.	+	0.03	+	1.5
	8	Ha.	−	0.02	+	0.3
	12	S.	+	0.04	−	0.8
	15	Ha.	−	0.04	+	1.7
Mean			+	0.026	+	0.79
Div., Flex., etc. .				. .	−	0.27

γ AQUILÆ, (Ref.)

				s.		″
July	14	E.	+	0.07	−	1.8
Div., Flex., etc. .				. .	+	0.75

α AQUILÆ.

	h.	m.	s.
Right Ascension . . .	19	44	26.39
	°	′	″
North Polar Distance .	81	28	22.62

				s.		″
Feb.	2	E.	+	0.05	−	0.3
	18	F.	−	0.07	−	0.5
	24	F.	+	0.03	−	1.3
Mar.	24	F.		0.00	+	1.6
May	19	E.	+	0.04	−	0.3
June	17	F.	+	0.01	−	1.3
July	8	F.	+	0.08	−	0.8
	11	F.	−	0.01	+	0.7
	13	F.		0.00	+	1.3
	14	E.	+	0.07	−	0.2
	15	S.	−	0.06	−	0.8
	23	F.	+	0.02	−	1.7
	30	F.	+	0.03	−	1.0
Aug.	1	Ha.	−	0.02	−	0.7
	3	F.		. .	−	0.2
	5	Ha.	+	0.04	+	0.1
	8	Ha.	−	0.02	+	0.1

α Aquilæ—Continued.

				s.		″
Aug.	12	S.	−	0.02		. .
	15	E.	+	0.03	+	1.6
Mean			+	0.011	−	0.20
Div., Flex., etc. .				. .	−	0.22

ε Draconis.

	h.	m.	s.
Right Ascension . . .	19	48	35.96
	°	′	″
North Polar Distance .	20	3	48.76

				s.		″
July	13	F.	+	0.12	−	0.9
Aug.	1	Ha.	−	0.11	−	1.8
Mean			+	0.005	−	1.35
Div., Flex., etc. .				. .		0.00

ε Draconis, S. P.

	h.	m.	s.
Right Ascension . . .	19	48	35.96
	°	′	″
North Polar Distance	339	56	11.24

				s.		″
Mar.	5	E.	+	0.21	+	3.8
	11	E.	+	0.31		. .
	18	F.	+	0.38		. .
Mean			+	0.300	+	3.80
Div., Flex., etc. .				. .	−	0.33

β Aquilæ.

	h.	m.	s.
Right Ascension . . .	19	48	55.62
	°	′	″
North Polar Distance .	83	4	57.09

				s.		″
Mar.	24	F.	+	0.11	+	1.7
May	19	E.	+	0.02	+	1.3
June	17	F.	+	0.03	−	0.5
July	8	F.	+	0.06	+	1.5
	11	F.	+	0.02	+	1.6
	14	E.	+	0.12	+	1.1
	15	S.	+	0.02		. .
	23	F.	+	0.06	+	0.8
	30	F.	+	0.07	+	1.0
Aug.	3	F.	+	0.07	+	1.5
	5	Ha.	+	0.09	+	0.6
	6	E.		0.00		0.0
	8	Ha.	+	0.04	+	1.7
Mean			+	0.055	+	1.02
Div., Flex., etc. .				. .	−	0.18

λ Ursæ Minoris.

	h.	m.	s.
Right Ascension . . .	19	54	17.28
	°	′	″
North Polar Distance .	1	4	56.08

				s.		″
May	19	E.	+	2.02	−	0.9
June	17	F.	−	2.17	−	0.4
July	14	E.	−	0.99	−	2.5
Aug.	1	Ha.	−	0.87	−	1.2
	5	Ha.	−	4.26	−	0.5
	6	E.	+	1.48	−	0.9
	8	S.	−	0.45		. .
	12	S.	−	1.32	−	1.1
Mean			−	0.820	−	1.07
Div., Flex., etc. .				. .		0.00

λ Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension . .	19	54	17.28
	°	′	″
North Polar Distance .	358	55	3.92

				s.		″
Feb.	2	Ha.		. .	−	0.9
	25	F.	+	2.27	−	0.2
	26	Ha.		. .	+	1.1
Mar.	2	E.		. .		0.0
	3	F.	−	3.42		. .
	5	E.		. .	+	1.5
	10	Ha.	−	0.47	+	0.1
	18	F.	+	1.21	+	0.9
	25	Ha.	+	0.40	+	1.4
April	8	F.	−	2.19	+	0.5
Mean			−	0.367	+	0.49
Div., Flex., etc. .				. .	−	0.03

τ Aquilæ.

	h.	m.	s.
Right Ascension . . .	19	57	47.33
	°	′	″
North Polar Distance .	83	5	12.54

				s.		″
July	8	F.	+	0.09	+	1.2
	13	F.	+	0.01	+	1.1
	15	S.	+	0.13		. .
	30	F.	+	0.03	+	0.6
Aug.	3	F.	−	0.05	+	2.1
Mean			+	0.042	+	1.25
Div., Flex., etc. .				. .	−	0.21

α^2 Capricorni.

	h.	m.	s.
Right Ascension . . .	20	10	50.37
	°	′	″
North Polar Distance	102	56	44.09

				s.		″
May	19	E.	+	0.04	+	0.7
June	17	F.	+	0.01	+	1.0
July	11	F.	+	0.03	+	1.1
	13	F.	+	0.11	+	0.9
	14	E.		0.00	−	0.6
	30	F.	+	0.10	+	0.5
Aug.	1	Ha.	+	0.10	+	1.2
	5	Ha.	+	0.06	+	0.6
	6	E.	−	0.06	−	0.4
Mean			+	0.043	+	0.56
Div., Flex., etc. .				. .	−	0.26

κ Cephei.

	h.	m.	s.
Right Ascension . . .	20	13	13.11
	°	′	″
North Polar Distance .	12	40	53.87

				s.		″
July	11	F.	+	0.29	−	1.2
	13	F.	−	0.21	−	1.2
Aug.	1	Ha.	−	0.13	−	2.7
	6	E.	+	0.17	+	0.1
	12	S.	−	0.14	−	2.3
Mean			−	0.004	−	1.46
Div., Flex., etc. .				. .	+	0.08

κ Cephei, S. P.

	h.	m.	s.
Right Ascension . . .	20	13	13.11
	°	′	″
North Polar Distance .	347	19	6.13

κ Cephei, S. P.—Continued.

				s.		″
Mar.	18	F.	+	0.36	+	2.5
	25	Ha.	+	0.30	+	2.3
Mean			+	0.330	+	2.40
Div., Flex., etc. .				. .	−	0.26

π Capricorni.

	h.	m.	s.
Right Ascension . . .	20	19	52.66
	°	′	″
North Polar Distance	108	38	7.80

				s.		″
May	19	E.	+	0.03	+	0.8
June	17	F.	−	0.11	+	0.7
July	13	F.	+	0.04	+	1.4
	23	F.		0.00	+	2.7
	30	F.	+	0.05	+	1.7
Aug.	1	Ha.	+	0.13	+	1.6
	12	S.	+	0.04	+	1.0
Mean			+	0.026	+	1.41
Div., Flex., etc. .				. .	−	0.39

ε Delphini.

	h.	m.	s.
Right Ascension . . .	20	27	0.09
	°	′	″
North Polar Distance .	79	8	12.34

				s.		″
July	11	F.	+	0.02	+	3.2
Aug.	12	S.	+	0.06	−	0.2
Mean			+	0.040	+	1.50
Div., Flex., etc. .				. .	−	0.28

Groombridge 3241, S. P.

	h.	m.	s.
Right Ascension . . .	20	30	32.93
	°	′	″
North Polar Distance .	17	54	31.80

				s.		″
Feb.	21	E.	+	1.16	−	2.1
	25	F.	+	0.23		. .
	26	Ha.	−	0.10	−	0.2
Mar.	1	Ha.	−	0.09	−	2.4
	2	E.	+	0.03	−	1.3
	5	E.	+	0.41	+	1.8
	18	F.	+	0.18		. .
	25	Ha.	+	0.26	+	1.1
Mean			+	0.260	−	0.52
Div., Flex., etc. .				. .	−	0.29

α Cygni.

	h.	m.	s.
Right Ascension . . .	20	37	0.02
	°	′	″
North Polar Distance .	45	10	59.27

				s.		″
Feb.	2	E.	+	0.12	−	1.5
	16	Ha.		. .	+	0.5
	23	E.		. .	−	1.1
Mar.	7	E.	+	0.09	−	0.7
	8	F.	+	0.11	−	1.7
	10	E.	+	0.05	−	1.2
May	19	E.	+	0.13	−	0.8
Mean			+	0.100	−	0.93
Dix., Flex., etc. .				. .	+	0.07

μ AQUARII.

	h.	m.	s.
Right Ascension . . .	20	45	38.38
North Polar Distance .	99°	28′	8″.35

				s.		″
July	13	F.	+	0.13	+	1.0
Div., Flex., etc. .				. .	−	0.02

ν CYGNI.

	h.	m.	s.
Right Ascension . . .	20	52	19.61
North Polar Distance .	49°	19′	54″.76

				s.		″
July	13	F.	+	0.07	+	0.5
	23	F.	−	0.01	+	2.0
Mean			+	0.030	+	1.25
Div., Flex., etc. .				. .	+	0.05

12-YEAR CATALOGUE 1879, S. P.

	h.	m.	s.
Right Ascension . . .	20	53	24.04
North Polar Distance	350°	3′	46″.96

				s.		″
Feb.	25	F.	+	0.36	−	1.1
	26	Ha.	−	0.55	+	1.5
Mar.	2	E.	−	0.16	+	0.1
	5	E.	+	0.86	+	2.3
	16	Ha.	+	2.19		. .
	18	F.	−	0.09	+	1.0
	25	Ha.	+	0.11	+	2.1
Mean			+	0.389	+	0.98
Div., Flex., etc. .				. .	−	0.25

61 CYGNI.

	h.	m.	s.
Right Ascension . . .	21	1	4.30
North Polar Distance .	51°	53′	18″.23

				s.		″
Aug.	1	Ha.	−	0.01	−	0.5
	6	E.	−	0.12	+	0.8
Mean			−	0.065	+	0.15
Div., Flex., etc. .				. .	−	0.18

ζ CYGNI.

	h.	m.	s.
Right Ascension . . .	21	7	24.23
North Polar Distance .	60°	18′	17″.92

				s.		″
Feb.	20	E.	+	0.18	+	5.0
Mar.	7	E.		. .	+	0.3
	22	E.	+	0.05	+	1.6
Aug.	1	Ha.	+	0.05	+	0.5
	3	F.	+	0.06	−	0.1
	6	E.	+	0.09	+	1.1
Mean			+	0.086	+	1.40
Div., Flex., etc. .				. .	−	0.38

α CEPHEI.

	h.	m.	s.
Right Ascension . . .	21	15	28.52
North Polar Distance .	27°	57′	54″.00

				s.		″
Mar.	7	E.	+	0.14	−	0.4
	22	E.	+	0.02	−	0.3
Mean			+	0.080	−	0.35
Div., Flex., etc. .				. .	−	0.25

α CEPHEI, (Ref.)

				s.		″
Aug.	1	Ha.	−	0.13	−	1.9
	3	F.		. .	−	0.1
Mean			−	0.130	−	1.00
Div., Flex., etc. .				. .	+	0.23

ι PEGASI.

	h.	m.	s.
Right Ascension. . .	21	16	4.54
North Polar Distance .	70°	45′	0″.18

				s.		″
Aug.	6	E.	−	0.14	+	1.7
	12	S.	+	0.01	+	0.4
Mean			−	0.065	+	1.05
Div., Flex., etc. .				. .	−	0.22

β AQUARII.

	h.	m.	s.
Right Ascension. . .	21	24	42.83
North Polar Distance .	96°	8′	28″.88

				s.		″
April	23	F.	+	0.04	+	1.8
Aug.	6	E.	−	0.09	−	0.1
	12	S.	+	0.07	+	0.9
Mean			+	0.007	+	0.87
Div., Flex., etc. .				. .	−	0.07

β CEPHEI.

	h.	m.	s.
Right Ascension. . .	21	26	58.36
North Polar Distance .	20°	0′	35″.93

				s.		″
Mar.	7	E.		. .	−	1.4
	22	E.	+	0.62	−	1.5
Aug.	6	E.	+	0.22	−	0.8
Mean			+	0.420	−	1.23
Div., Flex., etc. .				. .		0.00

β CEPHEI, S. P.

	h.	m.	s.
Right Ascension. . .	21	26	58.36
North Polar Distance .	339°	59′	24″.07

				s.		″
Feb.	25	F.	+	0.08	+	1.8
Mar.	1	Ha.	−	0.03	+	2.9
	5	E.	+	0.58	+	4.7
Mean			+	0.210	−	3.13
Div., Flex., etc. .				. .	−	0.33

ξ AQUARII.

	h.	m.	s.
Right Ascension. . .	21	30	49.77
North Polar Distance .	98°	26′	8″.19

				s.		″
July	14	E.	+	0.06	+	0.5
Aug.	6	E.	−	0.09	−	0.1
	12	S.	+	0.06	+	0.4
Mean			−	0.010	+	0.27
Div., Flex., etc. . .				. .	+	0.02

ε PEGASI.

	h.	m.	s.
Right Ascension. . .	21	37	48.08
North Polar Distance .	80°	43′	10″.62

				s.		″
Feb.	18	F.	−	0.04	+	1.1
	24	F.	+	0.08	−	1.1
Mar.	9	Ha.	+	0.04	+	0.3
	17	F.	−	0.05	+	0.3
	22	E.	+	0.26	+	0.6
	23	F.	+	0.04	−	0.7
April	23	F.		0.00		. .
July	14	E.	−	0.01	−	0.1
Aug.	6	E.	−	0.09	+	0.3
	12	S.	−	0.04	−	0.2
Mean			+	0.019	+	0.06
Div., Flex., etc. .				. .	−	0.24

ε PEGASI, (Ref.)

				s.		″
Aug.	3	F.		. .	−	0.1
Div., Flex., etc. .				. .	+	0.68

11 CEPHEI, S. P.

	h.	m.	s.
Right Ascension. . .	21	40	0.55
North Polar Distance .	340°	42′	46″.53

				s.		″
Mar.	2	E.	−	0.45	−	0.2
Div., Flex., etc. .				. .	−	0.35

μ CAPRICORNI.

	h.	m.	s.
Right Ascension. . .	21	46	12.38
North Polar Distance .	104°	9′	42″.99

				s.		″
July	14	E.	+	0.08	+	0.5
	15	S.	+	0.01	+	2.4
	16	E.	−	0.04	+	2.6
Aug.	6	E.	−	0.06	+	1.5
Mean			−	0.002	+	1.75
Div., Flex., etc. .				. .	−	0.29

79 DRACONIS.

	h.	m.	s.
Right Ascension. . .	21	51	14.96
North Polar Distance .	16°	54′	45″.61

				s.		″
July	16	E.	−	0.23	+	0.30
Div., Flex., etc. .				. .	+	0.07

79 DRACONIS, S. P.

	h.	m.	s.
Right Ascension. . .	21	51	14.96
North Polar Distance .	343°	5′	14″.39

				s.		″
Mar.	2	E.	−	0.35	−	0.5
	5	E.	+	0.61	−	4.0
	9	F.	−	0.09	+	1.1
	10	E.	−	0.04	+	2.6
	19	Ha.	−	0.35	+	2.8
Mean			−	0.044	+	0.40
Div., Flex., etc. .				. .	−	0.27

α AQUARII.

	h.	m.	s.
Right Ascension. . .	21	59	6.36
North Polar Distance .	90°	57′	0″.64

α AQUARII—Continued.

				s.		″
Mar.	17	F.	+	0.13		. .
April	23	F.	+	0.08	+	0.7
June	17	F.		0.00	—	0.9
July	15	S.	+	0.01	+	0.3
Aug.	12	S.	+	0.02		. .
Mean			+	0.048	+	0.03
Div., Flex., etc. .				. .	—	0.18

α AQUARII, (Ref.)

				s.		″
Aug.	3	F.	+	0.05	+	0.4
Div., Flex., etc. .				. .	+	0.38

θ AQUARII.

	h.	m.	s.
Right Ascension. . .	22	9	58.34
North Polar Distance .	98°	25′	45″.97

				s.		″
July	15	S.	—	0.07	+	1.2
	16	E.	—	0.03	+	1.0
Aug.	12	S.	—	0.03	+	0.3
Mean			—	0.043	+	0.83
Div., Flex., etc. .				. .	+	0.02

π AQUARII.

	h.	m.	s.
Right Ascension. . .	22	18	38.24
North Polar Distance .	89°	16′	52″.55

				s.		″
June	17	F.	—	0.04	—	1.0
July	15	S.		0.00		. .
	16	E.	+	0.05	+	1.0
Aug.	3	F.	+	0.06	+	1.0
	12	S.	+	0.08		. .
Mean			+	0.030	+	0.33
Div., Flex., etc. .				. .	—	0.17

η AQUARII.

	h.	m.	s.
Right Ascension. . .	22	28	40.52
North Polar Distance .	90°	47′	11″.71

				s.		″
June	17	F.	+	0.01	+	1.3
July	15	S.		0.00	—	0.4
	17	E,	+	0.08	+	0.7
Aug.	12	S.	+	0.01	—	0.3
Mean			+	0.025	+	0.32
Div., Flex., etc. .				. .	—	0.18

226 CEPHEI, S. P.

	h.	m.	s.
Right Ascension. . .	22	29	58.93
North Polar Distance .	345°	33′	23″.30

				s.		″
Feb.	26	Ha.		. .	—	1.2
Mar.	3	F.	—	0.08	+	1.3
	16	Ha.	—	0.26	+	2.5
April	25	E.	—	0.02	+	1.7
Mean			—	0.120	+	1.85
Div., Flex., etc. .				. .	—	0.24

ζ PEGASI.

	h.	m.	s.
Right Ascension. . .	22	34	58.67
North Polar Distance .	79°	50′	46″.54

ζ PEGASI—Continued.

				s.		″
April	7	F.	+	0.13	—	0.5
July	16	E.	+	0.10	+	2.4
Mean			+	0.115	+	0.95
Div., Flex., etc. .				. .	—	0.27

ι CEPHEI, S. P.

	h.	m.	s.
Right Ascension. . .	22	45	3.41
North Polar Distance .	335°	31′	1″.06

				s.		″
Mar.	1	Ha.	+	0.86		0.0
	3	F.	—	0.06	—	2.0
April	25	E.	+	0.31	—	0.8
Mean			+	0.163	—	0.93
Div., Flex., etc. .				. .	—	0.50

λ AQUARII.

	h.	m.	s.
Right Ascension. . .	22	45	49.82
North Polar Distance .	98°	16′	13″.46

				s.		″
July	15	S.	+	0.09		. .
	16	E.	—	0.04	+	1.0
Mean			+	0.025	+	1.00
Div., Flex., etc. .				. .	+	0.02

α PISCIS AUSTRALIS.

	h.	m.	s.
Right Ascension. . .	22	50	27.73
North Polar Distance .	120°	18′	37″.15

				s.		″
Feb.	10	F.	+	0.08		. .
Mar.	17	F.	+	0.12	+	1.1
April	5	Ha.	+	0.03	+	0.9
	6	E.	+	0.10	+	2.1
	7	F.	+	0.20	—	3.3
	12	E.	+	0.13	—	0.7
July	16	E.	+	0.06	+	2.0
Mean			+	0.103	+	0.35
Div., Flex., etc. .				. .	—	0.76

α PEGASI.

	h.	m.	s.
Right Ascension. . .	22	58	17.18
North Polar Distance .	75°	29′	36″.27

				s.		″
Feb.	3	E.	+	0.09	+	2.4
	10	F.	—	0.02	+	1.9
Mar.	18	F.	+	0.13	+	2.4
	22	E.	+	0.06	+	0.8
April	7	F.		0.00	+	2.0
	12	E.	+	0.02	—	0.6
Aug.	12	S.	+	0.02		0.0
Mean			+	0.043	+	1.27
Div., Flex., etc. .				. .	—	0.21

α PEGASI, (Ref.)

				s.		″
July	16	E.	+	0.10	—	0.2
Div., Flex., etc. .				. .	+	0.87

ο CEPHEI.

	h.	m.	s.
Right Ascension. . .	23	13	17.86
North Polar Distance .	22°	35′	59″.46

				s.		″
July	16	E.	—	0.17	—	0.6
Div., Flex., etc. .				. .	—	0.11

θ PISCIUM.

	h.	m.	s.
Right Ascension. . .	23	21	22.42
North Polar Distance .	84°	20′	4″.06

				s.		″
July	16	E.	+	0.09	+	1.9
Div., Flex., etc. .				. .	—	0.19

ι PISCIUM.

	h.	m.	s.
Right Ascension. . .	23	33	15.90
North Polar Distance .	85°	4′	40″.55

				s.		″
July	16	E.	—	0.05	+	2.1
Div., Flex., etc. .				. .	—	0.19

γ CEPHEI.

	h.	m.	s.
Right Ascension. . .	23	34	1.80
North Polar Distance .	13°	5′	35″.23

				s.		″
April	12	E.		. .	—	0.5
Div., Flex., etc. .				. .	+	0.06

γ CEPHEI, S. P.

	h.	m.	s.
Right Ascension. . .	23	34	1.80
North Polar Distance .	346°	54′	24″.77

				s.		″
Mar.	21	F.	+	0.60	+	0.4
April	8	F.	+	0.49	+	1.7
	22	E.	+	0.46		0.0
	25	E.	+	0.95	—	0.4
May	9	Ha.	+	0.30	+	0.4
	21	Ha.	—	0.38	+	2.6
Mean			+	0.403	+	0.78
Div., Flex., etc. .				. .	—	0.26

GROOMBRIDGE 4163.

	h.	m.	s.
Right Ascension. . .	23	48	32.08
North Polar Distance .	16°	18′	47″.72

				s.		″
July	16	E.	—	0.25	—	1.5
Div., Flex., etc. .				. .	+	0.10

GROOMBRIDGE 4163, S. P.

	h.	m.	s.
Right Ascension. . .	23	48	32.08
North Polar Distance .	343°	41′	12″.28

				s.		″
May	9	Ha.	+	0.07	—	1.0
Div., Flex., etc. .				. .	—	0.26

ω PISCIUM.

	h.	m.	s.
Right Ascension. . .	23	52	38.21
North Polar Distance .	83°	51′	22″.37

				s.		″
June	19	E.	+	0.03	+	1.6
July	16	E.	—	0.11	+	0.9
Mean			—	0.040	+	1.25
Div., Flex., etc. .				. .	—	0.19

MEAN RIGHT ASCENSIONS OF STARS

FOR 1870.0,

GIVEN BY INDIVIDUAL OBSERVATIONS

WITH THE

TRANSIT INSTRUMENT.

1870.

MEAN RIGHT ASCENSIONS FOR 1870.0.

TRANSIT INSTRUMENT.

	h. m. s.	Mag.
α ANDROMEDÆ, +28° 43′.		
Nov. 4 . .	0 1 40.29	
18 . .	40.30	
Dec. 1 . .	40.24	
γ PEGASI, +14° 28′.		
Oct. 21 . .	0 6 32.64	
Nov. 4 . .	32.61	
15 . .	32.68	
LALANDE 221, +35° 50′.		
Oct. 25 . .	0 9 56.25	6.5
Nov. 7 . .	56.37	
WEISSE (2) 256, +35° 50′.		
Oct. 25 . .	0 10 19.62	8.5
Nov. 15 . .	19.57	9.0
18 . .	19.75	8.8
LALANDE 251, +35° 50′.		
Oct. 25 . .	0 10 45.53	8.0
Nov. 9 . .	45.43	
15 . .	45.42	8.0
18 . .	45.43	8.6
GROOMBRIDGE 34, +43° 13′.		
Nov. 12 . .	0 10 58.44	8.2
Dec. 1 . .	58.51	
2 . .	58.56	
WEISSE O, 306, −9° 8′.		
Nov. 12 . .	0 19 15.79	
26 . .	15.65	
WEISSE O, 305, +3° 9′.		
Oct. 25 . .	0 19 15.74	7.8
WEISSE O, 308, +3° 9′.		
Oct. 25 . .	0 19 21.14	8.0
WEISSE O, 312, +3° 9′.		
Oct. 25 . .	0 19 35.84	6.5
WEISSE O, 337, +3° 50′.		
Nov. 3 . .	0 21 2.49	
7 . .	2.55	
WEISSE O, 377, −1° 9′.		
Nov. 8 . .	0 23 51.98	8.8
B. A. C. 167, +2° 21′.		
Nov. 18 . .	0 32 25.70	7.5
26 . .	25.69	
WEISSE O, 574, +11° 11′.		
Nov. 8 . .	0 34 22.46	8.0
(*), +1° 38′.		
Nov. 9 . .	0 34 47.49	9.0
(*), +2° 5′.		
Nov. 12 . .	0 35 24.49	8.8
19 . .	24.40	
β CETI, −18° 42′.		
Dec. 1 . .	0 37 3.71	
WEISSE O, 649, +1° 3′.		
Nov. 18 . .	0 38 25.06	
26 . .	25.06	
WEISSE O, 677, −5° 11′.		
Nov. 18 . .	0 40 3.55	
26 . .	3.57	
i^1 PISCIUM, +27° 0′.		
Nov. 3 . .	0 42 54.52	
4 . .	54.53	
i^2 PISCIUM, +27° 0′.		
Nov. 3 . .	0 42 54.66	
4 . .	54.78	
(*), +6° 56′.		
Nov. 8 . .	0 51 13.17	7.8
18 . .	13.11	
ε PISCIUM, +7° 12′.		
Oct. 18 . .	0 56 11.82	
Nov. 3 . .	11.88	
4 . .	11.91	
7 . .	11.85	
12 . .	11.84	
Dec. 1 . .	11.87	
2 . .	11.89	
LACAILLE 310, −24° 45′.		
Oct. 18 . .	1 0 54.19	
Nov. 3 . .	54.26	
7 . .	54.45	
LALANDE 1966, +60° 48′.		
Nov. 28 . .	1 1 23.18	
Dec. 1 . .	23.23	
(*), +0° 35′.		
Oct. 18 . .	1 3 46.27	
ζ PISCIUM, +6° 53′.		
Nov. 5 . .	1 6 57.22	
(*), +5° 57′.		
Dec. 1 . .	1 13 55.89	8.3
θ CETI, −8° 51′.		
Nov. 7 . .	1 17 31.53	
28 . .	31.55	
LALANDE 2559, +35° 38′.		
Nov. 9 . .	1 18 19.34	8.0
12 . .	19.54	8.2
LALANDE 2612, −1° 11′.		
Nov. 18 . .	1 19 46.31	8.0
(*), −1° 11′.		
Nov. 18 . .	1 19 48.20	6.8
η PISCIUM, +14° 40′.		
Oct. 24 . .	1 24 31.84	
25 . .	31.79	
31 . .	31.75	
Nov. 3 . .	31.83	
7 . .	31.84	
Dec. 2 . .	31.81	
LALANDE 2751, +68° 16′.		
Nov. 28 . .	1 25 13.29	
Dec. 1 . .	13.28	
(*), +14° 59′.		
Nov. 18 . .	1 25 18.88	
(*), +14° 59′.		
Nov. 18 . .	1 26 5.69	
26 . .	5.51	
Dec. 2 . .	5.50	
(*), +14° 59′.		
Oct. 18 . .	1 26 53.56	
WEISSE (2) I, 575, +14° 59′.		
Nov. 18 . .	1 27 2.41	
26 . .	2.62	
(*), +14° 59′.		
Nov. 18 . .	1 27 12.67	
B. A. C. 472, +0° 17′.		
Dec. 1 . .	1 28 6.83	
10 . .	6.72	
LALANDE 2966, +66° 16′.		
Dec. 1 . .	1 31 58.71	
10 . .	58.97	
12-YEAR CAT. 150, +63° 10′.		
Nov. 28 . .	1 38 22.58	
Dec. 1 . .	22.58	
ο PISCIUM, +8° 31′.		
Oct. 18 . .	1 38 31.91	
24 . .	31.82	
25 . .	31.79	
(*), −27° 0′.		
Dec. 2 . .	1 39 44.86	
WEISSE I, 753, −11° 23′.		
Nov. 5 . .	1 43 0.34	
8 . .	0.24	7.8
χ CETI, −11° 22′.		
Nov. 1 . .	1 43 11.95	
8 . .	11.89	
β ARIETIS, +20° 10′.		
Jan. 5 . .	1 47 27.71	
Oct. 24 . .	27.65	
25 . .	27.73	
31 . .	27.65	
Nov. 26 . .	27.73	
28 . .	27.72	
Dec. 1 . .	27.83	
50 CASSIOPEÆ, +71° 48′.		
Nov. 12 . .	1 52 23.07	

α Arietis, +22° 51'.

	h. m. s.	Mag.
Oct. 24	1 59 51.00	
25	51.00	
31	50.95	
Nov. 28	50.96	

Weisse II, 1075, −1° 13'.

Nov. 26	2 0 58.39	
28	58.32	

Lalande 3987, +67° 2'.

Nov. 28	2 5 6.87	
Dec. 2	6.84	

ξ^1 Ceti, +8° 15'.

Oct. 18	2 6 6.72	
24	6.70	
25	6.59	
31	6.71	
Nov. 7	6.72	

O. Arg. S. 1388, −29° 39'.

Nov. 8	2 6 14.75	9.3
14	14.54	8.7
26	14.60	8.0

(*), −29° 39'.

Nov. 14	2 6 25.37	9.0
26	25.91	8.6

Weisse II, 147, +1° 6'.

Nov. 18	2 11 16.38	
26	16.27	

B. A. C. 728, +10° 12'.

Nov. 1	2 16 16.06	8.5
8	16.13	

B. A. C. 1^m too small.

Weisse II, 464, +6° 13'.

Nov. 18	2 28 57.34	
26	57.44	

Weisse (2) II, 718, +30° 14'.

Nov. 18	2 30 49.17	
26	49.21	

γ Ceti, +2° 41'.

Nov. 7	2 36 33.90	
8	33.97	
18	34.01	
26	33.99	

Lalande 5490, +61° 11'.

Nov. 18	2 53 32.23	
Dec. 1	32.60	

α Ceti, +3° 35'.

Jan. 10	2 55 29.14	
Nov. 8	29.12	
18	29.11	

12 Eridani, −29° 32'.

	h. m. s.	Mag.
Dec. 2	3 6 32.72	

ζ Arietis, +20° 34'.

Dec. 1	3 7 25.97	

Carrington 491, +86° 12'.

Dec. 2	3 24 11.16	
4	11.00	

B. A. C. 1111, +62° 48'.

Dec. 2	3 30 54.00	
4	53.94	

σ Persei, +33° 33'.

Jan. 7	3 34 8.48	

Lalande 6888, (1st *), +41° 2'.

Dec. 2	3 38 9.76	
4	10.13	

Lalande 6888, (2d *), +41° 2'.

Dec. 2	3 38 10.42	
4	10.62	

(*), +24° 7'.

Jan. 5	3 38 52.40	7.0

13 Pleiadum, +23° 36'.

Jan. 18	3 39 21.11	

(*), +23° 41'.

Jan. 18	3 39 32.90	

(*), +23° 18'.

Jan. 25	3 39 35.36	

(*), +23° 41'.

Jan. 18	3 39 35.80	

(*), +23° 51'.

Jan. 18	3 39 37.46	

(*), +11° 16'.

Jan. 10	3 39 41.18	8.0

(*), +23° 18'.

Jan. 25	3 39 44.63	

η Tauri, +23° 41'.

Jan. 18	3 39 45.66	

(*), +23° 41'.

Jan. 18	3 40 50.93	

(*), +23° 36'.

	h. m. s.	Mag.
Jan. 25	3 41 13.45	

27 Tauri, +23° 41'.

Jan. 18	3 41 26.07	

28 Tauri, +23° 19'.

Jan. 18	3 41 27.19	

(*), +23° 36'.

Jan. 25	3 41 29.05	8.5

Weisse (2) III, 896, +37° 28'.

Jan. 21	3 41 31.29	

33 Pleiadum, +23° 48'.

Jan. 10	3 41 41.64	7.5

(*), +23° 41'.

Jan. 18	3 41 41.73	

(*), +23° 48'.

Jan. 10	3 42 1.80	

(*), +23° 48'.

Jan. 10	3 42 10.43	8.0

37 Pleiadum, +23° 58'.

Jan. 18	3 42 11.91	

Lalande 7069, +9° 2'.

Jan. 7	3 42 43.36	

(*), +23° 45'.

Jan. 25	3 43 8.85	7.0

Radcliffe 1087, +40° 2'.

Jan. 5	3 43 20.45	

Groombridge 745, +75° 40'.

Dec. 2	3 44 36.62	

Weisse (2) III, 972, +38° 9'.

Jan. 10	3 45 28.60	8.8

Weisse (2) III, 974, +38° 9'.

Jan. 10	3 45 29.52	

ζ Persei, +31° 30'.

Jan. 7	3 45 57.90	
Nov. 8	57.94	

γ Eridani, −13° 53'.

	h. m. s.	Mag.
Jan. 5	3 51 57.87	
7	57.95	
21	57.81	
25	57.92	
Dec. 2	57.84	

Weisse (2) III, 1151, +34° 56'.

Dec. 2	3 54 16.73	
6	16.67	8.0

(*), +34° 56'.

Dec. 6	3 54 31.90	8.0

ψ Tauri, +28° 59'.

Dec. 2	3 58 58.44	
4	58.57	

Weisse (2) III, 1266, +20° 55'.

Jan. 18	3 59 30.29	8.5

Weisse (2) III, 1275, +20° 55'.

Jan. 18	4 0 4.92	8.5

O. Arg. S. 2848, −25° 4'.

Jan. 5	4 3 32.58	8.0

Lacaille 1370, −25° 23'.

Jan. 5	4 4 31.10	7.0
10	30.83	

Lalande 7773, +44° 27'.

Jan. 18	4 5 1.57	8.0
21	1.54	8.5

Lalande 7817, +44° 22'.

Jan 21	4 6 3.80	

Lalande 7833, +44° 22'.

Jan. 21	4 6 34.19	9.0

B. A. C. 1308, −30° 25'.

Jan. 25	4 8 53.87	7.0

Weisse (2) IV, 160, +20° 12'.

Jan. 10	4 9 42.07	8.0

Weisse (2) IV, 166, +20° 14'.

Jan. 10	4 9 50.02	9.00

(*), +16° 39'.

Jan. 5	4 10 11.55	8.0

(*), +46° 43'.

Jan. 21	4 11 45.02	9.0

(*), −30° 23′.

h. m. s. Mag.
Jan. 25 . . 4 11 49.74 9.0

γ TAURI, +15° 19′.

Nov. 9 . . 4 12 23.80

(*), +17° 52′.

Nov. 9 . . 4 12 53.24

LACAILLE 1410, −34° 28′.

Feb. 10 . . 4 12 57.99 7.0
12 . . 57.80 7.3

(*), −27° 1′.

Jan. 10 . . 4 13 32.21 9.0

RUMKER 1159, +17° 57′.

Jan. 18 . . 4 13 53.19 7.8

LACAILLE 1416, −34° 26′.

Feb. 10 . . 4 13 54.61 7.5
12 . . 54.54 7.5

WEISSE (2) IV, 270, +18° 7′.

Jan. 5 . . 4 14 0.03 6.5

B. A. C. 1374, −35° 20′.

Jan. 25 . . 4 20 7.46 7.0

LACAILLE 1449, −35° 57′.

Jan. 5 . . 4 20 37.82 7.0

ε TAURI, +18° 53′.

Feb. 12 . . 4 21 1.61
Nov. 9 . . 1.77

WEISSE (2) IV, 436, +27° 6′.

Jan. 7 . . 4 21 18.27

WEISSE (2) IV, 535, +19° 33′.

Jan. 5 . . 4 25 46.56 8.7
10 . . 46.51 8.8

α TAURI, +16° 4′.

Oct. 13 . . 4 28 27.77

LACAILLE 1540, −25° 54′.

Jan. 21 . . 4 33 34.85

WEISSE IV, 722, +14° 35′.

Jan. 5 . . 4 34 4.77 8.8
25 . . 4.78 8.2

τ TAURI, +22° 42′.

Dec. 7 . . 4 34 26.67

O. ARG. S. 3325, −24° 15′.

h. m. s. Mag.
Jan. 10 . . 4 37 41.65 8.8

WEISSE IV, 806, +2° 59′.

Jan. 21 . . 4 37 54.48 8.3

WEISSE (2) IV, 886, +24° 30′.

Jan. 10 . . 4 40 40.47 8.0

(*), +10° 45′.

Jan. 25 . . 4 41 14.18 9.0

(*), +10° 45′.

Jan. 25 . . 4 41 16.94 8.5

(*), +10° 46′.

Jan. 25 . . 4 41 18.63 8.5

(*), +1° 15′.

Jan. 21 . . 4 41 41.10 8.5

(*), +15° 41′.

Jan. 7 . . 4 42 5.29 7.5

LALANDE 9012, +45° 39′.

Dec. 6 . . 4 42 10.32

96 TAURI, +15° 43′.

Jan. 7 . . 4 42 17.86 6.5

(*), +10° 45′.

Jan. 5 . . 4 42 31.19 9.5

WEISSE IV, 925, +1° 19′.

Jan. 21 . . 4 43 45.57 8.0

(*), +10° 52′.

Jan. 5 . . 4 43 58.42 8.5

WEISSE IV, 926, +10° 48′.

Jan. 5 . . 4 44 0.27 7.0

(*), +43° 52′.

Feb. 12 . . 4 44 29.47 9.0

LALANDE 9106, +43° 53′.

Feb. 10 . . 4 45 31.53 7.0
12 . . 31.43 7.5

GROOMBRIDGE 892, +52° 39′.

Feb. 21 . . 4 45 49.43 6.0

LACAILLE 1622, −38° 47′.

h. m s. Mag.
Jan. 21 . . 4 46 0.64 6.0
25 . . 0.74 6.5

(*), +43° 56′

Feb. 10 . . 4 46 5.42 9.0

WEISSE IV, 986, +8° 20′.

Jan. 10 . . 4 46 10.21 7.5

ω ERIDANI, −5° 39′.

Jan. 7 . . 4 46 30.38

LACAILLE 1631, −38° 49′.

Jan. 21 . . 4 47 15.73 7.3
25 . . 15.83 7.2

(*), +43° 57′.

Feb. 12 . . 4 49 29.46

(*), +43° 57′.

Feb. 12 . . 4 49 30.97 9.0

LALANDE 9291, +1° 20′.

Jan. 5 . . 4 50 6.06 7.5

(*), −25° 48′.

Jan. 10 . . 4 51 4.90 9.3

ι TAURI, +21° 24′.

Dec. 7 . . 4 55 19.64

(*), −31° 34′.

Jan. 5 . . 4 56 24.25 7.0

WEISSE (2) IV, 1266, +21° 26′.

Jan. 10 . . 4 56 36.24 8.0

(*), −31° 33′.

Jan. 5 . . 4 56 35.68 8.3

(*), +45° 19′.

Jan. 21 . . 4 56 43.57 9.0

B. A. C. 1559, −26° 27′.

Jan. 7 . . 4 56 52.45

11 ORIONIS, +15° 13′.

Jan. 25 . . 4 57 8.55
Feb. 21 . . 8.59

m TAURI, +18° 29′.

Jan. 25 . . 4 59 46.04

B. A. C. 1582, +46° 49′.

h. m. s. Mag.
Jan. 5 . . 5 1 2.40 5.5

B. A. C. 1565, +79° 5′.

Jan. 21 . . 5 1 11.50 5.7

(*), −12° 3′.

Feb. 21 . . 5 1 22.01 6.0

(*), +29° 38′.

Feb. 12 . . 5 1 22.32 8.2

O. ARG. S. 3670, −28° 43′.

Jan. 10 . . 5 1 24.81

WEISSE (2) V, 1414, +29° 38′.

Feb. 12 . . 5 1 27.08 7.5

O. ARG. S. 3680, −28° 49′.

Jan. 10 . . 5 1 51.56 9.5

(*), +4° 15′.

Jan. 5 . . 5 3 43.08 9.2

μ AURIGÆ, +38° 21′.

Jan. 7 . . 5 4 32.06

(*), +30° 15′.

Jan. 10 . . 5 4 43.60 9.0

12 AURIGÆ, +46° 7′.

Jan. 5 . . 5 6 49.72

WEISSE V, 145, +2° 26′.

Jan. 25 . . 5 7 50.05 8.5

WEISSE V, 153, +2° 23′.

Jan. 25 . . 5 8 14.16 9.0

β ORIONIS, −9° 21′.

Jan. 21 . . 5 8 17.55

WEISSE V, 156, +2° 28′.

Jan. 25 . . 5 8 18.35 9.0

LACAILLE 1779, −25° 27′.

Feb. 12 . . 5 11 16.59 7.0

WEISSE (2) V, 296, +26° 8′.

Jan. 5 . . 5 11 43.55 9.0

(*), −25° 26′.

Feb. 12 . . 5 12 56.90 7.0

	h. m. s.	Mag.
(*), −25° 24′.		
Feb. 12	5 12 57.94	7.5
Lalande 9884, +78° 18′.		
Dec. 6	5 17 27.07	
β Tauri, +28° 39′.		
Jan. 10	5 18 4.51	
Groombridge 968, +74° 57′.		
Dec. 6	5 22 21.34	
(*), −26° 36′.		
Jan. 10	5 23 18.99	9.0
δ Orionis, −0° 24′.		
Jan. 5	5 25 22.05	
7	21.89	
(*), −28° 34′.		
Jan. 21	5 25 55.51	7.7
(*), −5° 26′.		
Feb. 12	5 26 44.22	8.0
(*), −5° 39′.		
Jan. 21	5 27 32.59	
Feb. 12	32.65	8.0
(*), −5° 43′.		
Jan. 21	5 28 11.32	8.3
(*), −5° 42′.		
Jan. 21	5 28 12.51	8.5
(*), −5° 40′.		
Jan. 10	5 28 24.40	7.5
(*), −5° 27′.		
Jan. 25	5 28 52.67	8.0
(*), −5° 27′.		
Jan. 21	5 28 53.46	
Jan. 25	53.35	7.5
(*), −5° 27′.		
Jan. 25	5 28 54.19	8.5
θ² Orionis, −5° 30′.		
Feb. 21	5 28 59.91	
(*), −5° 30′.		
Feb. 21	5 29 3.46	

	h. m. s.	Mag.
Lalande 10567, −5° 45′.		
Jan. 10	5 29 31.62	6.5
Feb. 12	31.71	7.0
(*), −5° 43′.		
Jan. 10	5 29 31.63	
(*), −5° 43′.		
Feb. 12	5 29 52.78	6.0
Lacaille 1913, −26° 46′.		
Feb. 21	5 32 29.55	7.0
(*), −31° 11′.		
Jan. 10	5 32 31.46	9.2
O. Arg. S. 4142, −31° 9′.		
Jan. 10	5 32 35.79	8.0
Weisse (2) V, 1064, +29° 48′.		
Jan. 21	5 34 10.81	7.2
Lalande 10797, +37° 16′.		
Dec. 7	5 37 5.55	
(*), +71° 37′.		
Feb. 21	5 43 27.79	9.3
(*), +71° 40′.		
Feb. 21	5 43 29.02	9.0
O. Arg. N. 6250, +71° 34′		
Feb. 21	5 43 29.78	8.8
(*), +20° 19′.		
Jan. 5	5 45 21.81	
10	21.72	9.0
(*), +72° 28′.		
Jan. 21	5 47 57.84	8.5
25	57.86	8.5
α Orionis, +7° 23′.		
Jan. 7	5 48 8.06	
Feb. 12	8.14	
Mar. 10	8.12	
Dec. 8	8.10	
(*), +7° 23′.		
Jan. 10	5 48 55.50	9.0
(*), +7° 26′.		
Jan. 10	5 49 12.10	8.0
O. Arg. S. 4457, −29° 10′.		
Dec. 8	5 50 36.66	8.2

	h. m. s.	Mag.
(*), −29° 56′.		
Feb. 21	5 50 37.21	7.0
(*), −29° 58′.		
Feb. 21	5 50 39.04	7.5
(*), +7° 20′.		
Jan. 5	5 50 51.26	9.0
10	51.06	9.0
Lacaille 2065, −31° 32′.		
Mar. 10	5 51 6.18	6.5
γ Columbæ, −35° 16′.		
Jan. 21	5 52 55.53	4.5
B. A. C. 1915, −31° 58′.		
Jan. 25	5 53 4.95	7.0
Lacaille 2085, −33° 28′.		
Feb. 12	5 53 12.42	7.0
Weisse V, 1368, (1st *), −13° 56′.		
Jan. 5	5 54 6.74	8.5
Weisse V, 1368, (2d *), −13° 59′.		
Jan. 5	5 54 7.17	9.0
(*), +26° 24′.		
Feb. 21	5 54 21.66	7.5
Lacaille 2094, −35° 22′.		
Mar. 10	5 55 2.93	7.0
Rumker 1680, +26° 22′.		
Jan. 10	5 55 46.73	8.5
(*), +28° 9′.		
Jan. 25	5 58 59.21	8.3
Lacaille 2124, −32° 8′.		
Jan. 5	5 59 30.15	5.5
(*), +25° 59′.		
Jan. 10	5 59 57.63	8.2
O. Arg. N. 6525, +73° 45′.		
Jan. 21	6 1 13.58	9.0
Weisse VI, 55, −9° 23′.		
Jan. 25	6 3 40.72	8.6

	h. m. s.	Mag.
(*), −9° 23′.		
Jan. 25	6 3 42.93	9.2
Weisse VI, 73, −9° 19′.		
Jan. 25	6 4 14.05	8.2
Weisse (2) VI, 136, +31° 30′.		
Jan. 10	6 6 49.69	
η Geminorum, +22° 32′.		
Dec. 9	6 7 1.88	
(*), −27° 45′.		
Feb. 21	6 7 32.46	7.0
Dec. 8	32.54	
(*), −27° 43′.		
Feb. 21	6 7 34.10	7.5
Dec. 8	34.11	
(*), −27° 44′.		
Feb. 21	6 7 46.78	7.3
Dec. 8	46.69	
B. A. C. 2014, +35° 11′.		
Jan. 21	6 8 51.33	6.5
l Orionis, +9° 58′.		
Jan. 25	6 9 56.62	5.0
Lalande 11959, +38° 29′.		
Jan. 21	6 10 46.24	7.0
Lacaille 2208, −24° 1′.		
Mar. 10	6 11 50.65	
Lalande 12053, +21° 9′.		
Feb. 21	6 12 45.67	7.5
μ Geminorum, +22° 35′.		
Jan. 10	6 15 5.75	
21	5.75	
Feb. 21	5.75	
(*), −29° 33′.		
Jan. 5	6 15 17.19	9.0
(*), −29° 33′.		
Jan. 5	6 15 17.68	8.2
Weisse VI, 446, −14° 20′.		
Mar. 10	6 15 45.28	8.3
Lacaille 2232, −29° 36′.		
Jan. 25	6 15 54.74	6.5

		h. m. s.	Mag.
Lacaille 2254, −29° 47′.	Feb. 21	6 18 29.36	6.8
(*), +37° 49.′	Feb. 21	6 26 29.07	7.5
	Mar. 10	29.13	7.5
(*), +37° 49′.	Feb. 21	6 26 29.42	9.0
	Mar. 10	29.36	8.5
B. A. C. 2139, +38° 33′.	Jan. 5	6 27 36.58	5.5
Weisse (2) VI, 809, +24° 32′.	Mar. 10	6 28 38.18	9.0
Weisse (2) VI, 826, +24° 30′.	Mar. 10	6 29 9.96	8.5
O. Arg. S. 5344, (1st *), −24° 0′.	Jan. 5	6 30 40.18	9.0
O. Arg. S. 5344, (2d *), −24° 0′.	Jan. 5	6 30 42.18	8.2
Lalande 12768, +32° 46′.	Feb. 21	6 33 18.28	7.0
Weisse VI, 990, −14° 1′.	Jan. 21	6 33 20.23	
O. Arg. S. 5434, −27° 38′.	Jan. 25	6 33 39.51	8.0
Lalande 12798, +37° 17′.	Jan. 5	6 34 24.03	6.5
O. Arg. S. 5517, −27° 27′.	Mar. 10	6 36 15.64	8.0
O. Arg. S. 5519, −27° 46′.	Jan. 21	6 36 27.87	8.0
28 Geminorum, +29° 6′.	Dec. 8	6 36 31.25	
O. Arg. S. 5543, −23° 13′.	Jan. 25	6 37 5.61	7.5
Lacaille 2413, −28° 13′.	Mar. 10	6 38 2.60	7.0
(*), +38° 42′	Jan. 5	6 38 25.71	9.0
(*), −38° 41′.	Jan. 5	6 38 28.08	7.8
Lacaille 2420, −27° 28′.	Jan. 10	6 38 43.09	
α Canis Majoris, −16° 32′.	Dec. 8	6 39 25.06	
(*), −31° 31′.	Jan. 21	6 40 12.66	7.2
B. A. C. 2210, +77° 8′.	Feb. 12	6 41 2.95	
(*), +52° 7′.	Jan. 25	6 41 23.81	9.5
O. Arg. N. 7274, +52° 9′.	Jan. 25	6 41 42.23	
O. Arg. N. 7286, +51° 41′.	Jan. 5	6 42 33.76	9.0
O. Arg. N. 7294, +51° 47′.	Jan. 5	6 43 11.71	9.0
O. Arg. N. 7299, +51° 47′.	Jan. 5	6 43 16.34	8.0
O. Arg. S. 5725, −28° 12′.	Jan. 10	6 43 30.20	8.2
(*), −32° 22′.	Feb. 21	6 44 40.69	6.5
B. A. C. 2244, −27° 11′.	Jan. 21	6 44 53.95	6.5
κ Ursæ Majoris, −32° 20′.	Feb. 12	6 45 59.24	
Lacaille 2494, −33° 45′.	Jan. 10	6 47 16.82	7.0
	25	16.78	6.7
Lacaille 2496, −24° 22′.	Jan. 5	6 48 0.24	6.0
	21	0.29	6.0
(*), −28° 47′.	Jan. 25	6 49 14.80	8.5
Weisse VI, 1579, −14° 46′.	Jan. 21	6 51 54.48	8.5
Weisse VI, 1587, −14° 46′.	Jan. 21	6 52 4.42	9.0
ε Canis Majoris, −28° 47′.	Jan. 21	6 53 30.98	
	Dec. 8	31.10	
(*), −26° 5′.	Jan. 10	6 53 41.79	9.0
(*), −23° 42′.	Jan. 5	6 54 38.93	8.3
	Feb. 21	39.12	7.5
Weisse (2) V, 1675, +20° 48′.	Jan. 21	6 56 22.83	8.0
	Feb. 12	22.85	8.0
(*), +22° 54′.	Jan. 5	6 57 58.03	9.0
Weisse (2) VI, 1728, +42° 57′.	Jan. 10	6 58 24.43	8.5
(*), −26° 8′.	Jan. 21	7 1 47.36	9.0
(*), −26° 10′.	Jan. 21	7 2 10.30	9.0
(*), −31° 11′.	Jan. 5	7 3 1.21	
	21	1.17	
δ Canis Majoris, −26° 11′.	Dec. 8	7 3 6.40	
Lacaille 2637; −31° 11′.	Jan. 5	7 3 12.41	7.0
O. Arg. S. 6311, −23° 43.	Jan. 10	7 4 17.39	8.0
(*), +42° 15′.	Feb. 12	7 5 0.42	8.2
O. Arg. S. 6343, −30° 25′.	Jan. 21	7 5 29.04	7.0
(*), +42° 9′.	Feb. 12	7 5 44.38	8.3
O. Arg. S. 6364, −23° 45′.	Jan. 5	7 6 4.26	9.0
Weisse VII, 164, −14° 35′.	Feb. 21	7 6 10.52	7.5
(*), −14° 17′.	Jan. 25	7 6 35.48	8.2
26 Canis Majoris, −25° 43′.	Jan. 10	7 6 52.95	5.0
(*), −14° 38′.	Feb. 21	7 7 5.36	7.5
Weisse VI, 196, −14° 20′.	Jan. 25	7 7 21.39	8.0
53 Geminorum, +28° 8′.	Mar. 10	7 7 49.87	6.0
Lacaille 2394, −30° 25′.	Jan. 10	7 9 35.33	7.0
Weisse VII, 274, −14° 15′.	Jan. 25	7 9 54.26	8.0
(*), −23° 31′.	Jan. 5	7 10 5.50	8.3
Weisse VII, 283, −14° 15′.	Jan. 25	7 10 8.98	7.2
Lacaille 2684, −23° 30′.	Jan. 5	7 10 20.05	7.0
(*), −14° 37′.	Feb. 2	7 11 50.48	8.5
δ Geminorum, +22° 13′.	Jan. 5	7 12 21.51	
	10	21.48	
Weisse (2) VII, 347, +41° 34′.	Feb. 12	7 12 56.21	7.0
65 Aurigæ, +37° 1′.	Mar. 10	7 13 21.19	5.5

Star	Date	h. m. s.	Mag.
(*), −27° 53′.	Feb. 21	7 15 32.11	9.2
O. Arg. S. 6666, −27° 53′.	Feb. 21	7 15 44.26	8.5
Weisse VII, 461, −14° 50′.	Jan. 10	7 16 1.96	8.5
	25	1.95	8.3
Weisse VII, 464, −14° 27′.	Feb. 12	7 16 4.88	8.0
(*), −18° 45′.	Feb. 12	7 19 0.34	8.5
O. Arg. S. 6762, −18° 44′.	Feb. 12	7 19 7.13	6.0
(*), −18° 45′.	Feb. 12	7 19 16.95	8.5
(*), −14° 42′.	Feb. 21	7 20 25.43	
(*), −14° 42′.	Feb. 21	7 20 25.83	
B. A. C. 2463, +27° 49′.	Jan. 10	7 20 35.31	6.5
Lalande 14473, +41° 7′.	Mar. 10	7 21 13.85	7.0
6 Canis Majoris, +12° 18′.	Jan. 10	7 22 33.50	5.0
	Feb. 12	33.45	5.5
(*), +22° 33′.	Jan. 25	7 23 34.37	8.5
Weisse (2) VII, 681, +15° 36′.	Jan. 10	7 24 12.59	
Weisse (2) VII, 682, +15° 35′.	Jan. 10	7 24 12.89	
	Mar. 10	12.89	8.5
Weisse (2) VII, 705, +15° 35′.	Jan. 10	7 24 56.79	9.0
o Geminorum, +34° 54′.	Jan. 21	7 30 40.48	6.0
O. Arg. S. 7100, −28° 52′.	Mar. 10	7 30 46.05	9.0
O. Arg. S. 7101, −27° 12′.	Feb. 10	7 30 51.48	6.5
Lacaille 2873, −33° 6′.	Feb. 21	7 30 55.73	6.5
O. Arg. S. 7108, −28° 57′.	Mar. 10	7 30 59.44	7.5
Lacaille 2870, −25° 2′.	Jan. 25	7 31 7.18	6.5
m Puppis, −25° 4′.	Jan. 25	7 32 53.32	4.0
(*), −29° 50′.	Jan. 21	7 33 51.22	8.0
(*), −34° 32′.	Feb. 21	7 34 27.94	7.8
(*), −14° 19′.	Feb. 10	7 35 14.81	9.0
O. Arg. S. 7296, −29° 55′.	Jan. 25	7 37 11.13	8.3
β Geminorum, +28° 20′.	Oct. 13	7 37 21.56	
(*), −29° 56′.	Mar. 10	7 37 49.34	9.0
(*), −23° 52′.	Mar. 10	7 42 23.22	9.0
O. Arg. S. 7444, −30° 12′.	Feb. 12	7 42 27.29	7.5
(*), −23° 55′.	Mar. 10	7 42 29.48	8.5
Lalande 15196, +37° 25′.	Feb. 21	7 42 37.78	6.0
o Puppis, −25° 38′.	Jan. 21	7 42 40.77	
	25	40.88	4.0
O. Arg. S. 7505, −30° 12′.	Feb. 12	7 44 15.43	7.5
φ Geminorum, +27° 6′.	Jan. 21	7 45 32.35	
	Oct. 25	32.44	
	Mar. 10	32.25	
	Oct. 13	32.34	
(*), +12° 6′.	Feb. 21	7 49 1.17	9.0
(*), +12° 7′.	Feb. 21	7 49 15.84	7.8
(*), −26° 7′.	Feb. 12	7 49 37.01	9.0
(*), −26° 5′.	Feb. 12	7 49 52.13	7.0
(*), −37° 15′.	Feb. 12	7 53 21.75	7.0
O. Arg. S. 7797, −30° 0′.	Feb. 21	7 54 37.90	7.8
(*), −30° 2′.	Feb. 21	7 54 45.51	7.5
B. A. C. 2703, +22° 50′.	Feb. 21	7 58 53.62	
(*), −5° 20′.	Mar. 10	7 59 12.71	8.5
ρ Argus, −23° 56′.	Feb. 12	8 2 0.52	
	21	0.59	
O. Arg. S. 8165, −29° 50′.	Mar. 10	8 5 9.62	
O. Arg. S. 8169, −29° 45′.	Mar. 10	8 5 29.32	8.0
(*), −30° 30′.	Feb. 21	8 14 56.50	8.5
Lalande 16367, +27° 32′.	Mar. 10	8 15 9.90	8.0
Weisse (2) VIII, 319, +21° 0′.	Feb. 12	8 15 22.81	8.0
Lalande 16413, +35° 27′.	Mar. 10	8 16 45.30	6.5
d^2 Cancri, +17° 28′.	Feb. 12	8 18 28.11	5.5
Santini 583, +2° 31′.	Feb. 21	8 18 50.37	5.5
Lacaille 3316, −31° 45′.	Feb. 21	8 20 49.39	6.5
(*), −31° 34′.	Feb. 12	8 21 37.42	7.5
Weisse VIII, 554, +12° 0′.	Mar. 10	8 22 14.19	8.5
Weisse VIII, 569, +12° 1′.	Mar. 10	8 22 43.76	8.5
(*), −19° 49′.	Feb. 21	8 26 2.14	9.0
B. A. C. 2883, −31° 5′.	Feb. 12	8 27 47.01	6.0
	Mar. 10	47.19	6.0
(*), −24° 40′.	Feb. 21	8 29 51.16	7.0
(*), +23° 25′.	Mar. 10	8 32 0.60	8.5
(*), +19° 52′.	Feb. 21	8 34 39.19	7.5
(*), −14° 24′.	Mar. 10	8 34 58.46	8.5
(*), −32° 41′.	Feb. 21	8 38 21.32	8.0
a Mali, −32° 39′.	Mar. 10	8 38 22.23	4.0
ε Hydræ, +6° 54′.	Feb. 12	8 39 53.45	
(*), −32° 46′.	Feb. 21	8 41 23.21	7.5

		h.	m.	s.	Mag.
LACAILLE 3551, −28° 8′.					
Mar. 10	. .	8	44	52.29	6.5
(*), −41° 15′.					
Feb. 21	. .	8	44	55.42	9.0
LACAILLE 3561, −41° 15′.					
Feb. 21	. .	8	45	2.34	8.0
LALANDE 17662, −13° 24′.					
Mar. 10	. .	8	50	3.79	7.5
WEISSE (2) VIII, 1245, +24° 8′.					
Feb. 21	. .	8	51	9.49	7.0
O. ARG. S. 9210, −30° 44′.					
Mar. 10	. .	8	53	21.58	8.0
κ CANCRI, +11° 11′.					
Mar. 10	. .	9	1	42.22	
(*), −14° 54′.					
Feb. 21	. .	9	16	46.71	
(*), −28° 28′.					
Mar. 10	. .	9	17	21.57	8.5
α HYDRÆ, −8° 5′.					
Feb. 21	. .	9	21	11.95	
Apr. 25	. .			11.96	
O. ARG. S. 9824, −27° 38′.					
Mar. 10	. .	9	26	16.68	8.5
ε LEONIS, +24° 22′.					
Oct. 18	. .	9	38	28.11	
(*), +12° 4′.					
Apr. 25	. .	9	40	33.89	
μ LEONIS, +26° 37′.					
Apr. 22	. .	9	45	21.95	
O. ARG. S. 10219, −27° 55′.					
Mar. 10	. .	9	49	22.23	7.5
(*), −27° 55′.					
Mar. 10	. .	9	51	4.35	
(*), −38° 45′.					
Apr. 25	. .	9	57	15.98	

		h.	m.	s.	Mag.
α LEONIS, +12° 39′.					
Oct. 18	. .	10	1	26.83	
O. ARG. S. 10488, −30° 32′.					
Mar. 10	. .	10	9	51.44	
Apr. 25	. .			51.93	
γ¹ LEONIS, +20° 30′.					
Mar. 10	. .	10	13	48.16	
WEISSE (2) X, 373, +17° 56′.					
May 4	. .	10	19	51.47	
B. A. C. 3649, +9° 34′.					
Apr. 25	. .	10	32	53.62	
May 4	. .			53.51	
l LEONIS, +11° 13′.					
Apr. 25	. .	10	42	25.34	
WEISSE X, 803, +12° 6′.					
May 4	. .	10	46	0.64	
B. A. C. 3737, +6° 35′.					
Apr. 22	. .	10	48	0.72	
α URSÆ MAJORIS, +62° 27′.					
May 11	. .	10	56	40.73	
(*), +9° 22′.					
May 4	. .	10	55	34.50	
δ LEONIS, +21° 44′.					
Apr. 22	. .	11	7	11.44	
(*), +38° 17′.					
May 4	. .	11	14	36.10	
(*), −11° 56′.					
Apr. 22	. .	11	15	0.28	
(*), +37° 35′.					
Apr. 22	. .	11	26	32.08	
May 4	. .			32.28	
LALANDE 21947, +37° 35′.					
Apr. 22	. .	11	27	1.15	
May 4	. .			1.37	
11	. .			1.04	
(*), +38° 42′.					
Apr. 22	. .	11	38	0.08	
(*), +15° 17′.					
May 21	. .	11	42	17.11	

		h.	m.	s.	Mag.
B. A. C. 4010, +38° 43′.					
Apr. 22	. .	11	45	28.75	
30	. .			28.68	
May 11	. .			28.70	
21	. .			28.73	
ο VIRGINIS, +9° 27′.					
Apr. 22	. .	11	59	35.21	
12 VIRGINIS, +11° 3′.					
Apr. 22	. .	12	6	48.70	
LACAILLE 5066, −33° 1′.					
Apr. 25	. .	12	6	51.98	
27	. .			52.00	
LACAILLE 5073, −33° 0′.					
Apr. 30	. .	12	6	52.19	
May 11	. .			52.15	
3 CANUM VENATICORUM, +49° 46′.					
Apr. 27	. .	12	13	23.88	
May 11	. .			23.88	
21	. .			23.74	
B. A. C. 4184, +24° 42′.					
Apr. 22	. .	12	17	31.20	
(*), +5° 27′.					
Apr. 27	. .	12	24	43.31	
May 11	. .			43.32	
β CORVI, −22° 40′.					
Apr. 25	. .	12	27	33.74	
WEISSE (2) XII, 602, +37° 12′.					
Apr. 22	. .	12	28	49.67	
WEISSE XII, 583, +2° 23′.					
Apr. 22	. .	12	(34)	45.39	
(*), +0° 57′.					
May 11	. .	12	45	12.26	
(*), +0° 57′.					
Apr. 25	. .	12	45	48.37	
WEISSE XII, 835, −0° 11′.					
Apr. 22	. .	12	49	46.55	
8 DRACONIS, +66° 12′.					
Apr. 27	. .	12	50	17.26	
WEISSE XII, 857, −13° 35′.					
Apr. 25	. .	12	51	6.81	
30	. .			6.90	
May 11	. .			6.92	

		h.	m.	s.	Mag.
θ VIRGINIS, −4° 50′.					
Apr. 22	. .	13	3	13.35	
25	. .			13.29	
WEISSE XIII, 318, +0° 21′.					
Apr. 25	. .	13	21	23.56	
ζ VIRGINIS, +0° 4′.					
June 17	. .	13	28	4.27	
(*), −12° 9′.					
Apr. 25	. .	13	34	4.19	
30	. .			4.37	
WEISSE XIII, 866, +38° 35′.					
June 17	. .	13	41	52.18	
(*), +49° 57′.					
June 22	. .	13	42	24.98	
η BOOTIS, +19° 3′.					
June 20	. .	13	48	29.72	
WEISSE (2) XIII, 1167, +23° 37′.					
June 20	. .	13	53	38.41	
ι VIRGINIS, −5° 20′.					
June 17	. .	14	9	12.17	
WEISSE 314, +3° 8′.					
June 17	. .	14	18	5.87	
20	. .			5.47	
ε BOOTIS, +27° 37′.					
June 17	. .	14	39	18.53	
20	. .			18.58	
(*), +49° 42′.					
June 17	. .	14	51	35.00	8.0
δ LIBRÆ, −7° 58′.					
June 22	. .	14	54	1.85	
(*), −26° 17′.					
June 17	. .	14	58	9.25	6.0
(*), −26° 17′.					
June 20	. .	14	59	9.47	9.0
(*), −36° 56′.					
June 22	. .	15	1	59.20	
(*), −37° 1′.					
June 24	. .	15	4	24.59	

	h.	m.	s.	Mag.
(*), −37° 1′.				
June 24	15	4	30.91	
(*), −25° 5′.				
June 20	15	5	4 34	
(*), −37° 6′.				
June 22	15	12	58.16	8.8
LACAILLE 6337, −37° 7′.				
June 17	15	13	51.17	8.5
(*), −36° 6′.				
June 20	15	17	58.92	
μ^1 BOOTIS, +37° 50′.				
June 17	15	19	34.81	
γ^2 URSÆ MINORIS, +72° 18′.				
Oct. 3	15	20	57.43	
(*), −31° 49′.				
June 22	15	22	21.84	8.8
(*), −32° 43′.				
June 24	15	24	12.33	8.0
O. ARG. S. 14669, −27° 44′.				
June 22	15	27	50.73	8.0
α CORONÆ, +27° 9′.				
July 8	15	29	11.08	
WEISSE (2) XV, 822, +43° 11′.				
June 22	15	34	27.32	8.0
WEISSE (2) XV, 845, +43° 11′.				
June 20	15	35	3.85	
α SERPENTIS, +6° 50′.				
July 8	15	37	51.97	
O. ARG. S. 14861, −25° 30′.				
June 22	15	38	59.67	8.0
(*), −25° 32′.				
June 17	15	39	13.87	8.5
ε SERPENTIS, +4° 52′.				
June 20	15	44	20.26	
July 18			20.24	
ε CORONÆ BOREALIS, +27° 15′.				
June 17	15	52	12.49	
WEISSE XV, 1081, +6° 27′.				
June 20	15	56	20.09	
B. A. C. 5333, −19° 18′.				
June 17	15	57	53.11	
LACAILLE 6686, −36° 22′.				
July 13	15	58	3.63	6.0
18			3.67	
O. ARG. S. 15199, −21° 27′.				
June 22	15	58	4.08	7.8
24			3.93	
δ OPHIUCHI, −3° 21′.				
July 18	16	7	32.09	
19 SCORPII, −23° 48′.				
June 28	16	12	48.97	
July 8			48.87	
η URSÆ MINORIS, +76° 4′.				
June 20	16	21	19.59	
α SCORPII, −26° 8′.				
June 22	16	21	26.41	
(*), −33° 10′.				
June 24	16	23	43.27	8.0
July 8			43.26	8.5
ζ OPHIUCHI, −10° 18′.				
July 8	16	30	0.09	
18			0.10	
20			0.09	
(*), −26° 11′.				
June 22	16	31	18.46	9.0
WEISSE (2) XVI, 1075, +38° 37′.				
June 20	16	34	38.50	
(*), −31° 23′.				
July 16	16	41	12.75	
WEISSE XVI, 794, +13° 50′.				
June 22	16	42	9.39	
(*), −19° 19′.				
June 24	16	47	40.88	
			40.80	
(*), −19° 19′.				
June 24	16	47	45.89	
B. A. C. 5700, (1st *), −19° 19′.				
June 28	16	49	25.47	
B. A. C. 5700, (2d *), −19° 19′.				
June 28	16	49	25.90	
κ OPHIUCHI, +9° 34′.				
June 22	16	51	30.94	
July 20			31.01	
Aug. 17			30.92	
18			30.92	
(*), −28° 43′.				
Aug. 6	16	56	35.35	
8			35.31	8.5
d HERCULIS, +33° 45′.				
June 20	16	56	48.31	
Aug. 17			48.50	
B. A. C. 5782, −39° 20′.				
Aug. 6	17	3	17.55	
8			17.43	5.5
WEISSE XVII, 107, +14° 43′.				
June 22	17	7	52.76	8.0
Aug. 8			52.65	
α^1 HERCULIS, +14° 33′.				
Aug. 17	17	8	43.18	
18			43.19	
19			43.26	
(*), −35° 12′.				
July 16	17	13	53.33	
δ OPHIUCHI, −24° 51′.				
Aug. 24	17	14	1.61	
LALANDE 31543, −17° 34′.				
Aug. 17	17	15	1.48	
18			1.50	8.0
WEISSE (2) XVII, 486, (1st *), +17° 1′.				
June 22	17	17	37.48	
WEISSE (2) XVII, 486, (2d *), +17° 1′.				
June 22	17	17	42.77	
(*), −31° 31′.				
Aug. 18	17	18	12.32	8.8
b OPHIUCHI, −24° 3′.				
Aug. 19	17	18	25.83	
26			25.77	
(*), −15° 55′.				
Aug. 2	17	21	34.27	
(*), −15° 55′.				
Aug. 17	17	22	0.77	8.0
B. A. C. 5919, +2° 50′.				
Aug. 19	17	24	50.28	
26			50.18	
O. ARG. S. 16908, −15° 59′.				
Aug. 18	17	24	51.49	8.0
(*), −32° 26′.				
July 16	17	25	52.68	
(*), −32° 26′.				
July 16	17	25	55.41	
(*), −32° 26′.				
July 16	17	(26)	32.80	
(*), −32° 26′.				
July 16	17	(26)	42.68	
α OPHIUCHI, +12° 39′.				
June 22	17	28	53.97	
(*), −37° 19′.				
Aug. 18	17	29	5.63	8.0
(*), −32° 4′.				
Aug. 18	17	(31)	15.18	8.0
(*), −32° 4′.				
Aug. 17	17	31	32.67	
18			32.71	8.0
(*), −32° 4′.				
Aug. 18	17	31	34.11	8.5
(*), −32° 4′.				
Aug. 17	17	31	42.45	
B. A. C. 5992, −22° 8′.				
July 8	17	36	33.67	
Aug. 17			33.66	
μ HERCULIS, +27° 48′.				
Aug. 2	17	40	22.20	

Star	Date	h.	m.	s.	Mag.
(*), −22° 52′.	Aug. 26	17	41	26.26	9.0
B. A. C. 6026, (1st *), −30° 31′.	July 8	17	42	50.38	
	16			50.53	
B. A. C. 6026, (2d *), −30° 31′.	July 8	17	42	50.44	
	16			50.40	
Weisse XVII, 929, +8° 43′.	Aug. 2	17	46	25.74	
Minute and second from Weisse.					
B. A. C. 6071, −4° 3′.	July 8	17	49	55.95	
	16			55.93	
Weisse (2) XVII, 1601, (1st *), +18° 21′.	Aug. 2	17	50	42.31	
	Sept. 3			42.22	
Weisse (2) XVII, 1601, (2d *), +18° 21′.	Aug. 2	17	50	42.44	
	Sept. 3			42.38	
(*), −31° 13′.	Aug. 26	17	51	25.44	
O. Arg. S. 17466, −24° 12′.	Aug. 25	17	52	54.51	7.5
(*), −24° 10′.	Aug. 25	17	53	3.40	8.5
(*), −24° 21′.	Aug. 25	17	55	53.96	6.5
(*), −24° 20′.	Aug. 25	17	55	58.53	7.0
(*), −23° 56′.	Aug. 18	17	56	53.23	9.0
(*), −37° 29′.	July 8	17	57	12.06	
(*), −37° 29′.	July 8	17	57	50.07	
(*), +2° 32′.	July 18	18	0	48.93	
(*), +2° 32′.	July 16	18	0	48.99	
	18			49.09	
(*), +2° 32′.	Aug. 2	18	(1)	34.34	
(*), +2° 32′.	Aug. 2	18	(1)	36.88	
(*), −37° 40′.	Aug. 19	18	3	31.65	8.5
(*), −28° 16′.	Aug. 18	18	4	18.44	9.0
(*), −28° 16′.	Aug. 17	18	4	24.67	9.0
	18			24.64	8.0
(*), −37° 42′.	Aug. 25	18	5	7.81	8.5
(*), −37° 40′.	Aug. 25	18	5	16.12	8.0
μ^1 Sagittarii, −21° 5′.	July 8	18	5	59.32	
	18			59.33	
	Aug. 2			59.32	
	Sept. 9			59.40	
(*), −18° 59′.	Aug. 18	18	6	45.95	9.2
(*), −18° 40′.	July 16	18	7	52.51	
	Aug. 2			52.44	
(*), −28° 46′.	Aug. 18	18	10	6.78	8.3
(*), −28° 46′.	Aug. 18	18	10	8.93	8.3
(*), −38° 39′.	Sept. 3	18	15	35.10	
	9			35.25	
(*), −38° 39′.	Sept. 3	18	15	59.92	
	9			59.93	
(*), −29° 36′.	Aug. 18	18	16	7.20	8.8
(*), −29° 36′.	Aug. 18	18	16	8.76	8.5
B. A. C. 6219, −30° 28′.	Aug. 18	18	18	19.43	6.5
	25			19.39	6.5
(* 18) Washington, −22° 30′.	Aug. 18	18	20	20.95	
	26			20.96	
(*), −33° 2′.	Aug. 25	18	23	51.87	7.0
1 Aquilæ, −8° 19′.	Aug. 17	18	28	7.89	
	18			7.91	
	26			7.89	
	Sept. 6			7.87	
	Oct. 4			7.87	
O. Arg. S. 18489, −18° 30′.	Aug. 2	18	30	43.30	8.0
	25			43.24	8.0
α Lyræ, +38° 40′.	Nov. 26	18	32	32.17	
O. Arg. S. 18587, −21° 3′.	Aug. 2	18	35	47.36	7.0
	25			47.31	6.5
(*), −31° 9′.	July 16	18	42	36.02	7.0
(*), −31° 9′.	Aug. 2	18	44	3.57	7.0
β Lyræ, +33° 13′.	Aug. 17	18	45	16.78	
	26			16.80	
	Sept. 3			16.76	
	9			16.74	
(*), −8° 47′.	Aug. 2	18	57	2.71	8.5
(*), −8° 46′.	Aug. 2	18	57	7.31	8.0
ζ Aquilæ, +13° 40′.	Aug. 26	18	59	26.06	
	Sept. 5			26.03	
(*), −8° 52′.	Sept. 6	19	9	22.21	9.3
24 Aquilæ, +0° 5′.	Aug. 2	19	12	11.83	
	17			11.88	
δ Aquilæ, +2° 52′.	Aug. 2	19	18	56.59	
	17			56.59	
	18			56.57	
(*), −27° 21′.	Aug. 2	19	25	46.80	8.3
(*), −27° 21′.	Aug. 2	19	25	48.29	8.7
(*), −40° 3′.	Aug. 26	19	28	18.94	8.7
(*), −27° 24′.	Aug. 18	19	28	43.63	9.0
κ Aquilæ, −7° 19′.	Sept. 3	19	29	53.85	
	5			53.87	
(*), −39° 45′.	Aug. 18	19	37	42.11	8.0
(*), −28° 45′.	Aug. 19	19	39	43.27	8.0
γ Aquilæ, +10° 18′.	Aug. 18	19	40	4.72	
	26			4.75	
	Oct. 5			4.72	
	15			4.72	
α Aquilæ, +8° 31′.	Oct. 15	19	44	26.38	
	Nov. 26			26.41	
β Aquilæ, +6° 5′.	Aug. 17	19	48	55.65	
	19			55.65	
τ Aquilæ, +6° 55′.	Sept. 6	19	57	47.30	
(*), −39° 7′.	Sept. 3	20	0	20.91	8.0
(*), −15° 26′.	Sept. 6	20	1	8.94	7.0
α^2 Capricorni, −12° 56′.	Aug. 19	20	10	50.38	
	Sept. 3			50.35	
	5			50.35	
	Oct. 13			50.43	
	21			50.38	
(*), −0° 3′.	Sept. 3	20	26	38.41	9.0
ε Delphini, +10° 52′.	Oct. 31	20	27	0.06	
(*), −0° 3′.	Aug. 26	20	27	38.55	8.3

(*), −0° 3′.

	h.	m.	s.	Mag.
Aug. 26	20	27	42.11	

(*), +14° 14′.

	h.	m.	s.	Mag.
Aug. 19	20	27	54.29	
Sept. 5			54.33	8.0

(*), −21° 49′.

	h.	m.	s.	Mag.
Sept. 3	20	30	2.64	9.0

WEISSE XX, 851, −7° 21′.

	h.	m.	s.	Mag.
Aug. 26	20	34	7.21	
Sept. 3			7.13	

μ AQUARII, −9° 28′.

	h.	m.	s.	Mag.
Aug. 26	20	45	38.41	
Sept. 5			38.42	
Oct. 31			38.38	

WEISSE XX, 1269, −0° 4′.

	h.	m.	s.	Mag.
Aug. 26	20	50	31.29	7.5

ν CYGNI, +40° 40′.

	h.	m.	s.	Mag.
Sept. 5	20	52	19.73	

61^1 CYGNI, +38° 6′.

	h.	m.	s.	Mag.
Aug. 26-	21	1	4.46	

(*), −12° 23′.

	h.	m.	s.	Mag.
Sept. 5	21	5	15.64	8.8
6			15.58	8.0

(*), +36° 7′.

	h.	m.	s.	Mag.
Sept. 3	21	19	57.35	7.5
5			57.51	7.5
6			57.41	7.0

(*), +36° 7′.

	h.	m.	s.	Mag.
Sept. 5	21	20	2.15	8.0
6			2.25	8.5

(*), +36° 8′.

	h.	m.	s.	Mag.
Sept. 3	21	20	28.33	6.0
5			28.58	6.5

(*), +36° 7′.

	h.	m.	s.	Mag.
Sept. 5	21	20	53.33	8.0

β AQUARII, −6° 8′.

	h.	m.	s.	Mag.
Sept. 6	21	24	42.88	
9			42.90	
16			42.78	
Oct. 4			42.89	
31			42.82	

ξ AQUARII, −8° 26′.

	h.	m.	s.	Mag.
Aug. 26	21	30	49.71	
Sept. 3			49.73	
9			49.75	
16			49.79	
21			49.82	
Oct. 31			49.79	

ε PEGASI, +9° 17′.

	h.	m.	s.	Mag.
Sept. 5	21	37	47.96	
Oct. 4			48.10	
13			48.08	

(*), −35° 39′.

	h.	m.	s.	Mag.
Sept. 3	21	44	5.00	8.5
9			5.24	8.8
14			5.09	9.0

(*), −6° 1′.

	h.	m.	s.	Mag.
Sept. 3	21	44	13.07	8.8

(*), −6° 1′.

	h.	m.	s.	Mag.
Sept. 5	21	45	47.88	8.8

WEISSE XXI, 1063, −6° 1′.

	h.	m.	s.	Mag.
Sept. 6	21	45	47.69	8.5

μ CAPRICORNI, −14° 9′.

	h.	m.	s.	Mag.
Oct. 4	21	46	12.35	
13			12.34	
15			12.38	

(*), +38° 39′.

	h.	m.	s.	Mag.
Sept. 14	21	47	11.86	
21			11.81	8.2

(*), −5° 25′.

	h.	m.	s.	Mag.
Sept. 3	21	49	32.83	7.7
6			32.91	8.0

α AQUARII, −0° 57′.

	h.	m.	s.	Mag.
Sept. 3	21	59	6.39	
5			6.36	
6			6.39	
9			6.34	
Oct. 13			6.32	
15			6.34	
Nov. 28			6.36	

O. ARG. S. 21923, −19° 10′.

	h.	m.	s.	Mag.
Sept. 16	22	1	51.13	
19			50.98	6.5
21			50.95	

(*), −19° 10′.

	h.	m.	s.	Mag.
Sept. 16	22	1	58.08	7.8
19			58.11	7.8
21			57.97	7.8

B. A. C. 7742, +15° 21′.

	h.	m.	s.	Mag.
Sept. 14	22	5	34.68	
16			34.68	

(*), −32° 33′.

	h.	m.	s.	Mag.
Sept. 14	22	8	27.45	8.8
Oct. 13			27.57	8.0
15			27.61	8.0

(*), −21° 59.′

	h.	m.	s.	Mag.
Sept. 19	22	8	51.06	8.5
21			50.98	8.8

θ AQUARII, −8° 26′.

	h.	m.	s.	Mag.
Nov. 8	22	10	58.38	
12			58.28	
28			58.37	

ρ AQUARII, −8° 28′.

	h.	m.	s.	Mag.
Nov. 1	22	13	21.29	

γ AQUARII, −2° 2′.

	h.	m.	s.	Mag.
Nov. 1	22	14	56.42	

π AQUARII, +0° 43′.

	h.	m.	s.	Mag.
Sept. 14	22	18	38.17	
16			38.29	
21			38.11	
Oct. 13			38.28	
15			38.26	
21			38.18	
Nov. 1			38.18	
18			38.21	
26			38.22	
28			38.21	

WEISSE XXII, 449, (1st *), −10° 40′.

	h.	m.	s.	Mag.
Nov. 8	22	22	10.22	8.0
12			10.43	

WEISSE XXII, 449, (2d *), −10° 40′.

	h.	m.	s.	Mag.
Nov. 8	22	22	11.30	8.3
12			11.41	

O. ARG. S. 22294, −28° 11′.

	h.	m.	s.	Mag.
Sept. 19	22	27	6.41	

η AQUARII, −0° 47′.

	h.	m.	s.	Mag.
Sept. 16	22	28	40.51	
Oct. 21			40.55	
Nov. 1			40.49	
28			40.54	

σ^1 GRUIS, −41° 19′.

	h.	m.	s.	Mag.
Sept. 21	22	28	52.98	

σ^2 GRUIS, −41° 19′.

	h.	m.	s.	Mag.
Sept. 21	22	29	23.00	

(*), −21° 40′.

	h.	m.	s.	Mag.
Nov. 18	22	35	34.81	8.0
26			34.91	7.8

ζ PEGASI, +10° 9′.

	h.	m.	s.	Mag.
Sept. 21	22	35	58.74	
Oct. 5			58.75	
Nov. 1			58.75	

(*), +57° 47′.

	h.	m.	s.	Mag.
Oct. 21	22	(40)	13.27	8.5

(*), +57° 47′.

	h.	m.	s.	Mag.
Oct. 21	22	(40)	21.54	9.2

(*), +57° 47′.

	h.	m.	s.	Mag.
Nov. 12	22	40	29.83	

(*), +57° 47′.

	h.	m.	s.	Mag.
Nov. 12	22	40	30.04	

λ AQUARII, −8° 16′.

	h.	m.	s.	Mag.
Oct. 5	22	45	49.81	
Nov. 1			49.84	
7			49.91	
9			49.82	
12			49.90	
18			49.84	
26			49.92	

α PEGASI, +14° 31′.

	h.	m.	s.	Mag.
Nov. 8	22	58	17.26	
9			17.11	
18			17.14	

h^4 AQUARII, −8° 27′.

	h.	m.	s.	Mag.
Sept. 21	23	0	26.03	7.0
Oct. 15			26.32	

(*), +37° 8′.

	h.	m.	s.	Mag.
Oct. 15	23	5	9.89	7.5
21			9.53	8.0

γ PISCIUM, +2° 34′.

	h.	m.	s.	Mag.
Nov. 3	23	10	25.52	

(*), +66° 18′.

	h.	m.	s.	Mag.
Sept. 21	23	16	58.10	7.8

(*), +54° 1′.

	h.	m.	s.	Mag.
Nov. 9	23	20	6.98	8.5

(*), +54° 1′.

	h.	m.	s.	Mag.
Oct. 21	23	21	7.10	8.2
Nov. 12			7.06	8.5

(*), +54° 1′.

	h.	m.	s.	Mag.
Nov. 9	23	21	11.08	9.0

69 PEGASI, +24° 24′.

	h.	m.	s.	Mag.
Oct. 31	23	21	13.10	
Nov. 4			13.07	

θ PISCIUM, +5° 40′.

	h.	m.	s.	Mag.
Sept. 21	23	21	22.48	

(*), −35° 53′.

	h.	m.	s.	Mag.
Nov. 15	23	21	31.90	
18			31.91	

(*), +53° 59′.

	h.	m.	s.	Mag.
Nov. 12	23	22	26.32	8.0

ι PISCIUM, +4° 55′.

	h.	m.	s.	Mag.
Sept. 21	23	33	15.84	
Oct. 15			15.89	
21			15.89	
Nov. 3			15.85	
7			15.75	
8			15.88	
9			15.87	
26			15.85	
Dec. 1			15.92	
2			15.85	

B. A. C. 8269, +3° 25′.

	h.	m.	s.	Mag.
Sept. 21	23	42	6.31	

B. A. C. 8270, +3° 23′.

	h.	m.	s.	Mag.
Sept. 21	23	42	10.65	

ω PISCIUM, +6° 9′.

	h.	m.	s.	Mag.
Nov. 3	23	52	38.17	
4			38.19	
Dec. 1			38.15	

(*), −35° 23′.

	h.	m.	s.	Mag.
Oct. 21	23	56	20.59	8.8

(*), −35° 23′.

	h.	m.	s.	Mag.
Oct. 21	23	56	39.90	9.0

MEAN DECLINATIONS OF STARS

FOR 1870.0,

GIVEN BY INDIVIDUAL OBSERVATIONS

WITH THE

MURAL CIRCLE.

1870.

MEAN DECLINATIONS FOR 1870.0.

MURAL CIRCLE.

O. Arg. S. 8, 0^{h} 1^{m} 41^{s}.

			°	′	″
October	31		−19	56	5.0

O. Arg. S. 9, 0^{h} 1^{m} 45^{s}.

			°	′	″
October	31		−19	56	50.0

Weisse O, 21, 0^{h} 3^{m} 14^{s}.

			°	′	″
November	1		+11	59	16.9

Weisse O, 24, 0^{h} 3^{m} 19^{s}.

			°	′	″
October	25		+ 3	26	35.7

Groombridge 34, 0^{h} 11^{m} 0^{s}.

			°	′	″
November	18		+43	17	8.4
	19				9.5
December	1				10.4

B. A. C. 77, 0^{h} 16^{m} 44^{s}.

			°	′	″
November	12		−31	45	25.0
	15				23.4

Weisse O, 306, 0^{h} 19^{m} 17^{s}.

			°	′	″
November	12		− 9	4	19.2
	15				16.3

Weisse O, 321, 0^{h} 20^{m} 22^{s}.

			°	′	″
November	7		− 4	40	57.2

48 Piscium, 0^{h} 21^{m} 29^{s}.

			°	′	″
November	1		+15	43	32.9
	7				34.4

B. A. C. 103, 0^{h} 21^{m} 31^{s}.

			°	′	″
October	8		−33	43	28.9
November	4				30.2
	19				(39.5)

O. Arg. S. 210, 0^{h} 21^{m} 53^{s}.

			°	′	″
October	22		−21	2	58.8
	24				55.0

Lacaille 98, 0^{h} 22^{m} 6^{s}.

			°	′	″
October	25		−30	0	10.8

(*), 0^{h} 28^{m} 13^{s}.

			°	′	″
November	9		+ 1	6	0.6

O. Arg. S. 284, 0^{h} 29^{m} 13^{s}.

			°	′	″
October	8		−27	34	23.0

B. A. C. 160, 0^{h} 30^{m} 41^{s}.

			°	′	″
November	12		−25	28	58.9
	15				57.6

Weisse O, 511, 0^{h} 31^{m} 24^{s}.

			°	′	″
October	31		+ 4	24	49.2
November	2				52.6

O. Arg. S. 312, 0^{h} 31^{m} 40^{s}.

			°	′	″
November	3		−30	13	37.2
	26				38.6

ε Andromedæ, 0^{h} 31^{m} 42^{s}.

			°	′	″
January	11		+28	36	16.4
November	19				19.8

B. A. C. 167, 0^{h} 32^{m} 28^{s}.

			°	′	″
November	17		+ 2	24	30.9
	18				29.0

Weisse O, 571, 0^{h} 34^{m} 18^{s}.

			°	′	″
November	1		+ 4	3	14.1
	7				14.4

(*), 0^{h} 35^{m} 15^{s}.

			°	′	″
November	10		+ 1	5	5.5
	12				4.3

(*), 0^{h} 35^{m} 40^{s}.

			°	′	″
October	8		+ 4	2	7.7
	25				6.6
November	5				8.1

O. Arg. S. 388, 0^{h} 38^{m} 2^{s}.

			°	′	″
November	15		−27	13	59.2

Weisse O, 649, 0^{h} 38^{m} 27^{s}.

			°	′	″
November	17		+ 1	5	41.2
	18				40.8

Weisse O, 677, 0^{h} 40^{m} 6^{s}.

			°	′	″
November	17		− 5	7	41.6
	19				40.3

61 Piscium, 0^{h} 41^{m} 4^{s}.

			°	′	″
November	2		+20	12	52.0
	15				52.7
	26				53.1

Weisse O, 706, 0^{h} 41^{m} 30^{s}.

			°	′	″
November	18		+ 3	22	14.3

Groombridge 148, 0^{h} 41^{m} 44^{s}.

			°	′	″
October	12		+70	3	56.0
	24				55.4

O. Arg. S. 428, 0^{h} 42^{m} 5^{s}.

			°	′	″
October	8		−15	27	33.6

ν Andromedæ, 0^{h} 42^{m} 41^{s}.

			°	′	″
November	2		+40	22	13.9
	29				14.6

i Piscium, (1st *), 0^{h} 42^{m} 54^{s}.

			°	′	″
January	11		+27	0	5.9
November	1				9.2
December	29				10.6

i Piscium, (2d *), 0^{h} 42^{m} 54^{s}.

			°	′	″
January	11		+27	0	4.8
November	1				6.7
December	29				8.6

B. A. C. 230, 0^{h} 42^{m} 56^{s}.

			°	′	″
October	31		−14	16	1.3

Weisse O, 770, 0^{h} 44^{m} 56^{s}.

			°	′	″
November	19		+ 3	18	55.4

Lacaille 234, 0^{h} 45^{m} 15^{s}.

			°	′	″
November	3		−39	14	10.1
	4				9.9

Weisse O, 786, 0^{h} 45^{m} 58^{s}.

			°	′	″
November	9		+10	12	29.1

Lacaille 238, 0^{h} 46^{m} 21^{s}.

			°	′	″
October	24		−24	42	48.8
November	5				51.3

Lacaille 241, 0^{h} 46^{m} 52^{s}.

			°	′	″
November	15		−25	29	5.8
	18				4.8
	23				4.5

(*), 0^{h} 47^{m} 20^{s}.

			°	′	″
October	25		+ 1	19	36.0
November	2				37.7
	12				(28.8)
	17				(43.8)

Very faint.

(*), 0^{h} 49^{m} 4^{s}.

			°	′	″
October	24		− 1	29	55.7

ε Piscium, 0^{h} 56^{m} 15^{s}.

			°	′	″
November	26		+ 7	11	23.4
December	1				22.6

B. A. C. 306, 0^{h} 58^{m} 26^{s}.

			°	′	″
November	12		−34	13	50.5
	15				47.8

Lalande 1966, 1^{h} 1^{m} 26^{s}.

			°	′	″
November	17		+60	50	62.3
	18				59.3
	19				62.4

θ Cassiopeæ, 1^{h} 3^{m} 13^{s}.

			°	′	″
January	8		+54	27	29.1

B. A. C. 341, 1^{h} 3^{m} 17^{s}.

			°	′	″
January	11		+14	58	53.1

Polaris, (Comp.), 1^{h} 10^{m} 11^{s}.

			°	′	″
November	3		+88	36	43.3
	26				45.1
April	25	S. P.			42.3
May	9	S. P.			40.1

Weisse I, 188, 1^{h} 13^{m} 24^{s}.

			°	′	″
October	24		+13	4	59.5
November	8				57.0

(*), 1^{h} 13^{m} 55^{s}.

			°	′	″
December	1		+ 5	56	18.7

A CASSIOPEÆ, $1^{h}\ 21^{m}\ 41^{s}$.

		°	′	″
November	19 . .	+69	35	40.6

LALANDE 2751, $1^{h}\ 25^{m}\ 17^{s}$.

November	17 . .	+68	16	32.0
	18 . .			31.5

(*), $1^{h}\ 26^{m}\ 10^{s}$.

November	26 . .	+15	1	41.1

WEISSE (2) I, 575, $1^{h}\ 27^{m}\ 7^{s}$.

November	26 . .	+15	6	9.5

B. A. C. 472, $1^{h}\ 28^{m}\ 9^{s}$.

November	17 . .	+ 0	17	16.6
	19 . .			16.9

LALANDE 2966, $1^{h}\ 32^{m}\ 2^{s}$.

November	18 . .	+66	15	32.8
December	1 . .			34.6

LACAILLE 477, $1^{h}\ 32^{m}\ 42^{s}$.

January	5 . .	−32	49	50.3
	7 . .			50.4

WEISSE I, 557, $1^{h}\ 32^{m}\ 55^{s}$.

October	22 . .	+14	36	3.9

WEISSE I, 558, $1^{h}\ 32^{m}\ 57^{s}$.

October	22 . .	+14	35	48.5

LACAILLE 480, $1^{h}\ 33^{m}\ 17^{s}$.

January	3 . .	−29	40	58.8

O. ARG. S. 992, $1^{h}\ 33^{m}\ 43^{s}$.

January	11 . .	−23	34	24.6
October	22 . .			21.7
	22 . .			23.0

WEISSE I, 578, $1^{h}\ 33^{m}\ 48^{s}$.

November	24 . .	+14	57	43.2
December	1 . .			37.0

B. A. C. 514, $1^{h}\ 34^{m}\ 19^{s}$.

January	10 . .	+29	23	19.4
November	7 . .			17.0

12-YEAR CAT. 150, $1^{h}\ 38^{m}\ 25^{s}$.

November	17 . .	+63	12	35.2
	18 . .			31.3
	19 . .			35.0

(*), $1^{h}\ 41^{m}\ 48^{s}$.

January	10 . .	+ 7	1	38.7

WEISSE I, 753, $1^{h}\ 42^{m}\ 58^{s}$.

		°	′	″
January	11 . .	−11	20	53.3
November	8 . .			54.6

(*), $1^{h}\ 43^{m}\ 0^{s}$.

November	7 . .	+13	53	23.2

(*), $1^{h}\ 43^{m}\ 2^{s}$.

November	7 . .	+13	42	10.2

χ CETI, $1^{h}\ 43^{m}\ 13^{s}$.

January	11 . .	−11	19	51.5
November	8 . .			48.1

ζ CETI, $1^{h}\ 45^{m}\ 2^{s}$.

January	10 . .	−10	58	42.4

WEISSE I, 820, $1^{h}\ 47^{m}\ 6^{s}$.

January	5 . .	+ 8	36	44.9

B. A. C. 607, $1^{h}\ 52^{m}\ 23^{s}$.

January	5 . .	+20	25	36.1

DURCHMUSTERUNG 217, $1^{h}\ 52^{m}\ 31^{s}$.

January	10 . .	− 1	38	25.7

WEISSE I, 1071, $2^{h}\ 0^{m}\ 44^{s}$.

January	10 . .	+ 8	13	30.1

WEISSE I, 1075, $2^{h}\ 1^{m}\ 2^{s}$.

November	18 . .	− 1	13	29.6
	26 . .			29.0

WEISSE I, 1080, $2^{h}\ 1^{m}\ 26^{s}$.

January	10 . .	+ 8	13	53.3

O. ARG. N. 2484, $2^{h}\ 4^{m}\ 51^{s}$.

January	7 . .	+52	26	44.2

LALANDE 3987, $2^{h}\ 5^{m}\ 12^{s}$.

November	26 . .	+67	4	25.1
December	1 . .			24.7

O. ARG. N. 2511, $2^{h}\ 6^{m}\ 6^{s}$.

January	3 . .	+53	55	22.2

WEISSE II, 147, $2^{h}\ 11^{m}\ 19_{s}$.

November	18 . .	+ 1	8	34.1
	26 . .			35.0

B. A. C. 728, $2^{h}\ 15^{m}\ 18^{s}$.

November	7 . .	+10	14	34.8
	8 . .			35.6

70 CETI, $2^{h}\ 15^{m}\ 35^{s}$.

		°	′	″
January	8 . .	− 1	28	39.7

LACAILLE 750, $2^{h}\ 23^{m}\ 3^{s}$.

January	7 . .	−23	47	17.9

WEISSE II, 373, $2^{h}\ 23^{m}\ 27^{s}$.

January	3 . .	+13	40	56.5

(*), $2^{h}\ 23^{m}\ 27^{s}$.

January	8 . .	−27	50	21.0
	10 . .			22.0

WEISSE (2) II, 669, $2^{h}\ 28^{m}\ 51^{s}$.

January	3 . .	+38	10	19.0

WEISSE II, 464, $2^{h}\ 29^{m}\ 0^{s}$.

November	18 . .	+ 6	15	58.3
	26 . .			55.7

ν CETI, $2^{h}\ 29^{m}\ 3^{s}$.

January	5 . .	+ 5	1	28.6

WEISSE (2) II, 718, $2^{h}\ 30^{m}\ 52^{s}$.

November	18 . .	+30	15	57.0
	26 . .			56.2

LACAILLE 813, $2^{h}\ 33^{m}\ 6^{s}$.

January	7 . .	−26	18	17.8

(*), $2^{h}\ 33^{m}\ 10^{s}$.

January	3 . .	−31	9	40.8
	26 . .			44.4

(*), $2^{h}\ 33^{m}\ 22^{s}$.

January	8 . .	+21	33	60.4
	10 . .			59.2

LACAILLE 814, $2^{h}\ 33^{m}\ 23^{s}$.

January	22 . .	−28	22	54.1
	25 . .			53.2

LACAILLE 816, $2^{h}\ 33^{m}\ 39^{s}$.

January	25 . .	−26	7	51.7

O. ARG. S. 1735, $2^{h}\ 34^{m}\ 26^{s}$.

January	26 . .	−31	11	31.6

WEISSE II, 603, $2^{h}\ 35^{m}\ 45^{s}$.

January	10 . .	+12	42	39.8

B. A. C. 854, $2^{h}\ 38^{m}\ 28^{s}$.

January	3 . .	−26	2	54.9
	26 . .			59.6

LACAILLE 910, $2^{h}\ 47^{m}\ 44^{s}$.

		°	′	″
January	3 . .	−12	54	17.9

ρ^2 ARIETIS, $2^{h}\ 48^{m}\ 31^{s}$.

January	5 . .	+17	48	12.9

WEISSE II, 853, $2^{h}\ 49^{m}\ 34^{s}$.

January	5 . .	− 0	0	19.3

LACAILLE 922, $2^{h}\ 49^{m}\ 46^{s}$.

January	8 . .	−25	49	48.0

O. ARG. S. 1910, $2^{h}\ 50^{m}\ 15^{s}$.

January	7 . .	−23	44	46.7

WEISSE II, 881, $2^{h}\ 51^{m}\ 27^{s}$.

January	10 . .	+14	37	56.2

(*), $2^{h}\ 52^{m}\ 2^{s}$.

January	10 . .	+14	40	28.2

LALANDE 5490, $2^{h}\ 53^{m}\ 36^{s}$.

November	18 . .	+61	12	58.0
December	1 . .			59.6

WEISSE (2) III, 67, $3^{h}\ 5^{m}\ 2^{s}$.

January	3 . .	+38	28	41.0

12 ERIDANI, $3^{h}\ 6^{m}\ 35^{s}$.

December	6 . .	−29	30	3.8

(*), $3^{h}\ 7^{m}\ 45^{s}$.

January	5 . .	+12	39	27.5

(*), $3^{h}\ 7^{m}\ 59^{s}$.

January	5 . .	−29	27	37.1
	10 . .			35.2

WEISSE III, 139, $3^{h}\ 9^{m}\ 14^{s}$.

February	2 . .	+13	22	7.3

(*), $3^{h}\ 10^{m}\ 41^{s}$.

January	26 . .	+23	50	51.6

WEISSE III, 168, $3^{h}\ 10^{m}\ 41^{s}$.

February	2 . .	+13	22	3.8

(*), $3^{h}\ 14^{m}\ 32^{s}$.

January	3 . .	+ 8	53	35.3

(*), $3^{h}\ 14^{m}\ 46^{s}$.

January	10 . .	−24	35	5.6

B. A. C. 1047, $3^h\ 15^m\ 10^s$.

		°	′	″
January	7	−27	4	38.6

B. A. C. 1049, $3^h\ 15^m\ 42^s$.

January	10	−24	6	11.9

Lacaille 1079, $3^h\ 18^m\ 11^s$,

January	5	−28	23	34.7

B. A. C. 1058, $3^h\ 18^m\ 36^s$.

January	21	+59	29	4.6

Weisse III, 334, $3^h\ 20^m\ 8^s$.

January	3	+12	16	49.4

Weisse III, 343, $3^h\ 20^m\ 38^s$.

January	25	+ 8	18	41.4

(*), $3^h\ 21^m\ 10^s$.

February	2	+12	15	37.6

Lacaille 1102, $3^h\ 21^m\ 18^s$.

February	1	−29	1	4.4

Lacaille 1108, $3^h\ 22^m\ 46^s$.

January	7	−36	8	4.5

Lacaille 1111, $3^h\ 23^m\ 7^s$.

January	26	−36	18	20.6
February	1			18.1

(*), $3^h\ 23^m\ 10^s$.

January	10	−18	18	56.6

Rumker 875, $3^h\ 23^m\ 7^s$.

November	9	+12	27	18.8

Carrington 491, $3^h\ 24^m\ 42^s$.

December	6	+86	13	52.8
	16			51.9

(*), $3^h\ 27^m\ 15^s$.

January	10	+31	16	5.4

B. A. C. 1111, $3^h\ 31^m\ 0^s$.

December	6	+62	47	31.9
	7			32.0

(*), $3^h\ 32^m\ 12^s$.

December	21	−28	19	47.3

11 Tauri, $3^h\ 33^m\ 0^s$.

		°	′	″
December	9	+24	54	24.8

o Persei, $3^h\ 34^m\ 10^s$.

January	5	+33	32	46.6
	7			43.5

Weisse (2) III, 733, $3^h\ 35^m\ 10^s$.

January	11	+26	9	19.0
	25			20.5

O. Arg. S. 2452, $3^h\ 35^m\ 29^s$.

January	7	−28	23	19.5

Lalande 6820, $3^h\ 36^m\ 6^s$.

January	25	+36	2	49.9

19 Tauri, $3^h\ 37^m\ 28^s$.

January	26	+24	3	24.9

4 Pleiadum, $3^h\ 37^m\ 55^s$.

December	21	+23	55	39.2

O. Arg. S. 2488, $3^h\ 38^m\ 14^s$.

November	9	−22	20	56.4

Lalande 6888, (1st *), $3^h\ 38^m\ 14^s$.

December	6	+41	3	49.8
	7			49.5

Lalande 6888, (2d *), $3^h\ 38^m\ 14^s$.

December	7	+41	3	56.9

(*), $3^h\ 38^m\ 17^s$.

January	26	+24	7	11.3

B. A. C. 1163, $3^h\ 39^m\ 14^s$.

January	26	+23	56	52.5

15 Pleiadum, $3^h\ 39^m\ 36^s$.

December	9	+23	43	26.5

18 Pleiadum, $3^h\ 39^m\ 36^s$.

December	9	+23	44	5.8

Weisse III, 746, $3^h\ 39^m\ 40^s$.

January	21	− 9	24	57.4

22 Pleiadum, $3^h\ 39^m\ 43^s$.

December	21	+23	30	31.3

e Tauri, $3^h\ 41^m\ 8^s$.

		°	′	″
January	3	+10	44	32.4

Weisse (2) III, 890, $3^h\ 41^m\ 11^s$.

February	1	+34	30	58.2
	2			58.3

28 Tauri, $3^h\ 41^m\ 24^s$.

December	9	+23	44	13.7

B. A. C. 1182, $3^h\ 41^m\ 31^s$.

January	26	+23	58	52.6

Rumker 994, $3^h\ 41^m\ 32^s$.

January	26	+23	59	45.6

Weisse III, 781, $3^h\ 41^m\ 41^s$.

February	10	+11	18	25.3

Weisse (2) III, 906, $3^h\ 41^m\ 53^s$.

February	1	+34	25	20.8
	2			21.2

Weisse (2) III, 932, $3^h\ 43^m\ 5^s$.

January	25	+34	12	39.7
February	1			(35.2)

Radcliffe 1084, $3^h\ 43^m\ 20^s$.

February	2	+40	24	9.6

Weisse (2) III, 931, $3^h\ 43^m\ 55^s$.

January	3	+26	40	50.0

(*), $3^h\ 45^m\ 27^s$.

January	10	+38	8	15.7

Weisse (2) III, 972, $3^h\ 45^m\ 28^s$.

January	10	+38	9	32.0

Groombridge 745, $3^h\ 45^m\ 36^s$.

December	6	+75	47	55.2

Weisse (2) III, 1143, $3^h\ 54^m\ 30^s$.

December	6	+34	57	22.1
	7			26.2
	9			24.9

ψ Tauri, $3^h\ 59^m\ 1^s$.

December	9	+28	38	52.4
	16			49.7

c Persei, $3^h\ 59^m\ 12^s$.

January	10	+47	21	46.3

Rumker 1089, $4^h\ 0^m\ 20^s$.

		°	′	″
January	25	+14	43	45.4

Lacaille 1346, $4^h\ 0^m\ 25^s$.

January	5	−31	24	12.5
	21			12.8

O. Arg. S. 2803, $4^h\ 0^m\ 37^s$.

February	1	−23	37	58.9

Lalande 7773, $4^h\ 5^m\ 2^s$.

January	3	+44	24	55.6
February	2			55.9

Weisse (2) IV, 65, $4^h\ 5^m\ 9^s$.

January	10	+17	29	52.8

Lalande 7817, $4^h\ 6^m\ 2^s$.

February	2	+44	26	7.7

(*), $4^h\ 6^m\ 10^s$.

February	1	− 6	50	47.7

Weisse IV, 114, $4^h\ 7^m\ 18^s$.

January	26	−10	43	9.8

B. A. C. 1308, $4^h\ 8^m\ 51^s$.

January	25	−30	26	35.2

Weisse (2) IV, 166, $4^h\ 9^m\ 49^s$.

January	5	+20	14	2.3

Lacaille 1375, $4^h\ 9^m\ 55^s$.

January	25	−30	23	54.7

O. Arg. S. 2939, $4^h\ 10^m\ 17^s$.

November	9	−22	28	31.9

B. A. C. 1313, $4^h\ 10^m\ 25^s$.

December	7	+60	25	23.4
	8			22.7

(*), $4^h\ 11^m\ 48^s$.

January	25	−30	24	18.6

(*), $4^h\ 13^m\ 58^s$.

January	10	−31	38	42.1

O. Arg. S. 3022, $4^h\ 16^m\ 10^s$.

January	21	−26	1	33.6

(*), $4^h\ 17^m\ 1^s$.

November	9	+16	35	1.8

(*), 4^h 17^m 23^s.

° ′ ″
February 1 . . + 6 31 13.3

(*), 4^h 17^m 50^s.

January 25 . . −20 32 28.1

(*), 4^h 20^m 8^s.

January 5 . . +16 26 4.0
26 . . 10.7
Very faint.

(*), 4^h 23^m 17^s.

January 3 . . +29 1 28.4

Lacaille 1485, 4^h 24^m 44^s.

January 25 . . −29 9 52.8

(*), 4^h 25^m 38^s.

January 21 . . +28 27 14.4

O. Arg. S. 3154, 4^h 26^m 10^s.

January 25 . . −29 9 44.9

53 Eridani, 4^h 32^m 13^s.

January 3 . . −14 33 33.7
10 . . 35.0
25 . . 34.4

Weisse (2) IV, 676, 4^h 32^m 28^s.

December 6 . . +41 52 37.4
7 . . 36.9

(*), 4^h 34^m 48^s.

January 5 . . −25 54 7.1

(*), 4^h 34^m 55^s.

January 10 . . −25 53 18.2

Lacaille 1553, 4^h 36^m 3^s.

January 5 . . −39 3 35.8

Lacaille 1557, 4^h 36^m 39^s.

February 1 . . −39 50 2.9

(*), 4^h 36^m 51^s.

January 3 . . −23 25 32.3

Lacaille 1568, 4^h 38^m 10^s.

January 5 . . −39 6 14.5

O. Arg. S. 3382, 4^h 41^m 29^s.

January 25 . . −26 32 12.7

Lalande 9012, 4^h 42^m 14^s.

° ′ ″
December 6 . . +45 37 39.6
7 . . 38.3

Lacaille 1611, 4^h 44^m 24^s.

January 10 . . −35 18 53.7

Lacaille 1617, 4^h 45^m 8^s.

January 26 . . −35 19 45.9

Weisse IV, 957, 4^h 45^m 11^s.

February 10 . . +14 1 53.2

(*), 4^h 45^m 13^s.

February 2 . . +44 8 30.8

Lacaille 1613, 4^h 45^m 17^s.

February 1 . . −27 19 31.1

(*), 4^h 45^m 42^s.

February 19 . . +22 33 18.3

Weisse (2) IV, 1012, 4^h 46^m 5^s.

February 19 . . +22 33 15.2

Lacaille 1631, 4^h 47^m 16^s.

January 21 . . −38 49 46.1

(*), 4^h 48^m 58^s.

January 25 . . +30 0 58.5

O. Arg. S. 3494, 4^h 49^m 36^s.

December 16 . . −29 5 35.7

Lacaille 1659, (1st *), 4^h 50^m 47^s.

December 8 . . −39 58 3.8

Lacaille 1659, (2d *), 4^h 51^m 9^s.

December 7 . . −39 57 52.3
8 . . 54.3

Weisse (2) IV, 1138, 4^h 51^m 26^s.

January 10 . . +22 23 14.8

Lacaille 1666, 4^h 53^m 11^s.

January 26 . . −35 5 43.1
February 10 . . 41.7

(*), 4^h 53^m 31^s.

December 21 . . −29 5 12.9

Lacaille 1678, 4^h 54^m 51^s.

December 8 . . −37 4 18.4
16 . . 17.9

O. Arg. S. 3576, 4^h 54^m 55^s.

° ′ ″
February 19 . . −29 46 19.9

(*), 4^h 56^m 27^s.

January 29 . . +27 33 43.0

Weisse (2) IV, 1266, 4^h 56^m 37^s.

January 21 . . +21 27 29.5

Weisse (2) IV, 1261, 4^h 56^m 40^s.

February 2 . . +27 30 42.0

(*), 4^h 56^m 42^s.

February 25 . . +45 17 30.4

m Tauri, 4^h 59^m 46^s.

January 26 . . +18 28 3.7
March 3 . . 5.4

B. A. C. 1578, 4^h 59^m 59^s.

January 10 . . −26 19 44.9

103 Tauri, 5^h 0^m 12^s.

January 3 . . +24 5 29.6

B. A. C. 1565, 5^h 1^m 9^s.

January 25 . . +79 4 28.8
December 8 . . 27.6
9 . . 29.3

O. Arg. S. 3670, 5^h 1^m 30^s.

January 5 . . −28 44 1.2
February 19 . . 9.5

(*), 5^h 1^m 57^s.

January 5 . . −28 44 16.0

(*), 5^h 3^m 38^s.

December 16 . . + 4 15 35.7

O. Arg. S. 3717, 5^h 4^m 5^s.

February 16 . . −25 22 35.5

O. Arg. S. 3720, 5^h 4^m 8^s.

February 1 . . −25 33 6.6

(*), 5^h 4^m 11^s.

January 21 . . +30 16 35.8

Weisse V, 56, 5^h 4^m 51^s.

January 26 . . + 4 10 34.5

(*), 5^h 4^m 54^s.

February 25 . . −25 38 23.3

(*), 5^h 5^m 18^s.

° ′ ″
February 10 . . −25 22 30.6

(*), 5^h 5^m 37^s.

February 2 . . +30 18 25.3

(*), 5^h 5^m 38^s.

December 21 . . −25 38 22.8

(*), 5^h 5^m 52^s.

February 1 . . −25 35 30.7

Weisse (2) V, 111, 5^h 5^m 57^s.

January 21 . . +30 14 39.3

(* 130) Washington, 5^h 7^m 0^s.

January 10 . . + 2 13 1.1

Weisse (2) V, 287, 5^h 11^m 42^s.

January 3 . . +30 22 24.7

Lalande 9884, 5^h 17^m 38^s.

December 8 . . +78 15 57.5
9 . . 59.4

O. Arg. S. 3917, 5^h 18^m 14^s.

January 25 . . −16 10 41.9

Weisse (2) V, 530, 5^h 19^m 51^s.

January 3 . . +30 31 55.5

(*), 5^h 20^m 54^s.

December 8 . . +54 33 39.1

β Leporis, 5^h 22^m 40^s.

January 10 . . −20 51 51.8

Weisse (2) V, 647, 5^h 23^m 33^s.

February 1 . . +30 49 32.3

(*), 5^h 23^m 52^s.

February 10 . . − 0 25 34.8
16 . . 34.7

O. Arg. S. 4003, 5^h 24^m 6^s.

February 10 . . −30 13 20.6

χ Aurigæ, 5^h 24^m 16^s.

January 21 . . +32 5 35.5
25 . . 37.3

119 Tauri, 5^h 24^m 35^s.

January 5 . . +18 29 43.8

120 Tauri, $5^h\ 26^m\ 53^s$.

		° ′ ″
January	5	+18 26 41.9

Weisse (2) V, 782, $5^h\ 27^m\ 39^s$.

March	1	+31 3 52.0

(*), $5^h\ 27^m\ 53^s$.

February	19	−17 52 37.7
	25	38.1

Groombridge 990, $5^h\ 28^m\ 28^s$.

December	16	+51 21 24.4

θ^2 Orionis, (1st *), $5^h\ 29^m\ 0^s$.

December	21	− 5 30 12.1

θ^2 Orionis, (2d *), $5^h\ 29^m\ 4^s$.

December	21	− 5 30 15.0

(*), $5^h\ 29^m\ 34^s$.

February	2	+26 40 58.0

(*), $5^h\ 29^m\ 55^s$.

February	10	− 1 19 14.9

Groombridge 995, $5^h\ 30^m\ 53^s$.

December	9	+53 25 28.6

Lalande 10621, $5^h\ 32^m\ 35^s$.

February	25	+38 6 59.9

(*), $5^h\ 32^m\ 42^s$.

January	26	+70 17 42.6
February	1	46.2

(*), $5^h\ 32^m\ 47^s$.

February	16	−29 0 57.7
March	1	56.9

O. Arg. N. 6082, $5^h\ 32^m\ 51^s$.

January	25	+70 12 0.3

(*), $5^h\ 32^m\ 53^s$.

January	5	−13 37 26.2

Lacaille 1918, $5^h\ 32^m\ 55^s$.

February	19	−27 17 18.0
November	10	17.0

Lalande 10650, $5^h\ 33^m\ 23^s$.

February	25	+38 7 44.4

Groombridge 1011, $5^h\ 33^m\ 55^s$.

February	25	+38 7 48.2

Lalande 10797, $5^h\ 37^m\ 8^s$.

		° ′ ″
December	8	+37 14 43.2
	9	41.3

Lacaille 1991, $5^h\ 42^m\ 10^s$.

January	5	−27 10 53.1

(*), $5^h\ 42^m\ 31^s$.

January	26	−13 41 59.1

Lacaille 1993, $5^h\ 42^m\ 44^s$.

January	21	−35 43 22.5

(*), $5^h\ 43^m\ 28^s$.

February	1	+71 41 25.7
	10	24.9

(*), $5^h\ 43^m\ 31^s$.

February	1	+71 36 59.9
	10	59.9

B. A. C. 1894, $5^h\ 49^m\ 10^s$.

January	25	−29 10 17.9

Lacaille 2048, $5^h\ 49^m\ 27^s$.

January	26	−26 41 15.1

(*), $5^h\ 49^m\ 31^s$.

February	10	−28 56 39.0

(*), $5^h\ 49^m\ 33^s$.

February	25	+21 57 17.4

(*), $5^h\ 49^m\ 42^s$.

January	21	+ 7 13 36.1

Weisse (2) V, 1621, $5^h\ 50^m\ 15^s$.

February	19	+22 3 (52.2)
	25	58.2
March	3	59.8

(*), $5^h\ 50^m\ 35^s$.

January	5	−29 56 26.3

(*), $5^h\ 50^m\ 37^s$.

January	5	−29 59 18.0

(*), $5^h\ 50^m\ 46^s$.

January	3	+ 7 28 52.7

Lacaille 2062, $5^h\ 50^m\ 59^s$.

January	10	−23 14 7.8

(*), $5^h\ 51^m\ 4^s$.

January	21	+ 7 21 10.5

(*), $5^h\ 51^m\ 7^s$.

		° ′ ″
December	8	−23 10 22.2

Lacaille 2065, $5^h\ 51^m\ 9^s$.

January	29	−31 33 10.3

O. Arg. S. 4474, $5^h\ 51^m\ 54^s$.

January	25	−28 46 30.0
November	10	32.8

Lacaille 2085, $5^h\ 53^m\ 12^s$.

March	5	−34 29 26.4

Weisse V, 1368, $5^h\ 54^m\ 2^s$.

March	5	−13 58 18.3

Lacaille 2094, $5^h\ 55^m\ 1^s$.

February	10	−35 21 48.5

μ Orionis, $5^h\ 55^m\ 4^s$.

February	19	+ 9 38 40.1

Rumker 1673, $5^h\ 55^m\ 25^s$.

March	3	+26 16 41.1

B. A. C. 1941, $5^h\ 56^m\ 32^s$.

January	25	−33 54 50.2

(*), $5^h\ 59^m\ 35^s$.

January	5	−28 36 39.8

Weisse (2) V, 1980, $6^h\ 0^m\ 26^s$.

January	21	+25 58 51.9

(*), $6^h\ 1^m\ 15^s$.

January	10	−23 31 40.6

Lacaille 2131, $6^h\ 1^m\ 25^s$.

February	10	−25 54 57.1

(*), $6^h\ 2^m\ 43^s$.

February	16	+31 9 44.7

Lacaille 2151, $6^h\ 2^m\ 57^s$.

January	25	−36 17 30.7
	26	34.3

(*), $6^h\ 3^m\ 2^s$.

January	10	+31 26 55.3

Weisse (2) VI, 12, $6^h\ 3^m\ 17^s$.

February	25	+31 11 49.0
March	3	49.3

Weisse (2) VI, 55, $6^h\ 3^m\ 40^s$.

		° ′ ″
January	29	− 9 24 40.9
March	5	40.3

Weisse (2) VI, 73, $6^h\ 4^m\ 13^s$.

January	29	− 9 19 53.2

Weisse (2) VI, 136, $6^h\ 6^m\ 4^s$.

January	10	+31 30 27.5
	25	27.4

(*), $6^h\ 7^m\ 31^s$,

January	5	−27 41 36.4
	26	40.1

(*), $6^h\ 7^m\ 33^s$.

January	5	−27 42 46.5
	26	49.8

(*), $6^h\ 7^m\ 43^s$.

January	5	−27 42 3.9
	26	7.3

Lalande 12053, $6^h\ 12^m\ 47^s$.

March	5	+21 8 37.6
February	1	35.1

(*), $6^h\ 13^m\ 9^s$.

January	21	+21 12 32.2

O. Arg. S. 4961, $6^h\ 14^m\ 6^s$.

February	16	−28 57 46.3

Lacaille 2226, $6^h\ 15^m\ 8^s$.

December	8	−23 34 45.9

B. A. C. 2095, $6^h\ 24^m\ 6^s$.

December	8	+79 41 49.9
	9	51.1

O. Arg. N. 7009, $6^h\ 25^m\ 46^s$.

January	10	+49 58 44.6

O. Arg. N. 7032, $6^h\ 28^m\ 8^s$.

January	10	+42 12 22.0

(*), $6^h\ 37^m\ 4^s$.

January	21	−23 13 27.6

(*), $6^h\ 37^m\ 25^s$.

February	16	−31 32 26.2

ξ Geminorum, $6^h\ 38^m\ 0^s$.

January	29	+13 1 59.4
February	10	59.7

O. Arg. S. 5574, $6^h 38^m 2^s$.

° ′ ″
February 1 . . −29 6 41.3
2 . . 39.0

Weisse (2) VI, 1163, $6^h 38^m 46^s$.

February 19 . . +23 57 55.4

(*), $6^h 39^m 9^s$.

February 10 . . +13 4 42.4

Lacaille 2443, $6^h 41^m 12^s$.

January 10 . . −29 25 24.9

Lacaille 2448, (1st *), $6^h 42^m 21^s$.

January 10 . . −28 25 5.8

Lacaille 2448, (2d *), $6^h 42^m 21^s$.

January 10 . . −28 25 55.8

O. Arg. S. 5704, $6^h 42^m 45^s$.

January 21 . . −26 23 31.1

O. Arg. N. 7299, $6^h 43^m 14^s$.

February 25 . . +51 47 52.1
March 3 . . 53.5

(*), $6^h 43^m 14^s$.

February 26 . . +51 40 14.2

(*), $6^h 43^m 36^s$.

January 25 . . −28 36 14.9
March 5 . . 18.7

O. Arg. S. 5732, $6^h 43^m 48^s$.

February 16 . . −29 35 56.7

(*), $6^h 44^m 21^s$.

December 8 . . −28 30 18.6

(*), $6^h 44^m 30^s$.

January 25 . . −28 34 44.3

(*), $6^h 44^m 40^s$.

February 1 . . −32 23 40.2

κ Canis Majoris, $6^h 44^m 59^s$.

February 1 . . −32 21 36.0

Lacaille 2473, $6^h 45^m 19^s$.

February 19 . . −25 37 44.0

B. A. C. 2251, $6^h 45^m 28^s$.

March 1 . . −31 33 24.4

(*), $6^h 45^m 31^s$.

° ′ ″
March 1 . . −31 33 3.1

(*), $6^h 45^m 52^s$.

January 25 . . −28 33 18.9
March 3 . . 17.9

(*), $6^h 45^m 59^s$.

March 5 . . −27 6 32.6

(*), $6^h 46^m 0^s$.

January 25 . . −28 34 55.1
March 3 . . 55.3

(*), $6^h 46^m 29^s$.

February 25 . . −25 36 5.1

(*) $6^h 48^m 17^s$.

March 19 . . −24 13 35.5
21 . . 33.9

B. A. C. 2266, $6^h 48^m 28^s$.

December 9 . . −28 21 51.0

Lacaille 2507, $6^h 48^m 48^s$.

February 2 . . −23 46 2.7

(*), $6^h 49^m 9^s$.

January 20 . . −28 47 2.8

(*), $6^h 49^m 16^s$.

February 16 . . −38 49 11.5

O. Arg. S. 5887, $6^h 49^m 21^s$.

February 10 . . −27 23 48.3

(*), $6^h 50^m 9^s$.

February 10 . . −38 54 21.8

Weisse VI, 1579, $6^h 51^m 56^s$.

December 8 . . −14 46 8.7

(*), $6^h 51^m 59^s$.

March 24 . . −30 43 25.3

Weisse VI, 1587, $6^h 52^m 7^s$.

December 8 . . −14 46 42.1

O. Arg. S. 5961, $6^h 52^m 30^s$.

February 26 . . −27 21 56.6

Lacaille 2544, $6^h 53^m 11^s$.

February 10 . . −23 42 23.0

Lacaille 2566, $6^h 55^m 12^s$.

° ′ ″
February 1 . . −30 57 45.7
2 . . 47.7

(*), $6^h 55^m 16^s$.

February 1 . . −30 53 18.4

Lacaille 2562, $6^h 55^m 39^s$.

February 10 . . −29 31 29.1
March 5 . . 29.0

(*), $6^h 56^m 12^s$.

February 25 . . −30 26 35.5

(*), $6^h 56^m 14^s$.

February 25 . . −30 25 48.8

Lacaille 2623, $7^h 2^m 18^s$.

February 16 . . −26 9 25.1

(*), $7^h 2^m 31^s$.

March 18 . . −14 40 58.4
19 . . 55.2

(*), $7^h 2^m 38^s$.

March 18 . . −14 42 12.2
19 . . 12.0

(*), $7^h 3^m 1^s$.

January 21 . . −31 12 16.2

Lacaille 2637, $7^h 3^m 12^s$.

January 21 . . −31 13 15.3

Weisse VII, 63, $7^h 3^m 40^s$.

February 10 . . −14 34 36.4

(*), $7^h 4^m 22^s$.

January 25 . . −24 59 47.1

(*), $7^h 4^m 24^s$.

January 25 . . −24 59 55.4
February 1 . . 59.5

Rumker 2131, $7^h 4^m 44^s$.

March 3 . . +18 52 7.2
5 . . 3.0

Lacaille 2647, $7^h 5^m 4^s$.

March 24 . . −27 16 50.8

22 Monocerotis, $7^h 5^m 14^s$.

February 26 . . − 0 16 43.3

(*), $7^h 5^m 41^s$.

° ′ ″
March 21 . . −14 48 7.5

B. A. C. 2363, $7^h 6^m 31^s$.

February 2 . . +24 55 49.9

(*), $7^h 6^m 34^s$.

March 24 . . −14 16 31.3

26 Canis Majoris, $7^h 6^m 53^s$.

February 19 . . −25 43 37.3

(*), $7^h 6^m 56^s$.

March 19 . . −14 24 9.0

Lacaille 2659, $7^h 7^m 9^s$.

February 25 . . −27 15 26.9

Weisse VII, 196, $7^h 7^m 12^s$.

March 19 . . −14 21 41.5

53 Geminorum, $7^h 7^m 52^s$.

February 26 . . +28 7 13.9

(*), $7^h 8^m 28^s$.

March 24 . . −14 20 16.2

(*), $7^h 9^m 52^s$.

March 24 . . −14 16 17.7

Weisse VII, 274, $7^h 10^m 7^s$.

March 24 . . −14 16 58.9

O. Arg. S. 6490, $7^h 10^m 9^s$.

January 21 . . −28 8 17.0

O. Arg. S. 6553, $7^h 11^m 56^s$.

February 1 . . −30 39 57.4

O. Arg. S. 6554, $7^h 11^m 58^s$.

February 1 . . −30 40 33.6

(*), $7^h 12^m 34^s$.

March 5 . . +41 55 5.2

(*), $7^h 12^m 41^s$.

February 10 . . +25 12 54.6

(*), $7^h 12^m 44^s$.

March 21 . . +25 13 14.3

WEISSE (2) VIII, 347, $7^{h}\ 12^{m}\ 56^{s}$.

° ′ ″
March 3 . . +41 33 8.9

(*), $7^{h}\ 13^{m}\ 3^{s}$.

February 10 . . +25 13 44.5

(*), $7^{h}\ 13^{m}\ 10^{s}$,

March 21 . . +25 14 16.6

(*), $7^{h}\ 13^{m}\ 20^{s}$.

March 18 . . −30 34 28.0

B. A. C, 2420, $7^{h}\ 13^{m}\ 35^{s}$.

March 18 . . −30 33 49.4

(*), $7^{h}\ 13^{m}\ 44^{s}$.

February 16 . . −30 59 24.1
25 . . 23.7

B, A, C. 2428, $7^{h}\ 14^{m}\ 23^{s}$.

February 2 . . −33 29 23.9

LACAILLE 2753, $7^{h}\ 15^{m}\ 54^{s}$.

February 19 . . −32 14 4.5
26 . . 2.5

(*), $7^{h}\ 16^{m}\ 3^{s}$.

January 21 . . −14 50 15.3

O. ARG. S. 6678, $7^{h}\ 16^{m}\ 15^{s}$.

January 25 . . −27 56 48.0

LACAILLE 2767, (1st *), $7^{h}\ 17^{m}\ 36^{s}$.

March 19 . . −35 40 22.6

LACAILLE 2767, (2d *), $7^{h}\ 17^{m}\ 36^{s}$.

March 19 . . −35 40 33.4

(*), $7^{h}\ 20^{m}\ 12^{s}$.

March 3 . . +10 20 49.4

(*), $7^{h}\ 20^{m}\ 41^{s}$.

February 10 . . −14 41 4.2

(*), $7^{h}\ 20^{m}\ 41^{s}$.

February 10 . . −14 43 4.6

B. A. C. 2466, $7^{h}\ 20^{m}\ 44^{s}$.

February 1 . . −31 28 55.3

WEISSE VII, 625, $7^{h}\ 21^{m}\ 15^{s}$.

February 16 . . −11 13 52.7
25 . . 52.2

B. A. C. 2470, $7^{h}\ 21^{m}\ 46^{s}$.

° ′ ″
March 18 . . −11 17 42.5

(*), $7^{h}\ 21^{m}\ 59^{s}$.

February 2 . . +40 42 35.1

WEISSE (2) VII, 594, $7^{h}\ 22^{m}\ 7^{s}$.

February 2 . . +40 37 33.5
March 22 . . 33.2

6 CANIS MINORIS, $7^{h}\ 22^{m}\ 34^{s}$.

February 19 . . +12 16 23.3
26 . . 23.9

WEISSE (2) VII, 613, $7^{h}\ 22^{m}\ 44^{s}$.

March 5 . . +41 44 6.7

(*), $7^{h}\ 23^{m}\ 14^{s}$.

February 10 . . −14 46 8.9

(*), $7^{h}\ 23^{m}\ 27^{s}$.

February 10 . . −14 43 25.8

(*), $7^{h}\ 23^{m}\ 34^{s}$.

January 25 . . +22 33 30.2

O. ARG. S. 6946, $7^{h}\ 25^{m}\ 19^{s}$.

March 21 . . −28 33 58.1

O. ARG. S. 6941, $7^{h}\ 25^{m}\ 22^{s}$.

March 21 . . −28 34 50.8

O. ARG. S. 7063, $7^{h}\ 29^{m}\ 39^{s}$.

February 1 . . −29 7 34.0

LACAILLE 2864, $7^{h}\ 30^{m}\ 17^{s}$.

February 16 . . −25 52 8.4
26 . . 5.0

(*), $7^{h}\ 30^{m}\ 30^{s}$.

March 5 . . −29 42 55.9

O. ARG. S. 7101, $7^{h}\ 30^{m}\ 42^{s}$.

February 19 . . −27 13 1.6
25 . . 0.2

(*), $7^{h}\ 30^{m}\ 48^{s}$.

March 5 . . −29 46 23.3

O. ARG. S. 7107, $7^{h}\ 30^{m}\ 57^{s}$.

March 24 . . −28 57 40.9
25 . . 38.4

LACAILLE 2870, $7^{h}\ 31^{m}\ 8^{s}$.

° ′ ″
March 29 . . −25 2 41.5

(*), $7^{h}\ 31^{m}\ 30^{s}$.

March 8 . . −31 1 53.0
18 . . 54.4

O. ARG. S. 7131, $7^{h}\ 31^{m}\ 47^{s}$.

February 2 . . −27 7 58.1
19 . . 55.7

(*), $7^{h}\ 31^{m}\ 50^{s}$.

March 8 . . −31 2 41.8
18 . . 46.3

O. ARG. S. 7167, $7^{h}\ 33^{m}\ 7^{s}$.

January 25 . . −31 9 32.6

(*), $7^{h}\ 34^{m}\ 0^{s}$.

February 10 . . −23 55 59.6

51 CAMELOPARDI, $7^{h}\ 34^{m}\ 16^{s}$.

March 1 . . +65 45 46.9

B. A. C. 2521, $7^{h}\ 34^{m}\ 48^{s}$.

March 3 . . +80 35 5.5

LALANDE 15006, $7^{h}\ 35^{m}\ 21_{s}$.

February 10 . . −23 58 24.6

O. ARG. S. 7289, $7^{h}\ 37^{m}\ 1^{s}$.

January 25 . . −27 37 36.6

O. ARG. S. 7376, $7^{h}\ 39^{m}\ 19^{s}$.

February 2 . . −27 19 40.4

4 PUPPIS, $7^{h}\ 39^{m}\ 58^{s}$.

February 1 . . −14 14 59.6

B, A, C. 2581, $7^{h}\ 40^{m}\ 45^{s}$.

March 5 . . −33 55 6.2

(*), $7^{h}\ 40^{m}\ 54^{s}$.

February 25 . . −27 16 22.6

(*), $7^{h}\ 42^{m}\ 0^{s}$.

January 25 . . +38 20 36.1

O. ARG. S. 7443, $7^{h}\ 42^{m}\ 24^{s}$.

March 8 . . −23 56 19.6
19 . . 20.3

O. ARG. S. 7444, $7^{h}\ 42^{m}\ 27^{s}$.

° ′ ″
March 25 . . −30 13 42.2

O. ARG. S. 7445, $7^{h}\ 42^{m}\ 28^{s}$.

February 25 . . −27 18 4.9

o PUPPIS, $7^{h}\ 42^{m}\ 41^{s}$.

February 16 . . −25 36 59.7

(*), $7^{h}\ 42^{m}\ 52^{s}$.

March 24 . . −25 26 55.7

(*), $7^{h}\ 42^{m}\ 57^{s}$.

March 24 . . −25 26 4.9

(*), $7^{h}\ 42^{m}\ 58^{s}$.

February 10 . . −23 26 45.9

(*), $7^{h}\ 42^{m}\ 58^{s}$.

February 10 . . −23 25 53.8

O, ARG. S. 7458, $7^{h}\ 43^{m}\ 3^{s}$.

March 8 . . −23 56 22.4

O. ARG. S. 7470, $7^{h}\ 43^{m}\ 30^{s}$.

March 21 . . −30 25 59.1

O. ARG. S. 7476, $7^{h}\ 43^{m}\ 48^{s}$.

March 18 . . −23 28 31.2

ξ NAVIS, $7^{h}\ 43^{m}\ 50^{s}$.

February 19 . . −24 32 8.3

(*), $7^{h}\ 44^{m}\ 10^{s}$.

March 18 . . −23 33 16.6

(*), $7^{h}\ 44^{m}\ 13^{s}$.

March 1 . . + 0 24 25.2
29 . . 24.7

O. ARG. S. 7505, $7^{h}\ 44^{m}\ 15^{s}$.

March 25 . . −30 13 56.9

B. A. C. 2590, $7^{h}\ 44^{m}\ 24^{s}$.

February 26 . . +79 49 42.0

LACAILLE 2998, $7^{h}\ 44^{m}\ 33^{s}$.

March 21 . . −23 28 18.2

(*), $7^{h}\ 44^{m}\ 35^{s}$.

March 1 . . + 0 27 22.8
29 . . 23.2

(*), $7^h\ 45^m\ 34^s$.

° ′ ″
March 1 . . + 0 29 8.7

(*), $7^h\ 46^m\ 23^s$.

March 29 . . + 0 29 24.2

B. A. C. 2651, $7^h\ 51^m\ 13^s$.

March 24 . . −29 56 23.4

(*), $7^h\ 51^m\ 41^s$.

March 19 . . −30 1 53.0

Lacaille 3078, $7^h\ 52^m\ 6^s$.

January 25 . . −34 1 53.2

(*), $7^h\ 52^m\ 12^s$.

February 16 . . −32 47 32.5
25 . . 33.4

B. A. C. 2655, $7^h\ 52^m\ 34^s$.

March 19 . . −29 59 13.6
21 . . 12.5
24 . . 13.7

Lacaille 3086, $7^h\ 52^m\ 36^s$.

February 10 . . −42 2 35.1

O. Arg. S. 7758, $7^h\ 53^m\ 18^s$.

February 26 . . −27 13 35.1
March 18 . . 32.8

(*), $7^h\ 53^m\ 54^s$.

March 24 . . −29 59 19.6

O. Arg. S. 7798, $7^h\ 54^m\ 46^s$.

March 19 . . −30 1 18.7
21 . . 17.6

ρ Argus, $8^h\ 2^m\ 0^s$.

March 25 . . −23 55 52.8

O. Arg. N. 8698, $8^h\ 4^m\ 34^s$.

February 16 . . +63 5 19.2
March 5 . . 18.9

Lacaille 3229, $8^h\ 10^m\ 43^s$.

February 10 . . −29 47 9.6
26 . . 12.7

O. Arg. S. 8343, $8^h\ 12^m\ 13^s$.

February 25 . . −24 54 56.0

Lacaille 3262, $8^h\ 14^m\ 28^s$.

March 8 . . −34 10 59.5

Lacaille 3267, $8^h\ 14^m\ 51^s$.

° ′ ″
March 19 . . −30 41 20.8

Lacaille 3272, $8^h\ 14^m\ 56^s$.

March 5 . . −37 0 36.3

(*), $8^h\ 14^m\ 57^s$.

February 16 . . −30 33 26.3
March 18 . . 25.1

Lalande 16367, $8^h\ 15^m\ 9^s$.

March 24 . . +27 30 22.8

Weisse VIII, 389, $8^h\ 16^m\ 12^s$.

February 25 . . +12 2 2.3

w Puppis, $8^h\ 16^m\ 17^s$.

March 21 . . −32 38 32.2

Lacaille 3279, $8^h\ 16^m\ 45^s$.

March 18 . . −28 12 35.5

(*), $8^h\ 17^m\ 14^s$.

March 25 . . −29 16 39.0

B. A. C. 2811, $8^h\ 17^m\ 20^s$.

March 1 . . −25 56 0.4

O. Arg. S. 8484, $8^h\ 18^m\ 15^s$.

February 10 . . −30 23 0.5
March 19 . . 2.8

Lacaille 3293, $8^h\ 18^m\ 18^s$.

March 8 . . −27 24 13.1

Weisse (2) VIII, 382, $8^h\ 18^m\ 21^s$.

March 29 . . +40 18 52.0

d^2 Cancri, $8^h\ 18^m\ 29^s$.

February 26 . . +17 28 21.9
March 24 . . 22.2

Lacaille 3299, $8^h\ 18^m\ 32^s$.

March 21 . . −29 58 29.8

(*), $8^h\ 22^m\ 33^s$.

February 16 . . −34 35 59.2

(*), $8^h\ 23^m\ 9^s$.

March 18 . . −28 16 36.3

(*), $8^h\ 23^m\ 23^s$.

March 5 . . −29 53 1.8

Weisse VIII, 601, $8^h\ 24^m\ 18^s$.

° ′ ″
February 25 . . +13 11 12.5

O. Arg. S. 8620, $8^h\ 24^m\ 33^s$.

March 25 . . −29 53 32.0

Weisse VIII, 618, $8^h\ 24^m\ 59^s$.

February 25 . . +13 14 19.1

(*), $8^h\ 25^m\ 49^s$.

March 29 . . −31 18 27.0

(*), $8^h\ 26^m\ 57^s$.

March 8 . . −19 50 31.0

(*), $8^h\ 27^m\ 16^s$.

February 10 . . −31 47 37.6
March 24 . . 41.7

Lacaille 2883, $8^h\ 27^m\ 47^s$.

March 19 . . −31 5 12.4

Weisse VIII, 721, $8^h\ 28^m\ 51^s$.

March 1 . . +10 21 20.4

(*), $8^h\ 28^m\ 55^s$.

February 16 . . +27 35 25.9

Lacaille 3388, $8^h\ 29^m\ 25^s$.

February 26 . . −24 39 21.9

B. A. C. 2898, $8^h\ 29^m\ 58^s$.

April 8 . . −26 23 50.4

ι^2 Cancri, $8^h\ 31^m\ 4^s$.

March 18 . . +10 1 35.7
April 12 . . 35.9

B. A. C. 2910, $8^h\ 31^m\ 31^s$.

March 25 . . −25 57 51.0

Groombridge 1452, $8^h\ 32^m\ 4^s$.

March 21 . . +80 28 42.9

Lacaille 3434, $8^h\ 32^m\ 21^s$.

March 29 . . −33 17 28.9

Lalande 17053, $8^h\ 32^m\ 50^s$.

March 5 . . + 6 13 52.8

(*), $8^h\ 32^m\ 51^s$.

March 5 . . + 6 14 15.8

Weisse VIII, 885, $8^h\ 33^m\ 29^s$.

° ′ ″
March 19 . . +14 14 18.3

Weisse VIII, 889, $8^h\ 34^m\ 26^s$.

March 19 . . −14 11 36.9

(*), $8^h\ 35^m\ 2^s$.

March 8 . . −31 42 21.2

O. Arg. S. 8856, $8^h\ 35^m\ 6^s$.

March 1 . . −26 55 1.0

Weisse (2) VIII, 894, $8^h\ 36^m\ 7^s$.

February 10 . . +27 41 24.5

O. Arg. S. 8887, $8^h\ 36^m\ 52^s$.

March 24 . . −23 44 50.7

Lacaille 3485, $8^h\ 37^m\ 54^s$.

March 18 . . −35 28 38.6

O. Arg. S. 8946, $8^h\ 39^m\ 53^s$.

March 21 . . −27 5 55.1

Lacaille 3511, $8^h\ 40^m\ 37^s$.

February 26 . . −26 8 23.5

(*), $8^h\ 41^m\ 24^s$.

February 16 . . −32 46 21.8

O. Arg. S. 8993, $8^h\ 41^m\ 48^s$.

February 10 . . −27 17 23.8

(*), $8^h\ 44^m\ 11^s$.

February 25 . . −27 46 27.8

(*), $8^h\ 44^m\ 29^s$.

March 5 . . −32 23 12.5

Lacaille 3552, $8^h\ 44^m\ 53^s$.

March 29 . . −29 56 2.4

(*), $8^h\ 44^m\ 55^s$.

March 8 . . −41 16 14.3

(*), $8^h\ 44^m\ 59^s$.

March 24 . . −42 20 31.4

(*), $8^h\ 45^m\ 3^s$.

March 8 . . −41 15 38.8

(*), 8h 45m 18s.

° ′ ″

March 18 . . −35 26 47.9

(*), 8h 45m 37s.

March 8 . . −41 14 2.5

B. A. C. 3015, 8h 45m 54s.

April 8 . . +17 51 28.5

Lacaille 3564, 8h 45m 54s.

March 19 . . −33 56 5.8

(*), 8h 45m 58s.

March 29 . . −29 52 14.4

(*), 8h 47m 30s.

February 16 . . −32 8 48.9

(*), 8h 47m 31s.

February 16 . . −32 4 43.0

60 Cancri, 8h 48m 50s.

February 26 . . +12 7 16.1

(*), 8h 49m 12s.

February 25 . . −34 55 8.8

B. A. C. 3041, 8h 49m 26s.

March 1 . . +17 58 41.6

(*), 8h 49m 38s.

March 21 . . −35 0 40.5

(*), 8h 50m 15s.

April 12 . . −30 1 41.0

(*), 8h 50m 16s.

February 10 . . −37 50 0.3

ρ Ursæ Majoris, 8h 50m 51s.

March 25 . . +68 8 1.4
December 12 . . 0.9

Weisse (2) VIII, 1255, 8h 51m 32s.

March 5 . . +23 14 27.0

Weisse (2) VIII, 1258, 8h 51m 38s.

March 5 . . +23 18 0.2

Weisse (2) VIII, 1324, 8h 55m 12s.

March 8 . . +38 21 27.0
24 . . 31.4

(*), 8h 55m 32s.

° ′ ″

February 26 . . −27 0 27.9

Weisse (2) VIII, 1352, 8h 55m 54s.

March 19 . . +23 7 20.8
29 . . 23.2

(*), 8h 56m 0s.

February 25 . . −30 12 25.6

(*), 8h 56m 0s.

February 16 . . −30 11 54.0
25 . . 57.4
April 12 . . 53.9

O. Arg. S. 9258, 8h 56m 2s.

February 10 . . −24 55 29.8

Lacaille 3643, 8h 56m 13s.

March 8 . . −26 3 50.7

B. A. C. 3104, 8h 59m 11s.

March 21 . . +15 47 34.0

(*), 9h 1m 54s.

March 5 . . −31 23 34.0
18 . . 33.0

(*), 9h 2m 13s.

February 25 . . −27 40 31.0

(*), 9h 2m 25s.

February 10 . . −31 30 52.0

Lacaille 3690, 9h 2m 58s.

March 8 . . −25 18 52.9

e Mali, 9h 4m 25s.

March 24 . . −29 50 9.8

36 Lyncis, 9h 5m 20s.

March 19 . . +43 46 6.8

Weisse (2) IX, 79, 9h 5m 31s.

March 21 . . +20 33 17.0

(*), 9h 5m 33s.

March 21 . . +20 34 46.0

Weisse IX, 153, 9h 8m 51s.

March 5 . . + 5 39 58.0

(*), 9h 9m 32s.

March 18 . . −35 23 17.9

B. A. C. 3156, 9h 9m 32s.

° ′ ″

February 25 . . −42 41 27.6

Lacaille 3741, 9h 9m 32s.

March 18 . . −35 25 26.4

O. Arg. S. 9522, 9h 10m 19s.

April 12 . . −26 39 21.1

Weisse IX, 198, 9h 10m 54s.

March 24 . . +18 16 28.4

O. Arg. S. 9539, 9h 11m 12s.

March 29 . . −29 24 32.8

(*), 9h 13m 21s.

March 8 . . −33 32 56.5

Lacaille 3780, 9h 13m 26s.

March 21 . . −38 29 55.1
April 19 . . 53.8

26 Hydræ, 9h 13m 31s.

March 25 . . −11 25 39.2

O. Arg. S. 9600, 9h 14m 21s.

March 29 . . −27 2 42.0

27 Hydræ, 9h 14m 9s.

February 26 . . − 9 0 20.4
March 19 . . 18.3

B. A. C. 3190, 9h 14m 24s.

March 8 . . −33 33 15.9

B. A. C. 3202, 9h 16m 37s.

April 12 . . + 8 16 9.6
22 . . 11.6

(*), 9h 17m 7s.

February 25 . . −38 49 36.4
March 24 . . 34.2

(*), 9h 17m 23s.

February 25 . . −38 45 44.4

(*), 9h 17m 26s.

December 12 . . −28 26 12.4

(*), 9h 17m 31s.

March 18 . . −34 57 52.4

(*), 9h 19m 13s.

February 25 . . −38 52 1.0

(*), 9h 21m 23s.

° ′ ″

April 19 . . −33 13 35.9
December 12 . . 34.6

B. A. C. 3235, 9h 22m 16s.

March 5 . . −34 26 32.0

Lacaille 3848, 9h 22m 54s.

March 9 . . −34 20 17.9

ε Antliæ, 9h 23m 54s.

March 29 . . −35 23 1.3
April 8 . . 2.4

B. A. C. 3243, 9h 23m 55s.

March 8 . . −26 1 29.6

Lacaille 3857, 9h 23m 59s.

March 21 . . −24 57 35.0

B. A. C. 3248, 9h 24m 8s.

March 8 . . −26 1 17.5

(*), 9h 24m 15s.

April 12 . . −32 44 33.2

O. Arg. N. 9989, 9h 25m 19s.

March 24 . . +70 12 52.7
25 . . 52.9

(*), 9h 25m 49s.

March 18 . . −35 21 17.9
29 . . 18.4
April 8 . . 16.9

(*), 9h 26m 24s.

April 22 . . −28 28 28.6

Lacaille 3918, 9h 29m 22s.

February 25 . . −35 14 41.1
March 5 . . 41.4

(*), 9h 29m 22s.

February 25 . . −35 14 12.6

Lacaille 3920, 9h 30m 19s.

April 23 . . −26 56 31.9

O. Arg. S. 9903, 9h 30m 22s.

March 21 . . −20 18 21.6

(*), 9h 30m 49s.

March 29 . . −35 27 12.5
April 8 . . 15.2

O. Arg. S. 9914, 9^h 31^m 1^s.

° ′ ″
April 12 . . −24 55 15.4

O. Arg. S. 9938, 9^h 32^m 0^s.

April 12 . . −23 51 6.4

Lacaille 3946, 9^h 32^m 5^s.

March 18 . . −35 30 44.8
April 19 . . 44.7

(*), 9^h 32^m 31^s.

March 9 . . −20 20 33.2
21 . . 33.6

(*), 9^h 32^m 41^s.

April 23 . . −36 20 44.4

(*), 9^h 34^m 23^s.

March 18 . . −35 30 15.0

(*), 9^h 35^m 12^s.

March 8 . . −35 20 9.7
29 . . 9.6
April 22 . . 11.5

(*), 9^h 35^m 46^s.

March 18 . . −35 26 28.6
24 . . 27.8
April 8 . . 28.8

(*), 9^h 36^m 17^s.

April 25 . . −37 54 29.2

(*), 9^h 37^m 39^s.

March 5 . . −29 12 41.8

Weisse (2) IX, 819, 9^h 39^m 25^s.

March 9 . . +16 9 30.4
April 19 . . 29.8

Weisse (2) IX, 817, 9^h 39^m 26^s.

March 29 . . +27 45 29.0

Weisse (2) IX, 832, 9^h 40^m 3^s.

March 9 . . +16 7 38.4

(*), 9^h 40^m 4^s.

February 25 . . −37 8 13.5

(*), 9^h 40^m 13^s.

February 25 . . −37 12 50.8

Weisse (2) IX, 837, 9^h 40^m 28^s.

April 26 . . +27 42 50.3

(*), 9^h 41^m 14^s.

° ′ ″
April 12 . . −40 31 41.2

Lacaille 4016, 9^h 41^m 29^s.

March 21 . . −38 43 20.4

Weisse (2) IX, 867, 9^h 41^m 55^s.

April 23 . . +18 39 38.8

Lacaille 4021, 9^h 41^m 59^s.

March 25 . . −32 38 25.9

(*), 9^h 42^m 11^s.

April 8 . . −37 35 19.0

(*), 9^h 42^m 50^s.

March 18 . . +25 9 53.3

(*), 9^h 43^m 12^s.

March 24 . . −34 24 59.3

Lacaille 4031, 9^h 43^m 13^s.

March 8 . . −34 25 0.3
24 . . 2.1

4 Sextantis, 9^h 43^m 48^s.

December 12 . . + 4 57 6.6

Lacaille 4045, 9^h 44^m 43^s.

March 5 . . −39 33 48.1

Weisse (2) IX, 961, 9^h 46^m 18^s.

April 25 . . +18 16 4.0

Weisss (2) IX, 980, 9^h 46^m 46^s.

March 29 . . +15 20 53.1

(*), 9^h 47^m 26^s.

April 12 . . −39 23 25.0

(*), 9^h 47^m 55^s.

February 25 . . −37 47 54.0
March 18 . . 53.2
April 23 . . 51.5

(*), 9^h 48^m 29^s.

March 14 . . −27 53 5.2

Weisse (2) IX, 1029, 9^h 49^m 29^s.

March 21 . . +28 42 49.3

(*), 9^h 49^m 43^s.

March 9 . . −32 44 54.6

(*), 9^h 49^m 44^s.

° ′ ″
April 19 . . −40 8 59.3
December 12 . . 51.7

(*), 9^h 50^m 37^s.

March 5 . . −40 12 28.4

(*), 9^h 50^m 44^s.

April 19 . . −40 12 29.9

Lacaille 4095, 9^h 53^m 18^s.

March 8 . . −35 16 9.2

(*), 9^h 53^m 29^s.

March 24 . . −30 4 6.5

(*), 9^h 54^m 38^s.

April 25 . . −34 41 28.8

Lacaille 4107, 9^h 55^m 48^s.

March 29 . . −38 49 34.6
April 12 . . 31.9
22 . . 36.8

(*), 9^h 56^m 27^s.

March 21 . . +13 28 0.6

(*), 9^h 56^m 41^s.

March 21 . . +13 30 23.0

(*), 9^h 56^m 50^s.

April 12 . . −38 45 27.6
22 . . 26.6

(*), 9^h 57^m 13^s.

March 9 . . −29 38 39.5

Lacaille 4120, 9^h 57^m 39^s.

February 25 . . −32 56 38.3

O. Arg. S. 10324, 9^h 57^m 42^s.

March 14 . . −24 41 18.8
18 . . 18.8

Lacaille 4135, 9^h 58^m 52^s.

March 22 . . −39 20 49.7

(*), 9^h 58^m 53^s.

December 12 . . +21 12 18.4

Weisse (2) IX, 1255, 9^h 59^m 44^s.

April 23 . . +30 8 44.8

Weisse (2) IX, 1257, 9^h 59^m 44^s.

° ′ ″
April 23 . . +30 5 36.5

B. A. C. 3448, 9^h 59^m 46^s.

March 24 . . −34 15 4.0
April 26 . . 7.8

14 Sextantis, 10^h 0^m 0^s.

March 8 . . + 6 14 40.5

A Leonis, 10^h 1^m 1^s.

March 25 . . +10 38 1.7

(*), 10^h 2^m 9^s.

April 25 . . +20 58 7.7
30 . . 8.8

(*), 10^h 2^m 28^s.

March 5 . . +12 53 0.0

Lacaille 4162, 10^h 2^m 43^s.

March 29 . . −34 22 41.5

(*), 10^h 3^m 6^s.

April 19 . . −32 14 9.1

(*), 10^h 3^m 15^s.

March 5 . . +12 54 47.2

Lacaille 4165, 10^h 3^m 46^s.

April 19 . . −32 12 39.2

(*), 10^h 4^m 14^s.

March 9 . . −36 7 48.5

Lacaille 4186, 10^h 6^m 20^s.

February 25 . . −40 14 5.7

Weisse X, 74, 10^h 6^m 24^s.

March 21 . . + 6 8 16.1

Lacaille 4190, 10^h 6^m 55^s.

April 23 . . −28 51 27.6

Lacaille 4192, 10^h 7^m 3^s.

March 18 . . −31 52 27.3
April 22 . . 25.6

Weisse X, 94, 10^h 7^m 10^s.

December 12 . . +12 19 57.5

Weisse X, 96, 10^h 7^m 18^s.

December 12 . . +12 22 23.5

(*), 10^h 7^m 23^s.

° ′ ″
March 24 . . −39 59 55.7
April 12 . . 53.2

21 SEXTANTIS, 10^h 7^m 41^s.

April 8 . . . − 7 20 57.0

O. ARG. S. 10471, 10^h 8^m 5^s.

March 25 . . −23 10 15.0
April 26 . . 15.3

LALANDE 19981, 10^h 10^m 51^s.

March 9 . . +11 55 59.4
29 . . 59.4

LACAILLE 4227, 10^h 12^m 9^s.

March 21 . . . −33 28 46.7

γ LEONIS, (2d *), 10^h 12^m 49^s.

April 25 . . +20 29 52.3

O. ARG. S. 10533, 10^h 13^m 11^s.

April 12 . . −28 18 34.5

(*), 10^h 13^m 34^s.

March 14 . . − 3 41 29.7

O. ARG. S. 10540, 10^h 14^m 1^s.

April 12 . . −28 18 39.7

Σ CAT. GEN. 1198, (1st *), 10^h 14^m 9^s.

April 19 . . +44 33 22.7

LACAILLE 4250, 10^h 14^m 24^s.

March 5 . . −32 28 35.2

LACAILLE 4253, 10^h 14^m 30^s.

March 18 . . −39 3 0.4

LALANDE 20114, 10^h 15^m 22^s.

March 25 . . −23 3 26.4

(*), 10^h 15^m 45^s.

March 24 . . −35 34 7.2

43 LEONIS, 10^h 16^m 13^s.

April 22 . . + 7 12 6.1
23 . . 5.2

LACAILLE 4266, 10^h 16^m 24^s.

April 8 . . −28 54 9.5

24 SEXTANTIS, 10^h 16^m 50^s.

° ′ ″
March 25 . . − 0 14 41.8
April 26 . . 41.4

LACAILLE 4267, 10^h 16^m 53^s.

March 8 . . −23 40 35.9

B. A. C. 3553, 10^h 17^m 0^s.

April 9 . . − 2 59 12.5

B. A. C. 3554, 10^h 17^m 16^s.

March 9 . . −29 30 21.9

γ ANTLIÆ, 10^h 17^m 58^s.

May 4 . . −28 59 31.1

44 LEONIS, 10^h 18^m 25^s.

April 30 . . + 9 26 41.1

B. A. C. 3562, 10^h 18^m 44^s.

April 30 . . + 9 26 8.5

B. A. C. 3563, 10^h 19^m 15^s.

May 7 . . − 6 24 18.7

LACAILLE 4286, 10^h 19^m 25^s.

March 14 . . −28 32 5.0

WEISSE X, 315, 10^h 19^m 26^s.

March 29 . . + 4 35 33.7

B. A. C. 3566, 10^h 19^m 47^s.

April 19 . . − 5 46 0.5

LACAILLE 4295, 10^h 20^m 45^s.

March 5 . . −38 42 4.7

RUMKER 3203, 10^h 21^m 29^s.

March 24 . . +16 25 8.2

(*), 10^h 22^m 26^s.

April 8 . . −35 33 22.6

(*), 10^h 22^m 42^s.

April 25 . . −35 31 16.1

O. ARG. N. 10861, 10^h 23^m 29^s.

March 21 . . +64 55 24.2
April 23 . . 24.2

30 SEXTANTIS, 10^h 23^m 39^s.

April 26 . . + 0 1 43.9

LACAILLE 4317, 10^h 24^m 46^s.

° ′ ″
March 14 . . −25 49 3.7
April 22 . . 6.3

O. ARG. S. 10684, 10^h 24^m 46^s.

April 12 . . −24 33 25.9

LACAILLE 4326, 10^h 25^m 45^s.

April 19 . . −34 27 26.9

WEISSE X, 439, 10^h 25^m 59^s.

March 9 . . +10 57 36.7

RUMKER 3238, 10^h 26^m 37^s.

March 5 . . +15 53 0.1

(*), 10^h 26^m 49^s.

May 9 . . + 4 55 49.6

WEISSE X, 456, 10^h 27^m 4^s.

March 29 . . − 3 36 22.7

(*), 10^h 27^m 38^s.

April 8 . . −35 23 50.0

LALANDE 20482, 10^h 28^m 11^s.

May 4 . . −10 26 59.1

(*), 10^h 28^m 43^s.

March 24 . . −37 27 29.2

(*), 10^h 29^m 39^s.

December 12 . . −35 42 51.5

(*), 10^h 29^m 47^s.

December 12 . . −35 39 2.6

WEISSE X, 520, 10^h 30^m 4^s.

April 22 . . −11 31 58.7

(*), 10^h 30^m 22^s.

March 21 . . −35 41 41.5
December 12 . . 39.7

(*), 10^h 30^m 27^s.

April 30 . . − 3 31 7.5

LACAILLE 4364, 10^h 30^m 37^s.

March 25 . . −26 59 0.9
April 23 . . 1.1

LACAILLE 4365, 10^h 30^m 40^s.

° ′ ″
April 9 . . −32 35 55.1
26 . . 56.5

50 LEONIS, 10^h 31^m 57^s.

May 7 . . +16 48 11.4

B. A. C. 3649, 10^h 32^m 54^s.

March 9 . . + 9 31 8.2
April 25 . . 8.7

LACAILLE 4393, 10^h 34^m 38^s.

March 14 . . −26 6 26.5

WEISSE X, 600, 10^h 34^m 45^s.

March 29 . . +14 39 24.8

LACAILLE 4399, 10^h 34^m 56^s.

April 8 . . −35 3 50.9

(*), 10^h 34^m 56^s.

April 19 . . −35 54 43.3

WEISSE X, 608, 10^h 35^m 0^s.

March 29 . . +14 37 5.2

LACAILLE 4407, 10^h 35^m 35^s.

April 8 . . −35 3 8.2

(*), 10^h 36^m 3^s.

April 12 . . −35 44 10.4

B. A. C. 3677, 10^h 36^m 42^s.

March 25 . . −32 2 10.3

(*), 10^h 37^m 4^s.

April 12 . . −35 49 24.0

LACAILLE 4419, 10^h 37^m 16^s.

April 23 . . −31 4 41.5
30 . . 40.4

42 LEONIS MINORIS, 10^h 38^m 42^s.

April 9 . . +31 21 58.4

LACAILLE 4437, 10^h 38^m 43^s.

March 14 . . −36 14 50.9
21 . . 53.8

LACAILLE 4438, 10^h 38^m 45^s.

April 26 . . −37 27 45.1

WEISSE (2) X, 774, 10^h 38^m 46^s.

April 22 . . +36 22 35.8

(*), 10^h 39^m 53^s.

	° ′ ″
March 14 . .	−36 15 36.6

Lacaille 4450, 10^h 40^m 0^s.

March 9 . .	−40 17 25.2

Weisse X, 702, 10^h 40^m 30^s.

May 7 . .	+14 3 47.0

O. Arg. S. 10887, 10^h 41^m 43^s.

May 4 . .	−30 55 6.6

43 Leonis Minoris, 10^h 41^m 47^s.

May 11 . .	+30 6 12.0

(*), 10^h 43^m 13^s.

April 19 . .	−37 37 29.2

Lacaille 4481, 10^h 43^m 38^s.

April 8 . .	−41 40 56.0
30 . .	52.9

Weisse X, 801, 10^h 45^m 2^s.

March 14 . .	− 0 50 52.9

Weisse X, 803, 10^h 45^m 10^s.

March 25 . .	+12 2 50.0

O. Arg. S. 10941, 10^h 46^m 20^s.

May 7 . .	−29 29 35.9

O. Arg. S. 10944, 10^h 46^m 31^s.

April 12 . .	−25 53 24.6

Lacaille 4503, 10^h 47^m 9^s.

March 9 . .	−39 43 36.1
29 . .	35.2

(*), 10^h 47^m 32^s.

March 14 . .	− 0 49 36.2

Lacaille 4506, 10^h 47^m 45^s.

December 12 . .	−31 38 7.4

55 Leonis, 10^h 48^m 4^s.

April 9 . .	+ 1 25 43.7
May 4 . .	45.4

O. Arg. S. 10974, 10^h 48^m 40^s.

April 22 . .	−29 38 40.9

B. A. C. 3755, 10^h 50^m 40^s.

	° ′ ″
April 8 . .	−36 26 23.7
26 . .	23.9

Lacaille 4526, 10^h 50^m 45^s.

April 23 . .	−30 30 33.8

(*), 10^h 51^m 17^s.

April 5 . .	−41 20 51.4

O. Arg. S. 11015, 10^h 51^m 47^s.

April 19 . .	−27 37 14.2

O. Arg. S. 11020, 10^h 52^m 18^s.

April 30 . .	−23 30 18.5

Lacaille 4535, 10^h 52^m 36^s.

April 5 . .	−41 20 41.4

(*), 10^h 53^m 0^s.

March 29 . .	−34 10 48.8

Lacaille 4543, 10^h 53^m 40^s.

May 11 . .	−34 26 49.6

Carrington 1637, 10^h 53^m 50^s.

May 9 . .	+81 44 23.4

Lacaille 4553, 10^h 54^m 25^s.

December 12 . .	−42 33 14.4

Lacaille 4558, 10^h 54^m 54^s.

March 9 . .	−39 48 3.6

Weisse (2) X, 1112, 10^h 56^m 17^s.

April 12 . .	+36 50 24.3

p^2 Leonis, 10^h 56^m 58^s.

March 25 . .	+ 0 41 57.1

Lacaille 4570, 10^h 57^m 1^s.

March 14 . .	−26 49 6.0
29 . .	7.3

(*), 10^h 57^m 23^s.

March 25 . .	+ 0 40 10.0

Lacaille 4576, 10^h 58^m 6^s.

April 8 . .	−39 36 31.8

O. Arg. S. 11114, 10^h 59^m 0^s.

March 9 . .	−29 44 6.0
April 26 . .	6.7

Weisse X, 1044, 10^h 59^m 0^s.

	° ′ ″
April 23 . .	+13 16 10.6
25 . .	11.0

Lalande 21258, 10^h 59^m 3^s.

April 18 . .	+44 11 37.8
19 . .	37.8

(*), 10^h 59^m 3^s.

April 22 . .	−29 49 58.9

(*), 10^h 59^m 28^s.

April 30 . .	+11 0 35.1

(*), 11^h 0^m 58^s.

May 9 . .	−32 51 7.8

Lacaille 4599, 11^h 0^m 58^s.

May 4 . .	−31 52 59.8

Lacaille 4607, 11^h 1^m 44^s.

May 7 . .	−37 42 17.2

Lacaille 4616, 11^h 2^m 32^s.

May 11 . .	−38 46 9.0

O. Arg. S. 11188, 11^h 3^m 8^s.

March 14 . .	−25 17 3.0

O. Arg. S. 11208, 11^h 4^m 11^c.

March 14 . . .	−25 17 18.6

Weisse (2) X, 58, 11^h 5^m 6^s.

May 4 . .	+33 19 16.5

O. Arg. S. 11216, 11^h 5^m 7^s.

March 14 . .	−25 13 5.8

Lacaille 4642, 11^h 6^m 0^s.

April 8 . .	−31 43 42.8

(*), 11^h 6^m 22^s.

April 12 . .	+68 14 34.6
19 . .	34.0

Weisse XI, 98, 11^h 6^m 37^s.

April 5 . .	+21 17 45.6
30 . .	42.4

(*), 11^h 7^m 16^s.

April 12 . .	+68 13 0.6
19 . .	1.5

(*), 11^h 8^m 8^s.

	° ′ ″
April 12 . .	+68 14 52.9
19 . .	55.0

(*), 11^h 8^m 26^s.

March 29 . .	−26 36 4.0

O. Arg. N. 11584, 11^h 8^m 32^s.

April 26 . .	+58 55 25.0

Lacaille 4665, 11^h 8^m 47^s.

April 22 . .	−32 36 42.6

Lacaille 4668, 11^h 9^m 5^s.

April 25 . .	−37 43 56.5

Lacaille 4669, 11^h 9^m 22^s.

May 11 . .	−37 32 58.8

O. Arg. S. 11267, 11^h 9^m 34^s.

March 9 . .	−30 8 22.7
April 23 . .	23.0

Lacaille 4672, 11^h 9^m 40^s.

May 14 . .	−38 37 21.2

Weisse XI, 137, 11^h 9^m 55^s.

May 9 . .	− 2 55 57.3

ξ Ursæ Majoris, 11^h 11^m 16^s.

April 9 . .	+32 15 38.4
May 7 . .	36.5

Weisse XI, 211, 11^h 13^m 40^s.

April 8 . .	−14 3 24.7
May 4 . .	24.0

O. Arg. S. 11320, 11^h 14^m 4^s.

March 9 . .	−25 26 34.2
14 . .	33.1

Lacaille 4709, 11^h 14^m 12^s.

April 30 . .	−31 23 26.7

Lacaille 4710, 11^h 14^m 25^s.

May 16 . .	−35 0 24.0

(*), 11^h 16^m 38^s.

April 5 . .	−38 23 32.4

B. A. C. 3875, 11^h 16^m 57^s.

April 12 . .	−35 27 8.8

WEISSE (2) XI, 312, 11^h 17^m 48^s.

° ′ ″

April 25 . . +31 43 20.9

LACAILLE 4735, 11^h 18^m 12^s.

April 19 . . −33 34 20.3
22 . . 22.1

WEISSE (2) XI, 340, 11^h 19^m 24^s.

May 14 . . . +21 6 48.9

O. ARG. S. 11374, 11^h 19^m 25^s.

March 29 . . −25 18 53.2
April 8 . . 53.4

LACAILLE 4746, 11^h 20^m 24^s.

May 11 . . −37 26 36.1

83 LEONIS, (1st *), 11^h 20^m 28$_s$.

April 26 . . + 3 43 18.4

83 LEONIS, (2d *), 11^h 20^m 28^s.

April 26 . . + 3 42 51.2

B. A. C. 3903, 11^h 21^m 25^s.

May 4 . . − 0 10 54.7

(*), 11^h 21^m 36^s.

March 14 . . −34 50 2.1

LACAILLE 4753, 11^h 21^m 39$_s$.

April 23 . . −34 36 50.9

WEISSE XI, 365, 11^h 21^m 48^s.

April 9 . . + 3 30 4.8
30 . . 4.2

O. ARG. S. 11410, 11^h 21^m 58^s.

March 29 . . −23 6 36.5
April 9 . . 38.2

B. A. C. 3906, 11^h 22^m 41^s.

May 19 . . +81 50 33.7

LACAILLE 4760, 11^h 23^m 54^s.

April 5 . . −37 44 26.5

WEISSE XI, 403, 11^h 24^m 14^s.

April 22 . . − 6 0 8.1

O. ARG. S. 11444, 11^h 24^m 34^s.

April 19 . . −25 10 59.1

O. ARG. S. 11446, 11^h 24^m 37^s.

May 16 . . −28 4 46.0

WEISSE XI, 421, 11^h 25^m 32^s.

° ′ ″

April 8 . . − 6 53 57.2

B. A. C. 3927, 11^h 26^m 29^a.

May 14 . . −39 43 16.9

B. A. C. 3926, 11^h 26^m 30^s.

April 25 . . −30 22 8.8

B. A. C. 3928, 11^h 26^m 38^s.

May 7 . . −31 8 19.0

B. A. C. 3929, 11^h 27^m 18$_s$.

April 23 . . −39 52 12.6

(*), 11^h 27^m 58^s.

April 30 . . −40 26 11.7
May 11 . . 9.8

WEISSE (2) XI, 511, 11^h 28^m 20^s.

April 12 . . +16 43 44.9

LACAILLE 4789, 11^h 28^m 36^s.

April 26 . . −29 18 48.1

LACAILLE 4792, 11^h 29^m 21^s.

April 5 . . −34 53 35.3

WEISSE (2) XI, 534, 11^h 29^m 29^s.

May 16 . . +27 41 37.7

LACAILLE 4802, 11^h 30^m 11^s.

May 4 . . −35 24 11.3

O. ARG. S. 11531, 11^h 30^m 48^s.

April 19 . . −24 52 11.9

(*), 11^h 30^m 53^s.

March 29 . . −34 21 7.2

LACAILLE 4814, 11^h 31^m 8^s.

April 22 . . −38 38 21.0
May 9 . . 22.1

B. A. C. 3955, 11^h 31^m 49^s.

April 9 . . − 1 43 0.2

(*), 11^h 31^m 51^s.

April 8 . . −24 53 59.3
19 . . 54.3

(*), 11^h 32^m 48^s.

April 23 . . −26 7 28.3
May 19 . . 30.3

LACAILLE 4830, 11^h 32^m 55^s.

° ′ ″

May 9 . . −38 39 50.9

LACAILLE 4833, 11^h 33^m 18^s.

May 14 . . −34 15 44.2

LACAILLE 4837, (1st *), 11^h 33^m 35^s.

April 25 . . −37 23 12.4

LACAILLE 4837, (2d *), 11^h 33^m 36^s.

April 25 . . −37 23 12.7

92 LEONIS, 11^h 34^m 3^s.

May 21 . . +22 4 27.1

WEISSE XI, 597, 11^h 35^m 3^s.

April 30 . . + 1 42 56.8

WEISSE XI, 605, 11^h 35^m 26^s.

April 30 . . + 1 43 54.5

WEISSE XI, 643, 11^h 37^m 52^s.

March 14 . . − 7 21 52.8
29 . . 54.4

WEISSE XI, 652, 11^h 38^m 16^s.

April 12 . . + 7 46 45.8

WEISSE XI, 662, 11^h 38^m 20^s.

April 12 . . + 7 45 8.1

LACAILLE 4877, 11^h 38^m 58^s.

April 8 . . −39 47 43.5

(*), 11^h 39^m 1$_s$.

April 19 . . −36 54 0.9

WEISSE XI, 674, 11^h 39^m 32^s.

April 22 . . − 7 2 50.3
26 . . 50.5

WEISSE XI, 680, 11^h 39^m 41^s.

May 16 . . − 2 16 49.7

LACAILLE 4881, 11^h 39^m 48^s.

May 11 . . −27 14 28.5

(*), 11^h 40^m 12^s.

May 19 . . +24 41 53.4

B. A. C. 3988, 11^h 40^m 27^s.

April 8 . . −39 47 34.8

LACAILLE 4886, 11^h 40^m 36^s.

° ′ ″

May 14 . . −35 11 3.4

O. ARG. S. 11656, 11^h 40^m 49^s.

April 5 . . −25 14 22.6
25 . . 21.3

(*), 11^h 41^m 4^s.

April 5 . . −25 15 48.5
25 . . 48.4

(*), 11^h 41^m 42^s.

April 5 . . −25 15 11.6
25 . . 12.0

(*), 11^h 42^m 6^s.

May 9 . . −35 15 51.3

B. A. C. 3994, 11^h 42^m 12^s.

April 23 . . −26 1 37.9

B. A. C. 4006, 11^h 44^m 24^s.

May 21 . . − 4 36 37.7

WEISSE XI, 758, 11^h 44^m 33^s.

March 14 . . − 7 16 2.3

(*), 11^h 44^m 38^s.

April 22 . . −36 12 47.5

B. A. C. 4009, 11^h 46^m 9^s.

March 29 . . −30 6 5.0

(*), 11^h 46^m 12^s.

April 30 . . −37 36 59.4
May 11 . . 59.9

B. A. C. 4015, 11^h 46^m 22^s.

April 26 . . −33 11 8.4

(*), 11^h 48^m 58^s.

May 9 . . +11 4 41.6

B. A. C. 4032, 11^h 49^m 6^s.

April 9 . . −27 45 10.2

B. A. C. 4034, 11^h 49^m 50^s.

April 5 . . −38 57 53.2
19 . . 56.2

LACAILLE 4939, 11^h 49^m 52^s.

May 19 . . −24 8 9.7

O. ARG. N. 12195, 11^h 50^m 30^s.

April 25 . . +62 57 19.1

Lalande 22565, $11^{h}\ 53^{m}\ 8^{s}$.

		°	′	″
April	22	+34	41	8.0

Lalande 22567, $11^{h}\ 53^{m}\ 18^{s}$.

April	22	+34	45	26.5
May	16			26.5
	21			25.0

Weisse XI, 908, $11^{h}\ 53^{m}\ 46^{s}$.

April	8	+ 8	40	5.8

Weisse XI, 921, $11^{h}\ 54^{m}\ 23^{s}$.

March	14	+ 8	38	23.4
April	8			21.2

O. Arg. S. 11831, $11^{h}\ 54^{m}\ 26^{s}$.

April	26	−25	45	22.5

Weisse XI, 926, $11^{h}\ 54^{m}\ 37^{s}$.

April	12	+13	6	4.8
	23			5.6

O. Arg. S. 11848, $11^{h}\ 55^{m}\ 45^{s}$.

April	19	−25	42	48.9

O. Arg. S. 11850, $11^{h}\ 56^{m}\ 0^{s}$.

March	29	−25	38	31.0

(*), $11^{h}\ 56^{m}\ 1^{s}$.

April	30	− 9	59	20.2
May	14			20.9
	19			21.1

(*), $11^{h}\ 56^{m}\ 5^{s}$.

May	11	− 9	55	30.1

(*), $12^{h}\ 0^{m}\ 3^{s}$.

April	5	−30	18	11.0

O. Arg. N. 12337, $12^{h}\ 0^{m}\ 4^{s}$.

April	25	+75	23	42.0

(*), $12^{h}\ 0^{m}\ 13^{s}$.

April	5	−30	17	7.7

O. Arg. S. 11908, $12^{h}\ 0^{m}\ 24^{s}$.

April	9	−23	2	37.7

O. Arg. S. 11917, $12^{h}\ 0^{m}\ 54^{s}$.

April	22	−30	40	59.0
May	7			59.0

O. Arg. S. 11920, $12^{h}\ 0^{m}\ 58^{s}$.

April	23	−23	14	35.7

(*), $12^{h}\ 2^{m}\ 13^{s}$.

		°	′	″
May	19	−32	21	33.3

O. Arg. S. 11944, $12^{h}\ 2^{m}\ 40_{s}$.

May	14	−27	15	30.1
	16			37.4

Dorpat 1604, (1st *), $12^{h}\ 3^{m}\ 39_{s}$.

March	14	−11	7	37.0
April	12			40.3

Dorpat 1604, (2d *), $12^{h}\ 3^{m}\ 49^{s}$.

March	14	−11	7	40.9
April	12			42.0

B. A. C. 4098, $12^{h}\ 3^{m}\ 51^{s}$.

April	26	−37	8	44.1

(*), $12^{h}\ 4^{m}\ 4^{s}$.

April	30	−39	50	37.3

B. A. C. 4106, $12^{h}\ 5^{m}\ 16^{s}$.

May	21	+82	26	4.4

O. Arg. S. 11982, $12^{h}\ 5^{m}\ 17^{s}$.

April	8	−25	13	5.3

(*), $12^{h}\ 5^{m}\ 39^{s}$.

May	21	+82	26	21.8

Lacaille 5065, $12^{h}\ 6^{m}\ 39^{s}$.

May	11	−38	12	19.5

12 Virginis, $12^{h}\ 6^{m}\ 50^{s}$.

April	9	+10	59	9.5

γ Corvi, $12^{h}\ 9^{m}\ 9^{s}$.

April	19	−16	49	11.7
	23			10.6

Weisse XII, 177, $12^{h}\ 22^{m}\ 35^{s}$.

April	25	+ 0	7	31.7
	30			31.2

Weisse XII, 179, $12^{h}\ 12^{m}\ 35^{s}$.

March	14	+ 7	43	47.5

(*), $12^{h}\ 12^{m}\ 42^{s}$.

April	8	−25	22	54.0

Weisse XII, 184, $12^{h}\ 12^{m}\ 49^{s}$.

March	14	+ 7	42	52.6

(*), $12^{h}\ 13^{m}\ 14^{s}$.

		°	′	″
May	7	−27	48	7.3

Lacaille 5097, $12^{h}\ 13^{m}\ 17^{s}$.

April	5	−31	51	58.0

Lacaille 5102, $12^{h}\ 13^{m}\ 17^{s}$.

May	11	−37	4	37.7

Rumker 3911, $12^{h}\ 13^{m}\ 18^{s}$.

April	22	+ 6	23	33.4

(*), $12^{h}\ 13^{m}\ 37^{s}$.

April	12	+ 6	28	14.7

(*), $12^{h}\ 14^{m}\ 7^{s}$.

May	14	−25	39	52.8

Lacaille 5109, $12^{h}\ 14^{m}\ 22^{s}$.

May	19	−41	50	24.7

Weisse XII, 221, $12^{h}\ 14^{m}\ 48^{s}$.

May	16	+ 8	32	28.7

(*), $12^{h}\ 14^{m}\ 53^{s}$.

May	9	+ 8	36	22.4

O. Arg. S. 12116, $12^{h}\ 15^{m}\ 44^{s}$.

April	9	—23	30	51.2

B. A. C. 4175, $12^{h}\ 16^{m}\ 55^{s}$.

April	23	−38	11	22.7

Weisse XII, 261, $12^{h}\ 17^{m}\ 5^{s}$.

April	19	+12	38	29.9
May	18			31.1

4 Canum Venaticorum, $12^{h}\ 17^{m}\ 18^{s}$.

May	21	+43	15	46.4

Lacaille 5134, $12^{h}\ 17^{m}\ 30^{s}$.

April	23	−38	11	33.4

B. A. C. 4192, $12^{h}\ 20^{m}\ 2^{s}$.

April	8	−32	6	33.7

(*), $12^{h}\ 20^{m}\ 20^{s}$.

April	26	+27	32	44.0

16 Comæ, $12^{h}\ 20^{m}\ 30^{s}$.

April	26	+27	32	44.2
May	14			44.6

O. Arg. S. 12165, $12^{h}\ 20^{m}\ 40^{s}$.

		°	′	″
April	5	−26	58	52.8

O. Arg. S. 12173, $12^{h}\ 20^{m}\ 41^{s}$.

April	25	−29	21	53.9
May	16			53.8

(*), $12^{h}\ 21^{m}\ 1^{s}$.

April	30	− 6	51	37.5

B. A. C. 4202, $12^{h}\ 21^{m}\ 28^{s}$.

May	11	−38	19	15.1
	19			16.1

(*), $12^{h}\ 22^{m}\ 0^{s}$.

April	12	−37	14	50.2
	22			50.5

(*), $12^{h}\ 22^{m}\ 3^{s}$.

April	12	−37	17	58.9
	22			57.0

B. A. C. 4214, $12^{h}\ 23^{m}\ 31^{s}$.

April	9	−22	58	39.5

Lacaille 5188, $12^{h}\ 24^{m}\ 53^{s}$.

April	5	−30	54	57.8

Lacaille 5193, $12^{h}\ 25^{m}\ 44^{s}$.

April	19	−31	44	45.6

(*), $12^{h}\ 26^{m}\ 48^{s}$.

May	11	−32	33	6.4
	19			7.8

O. Arg. S. 12243, $12^{h}\ 26^{m}\ 59^{s}$.

May	16	−22	47	37.2

Weisse XII, 452, $12^{h}\ 27^{m}\ 57^{s}$.

May	7	+ 6	41	0.9

O. Arg. S. 12258, $12^{h}\ 28^{m}\ 12^{s}$.

April	25	−25	59	42.7

Lacaille 5214, $12^{h}\ 29^{m}\ 11^{s}$.

April	12	−39	9	6.2

O. Arg. S. 12269, $12^{h}\ 29^{m}\ 17^{s}$.

April	30	−25	16	25.6

O. Arg. S. 12286, $12^{h}\ 30^{m}\ 24^{s}$.

April	30	−25	18	8.5

Weisse (2) XII, 636, $12^{h}\ 30^{m}\ 45^{s}$.

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April 9 . . +33 44 33.0

Lacaille 5226, $12^{h}\ 31^{m}\ 25^{s}$.

April 22 . . −38 4 54.9

B. A. C. 4255, $12^{h}\ 32^{m}\ 2^{s}$.

May 14 . . − 3 39 29.8

Lacaille 5234, $12^{h}\ 33^{m}\ 15^{s}$.

May 11 . . −37 8 32.4

O. Arg. S. 12332, $12^{h}\ 33^{m}\ 42^{s}$.

April 25 . . −26 6 56.6

Lacaille 5238, $12^{h}\ 34^{m}\ 13^{s}$.

May 19 . . −43 23 13.6

(*), $12^{h}\ 36^{m}\ 15^{s}$.

May 16 . . −35 17 50.5

Lacaille 5261, $12^{h}\ 37^{m}\ 0^{s}$.

April 30 . . −34 24 21.7

(*), $12^{h}\ 37^{m}\ 11^{s}$.

April 5 . . −34 42 4.0

(*), $12^{h}\ 37^{m}\ 11^{s}$.

May 9 . . −36 31 20.4

(*), $12^{h}\ 38^{m}\ 36^{s}$.

April 22 . . −37 6 32.9
May 11 . . 31.7

d^{2} Virginis, $12^{h}\ 39^{m}\ 6^{s}$.

April 9 . . + 8 23 5.7

B. A. C. 4297, $12^{h}\ 41^{m}\ 31^{s}$.

May 14 . . −26 53 8.0

Weisse XII, 722, $12^{h}\ 43^{m}\ 26^{s}$.

May 19 . . −12 21 1.3

O. Arg. S. 12460, $12^{h}\ 43^{m}\ 44^{s}$.

April 5 . . −25 7 52.3

Weisse XII, 728, $12^{h}\ 43^{m}\ 40^{s}$.

May 11 . . −12 19 31.8
19 . . 33.0

(*), $12^{h}\ 44^{m}\ 41^{s}$.

April 22 . . −25 7 26.3

Lacaille 5302, $12^{h}\ 44^{m}\ 47^{s}$.

° ′ ″

May 9 . . −30 29 40.2

(*), $12^{h}\ 45^{m}\ 13^{s}$.

April 5 . . −25 7 23.1

Weisse XII, 757, $12^{h}\ 45^{m}\ 14^{s}$.

April 25 . . + 0 47 41.7
30 . . 40.4

Weisse XII, 786, $12^{h}\ 46^{m}\ 58^{s}$.

April 25 . . + 0 49 6.0

B. A. C. 4331, $12^{h}\ 47^{m}\ 46^{s}$.

May 16 . . −43 26 17.9

Weisse XII, 834, $12^{h}\ 49^{m}\ 37^{s}$.

May 14 . . −14 14 36.9

Lacaille 5340, $12^{h}\ 51^{m}\ 4^{s}$.

April 5 . . −31 35 43.1
May 11 . . 44.8

(*), $12^{h}\ 51^{m}\ 15^{s}$.

May 14 . . −14 16 53.2

Lacaille 5346, $12^{h}\ 51^{m}\ 40^{s}$.

April 22 . . −38 24 7.9

Lacaille 5347, $12^{h}\ 51^{m}\ 49^{s}$.

May 9 . . −43 0 16.8

O. Arg. S. 12573, $12^{h}\ 53^{m}\ 18^{s}$.

April 9 . . −23 12 40.9

Lacaille 5363, $12^{h}\ 54^{m}\ 35^{s}$.

April 30 . . −38 54 58.3

Lacaille 5374, $12^{h}\ 56^{m}\ 20^{s}$.

April 25 . . −28 57 51.0
May 16 . . 54.5

(*), $12^{h}\ 57^{m}\ 17^{s}$.

May 19 . . −16 55 12.2

(*), $12^{h}\ 57^{m}\ 19^{s}$.

May 11 . . −37 5 38.5

(*), $12^{h}\ 58^{m}\ 36^{s}$.

April 22 . . −34 24 51.4

Lacaille 5426, $13^{h}\ 4^{m}\ 18^{s}$.

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April 30 . . −34 26 14.3
May 4 . . 18.3

(*), $13^{h}\ 4^{m}\ 26^{s}$.

April 25 . . −36 42 18.7
May 11 . . 18.0

Lacaille 5440, $13^{h}\ 5^{m}\ 52^{s}$.

May 16 . . −28 24 33.4

(*), $13^{h}\ 6^{m}\ 40^{s}$.

May 19 . . −35 15 18.0

Lacaille 5457, $13^{h}\ 8^{m}\ 0^{s}$.

June 10 . . −35 40 54.7

58 Virginis, $13^{h}\ 10^{m}\ 42^{s}$.

April 9 . . − 9 51 36.2

Lacaille 5478, $13^{h}\ 11^{m}\ 16^{s}$.

May 14 . . −27 38 39.4

O. Arg. S. 12802, $13^{h}\ 13^{m}\ 23^{s}$.

April 30 . . −26 43 32.3

O. Arg. S. 12800, $13^{h}\ 13^{m}\ 23^{s}$.

May 19 . . −23 49 29.3

62 Virginis, $13^{h}\ 13^{m}\ 32^{s}$.

June 7 . . −10 37 15.0

Lacaille 5502, $13^{h}\ 14^{m}\ 33^{s}$.

May 16 . . −38 10 10.6

Lacaille 5499, $13^{h}\ 15^{m}\ 6^{s}$.

May 19 . . −23 47 18.6

Weisse XII, 312, $13^{h}\ 20^{m}\ 22^{s}$.

May 11 . . + 1 54 29.1

69 Virginis, $13^{h}\ 20^{m}\ 32^{s}$.

May 14 . . −15 17 56.0

(*), $13^{h}\ 20^{m}\ 53^{s}$.

June 10 . . −25 43 36.5

Lacaille 5559, $13^{h}\ 21^{m}\ 25^{s}$.

April 30 . . −26 43 30.0

Lacaille 5563, $13^{h}\ 22^{m}\ 21^{s}$.

April 30 . . −26 42 53.1

B. A. C. 4507, $13^{h}\ 23^{m}\ 32^{s}$.

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May 16 . . −38 44 7.8
19 . . 7.7

(*), $13^{h}\ 25^{m}\ 40^{s}$.

June 7 . . +61 55 28.1

(*), $13^{h}\ 27^{m}\ 35^{s}$.

May 11 . . −26 37 24.2

(*), $13^{h}\ 28^{m}\ 26^{s}$.

April 30 . . −31 42 23.9

B. A. C. 4536, $13^{h}\ 28^{m}\ 57^{s}$.

May 9 . . +37 50 57.2

(*), $13^{h}\ 29^{m}\ 26^{s}$.

April 30 . . −31 44 16.1

(*), $13^{h}\ 30^{m}\ 3^{s}$.

May 14 . . −35 54 30.1

Lacaille 5625, $13^{h}\ 32^{m}\ 20^{s}$.

May 19 . . −39 23 19.4

(*), $13^{h}\ 32^{m}\ 40^{s}$.

June 10 . . −26 29 24.0

Lacaille 5636, $13^{h}\ 33^{m}\ 4^{s}$.

May 16 . . −33 41 54.0

Lacaille 5645, $13^{h}\ 34^{m}\ 21^{s}$.

June 7 . . −32 56 21.3
17 . . 21.0

(*), $13^{h}\ 35^{m}\ 25^{s}$.

May 11 . . −37 40 39.7

(*), $13^{h}\ 36^{m}\ 43^{s}$.

May 14 . . −35 54 14.3

83 Virginis, $13^{h}\ 37^{m}\ 30^{s}$.

June 14 . . −15 31 26.6

(*), $13^{h}\ 38^{m}\ 42^{s}$.

April 30 . . −34 31 11.0

Weisse XIII, 694, $13^{h}\ 41^{m}\ 14^{s}$.

May 16 . . − 7 22 17.2

n Virginis, $13^{h}\ 41^{m}\ 29^{s}$.

June 23 . . − 6 11 14.4

Lacaille 5686, 13^h 41^m 43^s.

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May 11 . . −27 43 0.4

O. Arg. S. 13158, 13^h 41^m 50^s.

May 14 . . −22 4 30.9

Weisse XIII, 708, 13^h 42^m 1^s.

June 14 . . − 7 32 24.9

Weisse (2) XII, 891, 13^h 42^m 52^s.

June 10 . . +31 50 13.1

Weisse (2) XII, 900, 13^h 43^m 1^s.

June 7 . . +40 53 41.0

B. A. C. 4614, 13^h 44^m 3^s.

June 17 . . +78 42 57.1

B. A. C. 4620, 13^h 44^m 3^s.

June 21 . . −35 47 2.7

Lacaille 5739, 13^h 46^m 55^s.

June 11 . . −28 6 3.7

B. A. C. 4636, 13^h 46^m 57^s.

June 22 . . −27 55 33.8

Lacaille 5743, 13^h 47^m 7^s.

April 30 . . −33 57 14.8

(*), 13^h 49^m 7^s.

May 14 . . −37 45 35.5

Lalande 25635, 13^h 50^m 15^s.

May 16 . . −22 23 12.2

Lacaille 5769, 13^h 50^m 18^s.

May 11 . . −37 31 55.8
June 10 . . 56.7

Lacaille 5774, 13^h 50^m 49^s.

June 14 . . −29 6 26.1

(*), 13^h 51^m 28^s.

June 7 . . −36 57 40.7

(*), 13^h 53^m 1^s.

May 11 . . −37 29 29.6
June 10 . . 30.2

Lacaille 5785, 13^h 53^m 16^s.

June 17 . . −25 37 45.5

Brisbane 4727, 13^h 53^m 26^s.

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June 7 . . −36 50 13.9

B. A. C. 4667, 13^h 53^m 29^s.

June 20 . . −39 35 27.6

(*), 13^h 54^m 37^s.

June 21 . . +77 8 11.0

B. A. C. 4680, 13^h 57^m 29^s.

May 14 . . − 8 37 54.2
June 11 . . 55.9

Lacaille 5812, 13^h 58^m 12^s.

June 22 . . −37 6 17.6

O. Arg. S. 13387, 13^h 59^m 37^s.

May 16 . . −26 43 55.5
19 . . 55.3

B. A. C. 4691, 14^h 0^m 11^s.

June 25 . . −15 34 7.9

O. Arg. S. 13394, 14^h 0^m 31^s.

May 11 . . −26 43 27.5

(*), 14^h 0^m 46^s.

June 23 . . −32 25 58.1

O. Arg. S. 13432, 14^h 3^m 34^s.

June 14 . . −24 42 18.8
17 . . 20.1

(*), 14^h 4^m 17^s.

June 11 . . −24 34 2.7

(*), 14^h 7^m 57^s.

May 11 . . −36 59 30.3

Lacaille 5877, 14^h 8^m 58^s.

May 11 . . −34 24 7.7

Weisse (2) XIV, 196, 14^h 10^m 31^s.

June 10 . . +20 43 46.8

Lacaille 5886, 14^h 11^m 34^s.

May 16 . . −36 24 2.2

ψ Centauri, 14^h 12^m 42^s.

June 1 . . −37 17 11.1
14 . . 9.2

O. Arg. S. 13541, 14^h 12^m 46^s.

May 19 . . −27 26 55.5
June 20 . . 56.1

Weisse XIV, 209, 14^h 12^m 54^s.

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June 21 . . − 4 32 48.4

Lacaille 5906, 14^h 14^m 13^s.

June 23 . . −26 43 28.5
24 . . 28.8

Lacaille 5910, 14^h 14^m 32^s.

June 17 . . −27 42 45.1
22 . . 44.6

B. A. C. 4757, 14^h 14^m 34^s.

June 11 . . −34 11 27.0
25 . . 28.8

Lacaille 5915, 14^h 15^m 13^s.

May 14 . . −26 11 31.4

Lacaille 5923, 14^h 16^m 31^s.

May 11 . . −32 29 39.1

Lacaille 5925, 14^h 17^m 7^s.

June 10 . . −36 51 17.8

(*), 14^h 17^m 42^s.

June 17 . . −27 32 24.4

(*), 14^h 18^m 18^s.

June 14 . . −26 8 40.2

O. Arg. S. 13611, 14^h 18^m 44^s.

May 19 . . −26 38 11.0

O. Arg. S. 13626, 14^h 19^m 49^s.

May 16 . . −27 20 2.4
June 7 . . 1.5

Lacaille 5959, 14^h 22^m 23^s.

June 22 . . −24 57 34.9

Lacaille 5967, 14^h 23^m 23^s.

May 11 . . −34 6 3.3

(*), 14^h 23^m 25^s.

June 10 . . −25 31 49.4

B. A. C. 4800, 14^h 23^m 34^s.

May 14 . . −24 44 6.4

O. Arg. S. 13694, 14^h 24^m 21^s.

June 11 . . −23 58 49.3
14 . . 49.7

(*), 14^h 25^m 29^s.

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June 20 . . −30 8 17.7

O. Arg. S. 13747, 14^h 28^m 57^s.

June 17 . . −27 41 13.8

σ Bootis, 14^h 29^m 2^s.

May 16 . . +30 18 39.8

(*), 14^h 29^m 32^s.

May 11 . . −27 40 22.7

(*), 14^h 29^m 41^s.

May 11 . . −27 44 2.7
June 17 . . 1.9

Lacaille 6020, 14^h 30^m 31^s.

May 14 . . −34 42 33.7

O. Arg. S. 13813, 14^h 33^m 1^s.

May 19 . . −25 41 40.0

O. Arg. S. 13814, 14^h 33^m 5^s.

May 19 . . −25 41 9.9

Lacaille 6053, 14^h 34^m 5^s.

June 20 . . −28 47 51.6

(*), 14^h 34^m 13^s.

June 7 . . −32 15 21.1
11 . . 18.7
14 . . 19.7

Lacaille 6054, 14^h 34^m 30^s.

June 7 . . −32 12 27.8
11 . . 27.6
14 . . 27.1

(*), 14^h 37^m 27^s.

June 10 . . −37 24 10.8
17 . . 9.6

54 Hydræ, (1st *), 14^h 38^m 31^s.

June 24 . . −24 53 21.9

54 Hydræ, (2d *), 14^h 38^m 31^s.

June 24 . . −24 53 28.1

5 Libræ, 14^h 38^m 49^s.

May 16 . . −14 54 35.8

Lamont 4482, 14^h 38^m 59^s.

June 23 . . + 0 11 10.0

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ε BOOTIS, (1st *), $14^{h}\ 39^{m}\ 20^{s}$.	July	5 . .	+27 37 25.7
B. A. C. 4884, $14^{h}\ 40^{m}\ 58^{s}$.	June	20 . .	−24 56 54.0
LACAILLE 6109, $14^{h}\ 41^{m}\ 58^{s}$.	June	14 . .	−31 52 58.2
(*), $14^{h}\ 42^{m}\ 52^{s}$.	June	14 . .	−31 55 13.1
O. ARG. S. 13996, $14^{h}\ 44^{m}\ 27^{s}$.	May	19 . .	−23 45 4.9
12 LIBRÆ, $14^{h}\ 46^{m}\ 48^{s}$.	May	16 . .	−24 6 32.0
O. ARG. S. 14080, $14^{h}\ 49^{m}\ 22^{s}$.	June	11 . .	−25 45 26.8
(*), $14^{h}\ 49^{m}\ 23^{s}$.	June	7 . .	−26 16 27.6
14 LIBRÆ, $14^{h}\ 49^{m}\ 57^{s}$.	May	19 . .	−24 54 56.8
	June	17 . .	58.2
(*), $14^{h}\ 51^{m}\ 11^{s}$.	June	14 . .	+49 39 35.2
		20 . .	38.9
		22 . .	36.0
(*), $14^{h}\ 51^{m}\ 23^{s}$.	June	21 . .	+43 50 23.5
WEISSE (2) XIV, 1127, $14^{h}\ 52^{m}\ 32^{s}$.	June	24 . .	+40 41 5.2
(*), $14^{h}\ 52^{m}\ 57^{s}$.	June	14 . .	+49 36 31.7
		20 . .	29.6
		22 . .	29.3
WEISSE (2) XIV, 1147, $14^{h}\ 53^{m}\ 16^{s}$.	June	24 . .	+40 44 37.6
LACAILLE 6190, $14^{h}\ 53^{m}\ 58^{s}$.	June	23 . .	−33 50 31.3
B. A. C. 4941, $14^{h}\ 54^{m}\ 37^{s}$.	June	25 . .	− 2 14 16.9
	July	5 . .	15.8
(*), $14^{h}\ 56^{m}\ 19^{s}$.	June	11 . .	−27 32 58.7
LACAILLE 6218, $14^{h}\ 57^{m}\ 29^{s}$.	May	16 . .	−29 28 52.1
LACAILLE 6221, $14^{h}\ 58^{m}\ 6^{s}$.	June	17 . .	−35 45 27.6
B. A. C. 4965, $14^{h}\ 58^{m}\ 33^{s}$.	June	21 . .	+45 9 12.5
(*), $14^{h}\ 58^{m}\ 35^{s}$.	June	7 . .	−21 53 50.8
i BOOTIS, (1st *), $14^{h}\ 59^{m}\ 32^{s}$.	June	14 . .	+48 9 38.3
	July	5 . .	38.3
		6 . .	37.0
i BOOTIS, (2d *), $14^{h}\ 59^{m}\ 32^{s}$.	July	5 . .	+48 9 40.2
		8 . .	40.7
O. ARG. S. 14257, $14^{h}\ 59^{m}\ 34^{s}$.	June	25 . .	−28 59 57.4
WEISSE XIV, 1118, $15^{h}\ 0^{m}\ 17^{s}$.	June	23 . .	− 1 47 39.2
WEISSE 1121, $15^{h}\ 0^{m}\ 27^{s}$.	June	23 . .	− 1 46 40.5
O. ARG. S. 14277, $15^{h}\ 0^{m}\ 42^{s}$.	June	20 . .	−26 12 45.7
		22 . .	46.3
c BOOTIS, $15^{h}\ 1^{m}\ 36^{s}$.	June	24 . .	+25 22 37.4
	July	6 . .	35.0
WEISSE XIV, 1149, $15^{h}\ 1^{m}\ 51^{s}$.	June	11 . .	−11 17 24.3
(*), $15^{h}\ 2^{m}\ 2^{s}$.	June	24 . .	−36 58 34.2
(*), $15^{h}\ 6^{m}\ 16^{s}$.	May	16 . .	−25 33 45.7
	June	20 . .	44.8
26 LIBRÆ, $15^{h}\ 7^{m}\ 16^{s}$.	June	7 . .	−17 16 51.7
LACAILLE 6289, $15^{h}\ 8^{m}\ 9^{s}$.	June	17 . .	−39 4 37.3
O. ARG. S. 14402, $15^{h}\ 8^{m}\ 20^{s}$.	June	11 . .	−20 27 14.8
LACAILLE 6293, $15^{h}\ 8^{m}\ 41^{s}$.	June	21 . .	−37 57 51.2
O. ARG. S. 14429, $15^{h}\ 10^{m}\ 2^{s}$.	June	14 . .	−29 59 50.8
O. ARG. S. 14435, $15^{h}\ 10^{m}\ 50^{s}$.	June	25 . .	−30 20 49.9
LACAILLE 6318, $15^{h}\ 12^{m}\ 5^{s}$.	July	9 . .	−34 26 58.8
(*), $15^{h}\ 12^{m}\ 18^{s}$.	June	20 . .	+67 19 30.3
WEISSE (2) XV, 301, $15^{h}\ 14^{m}\ 14^{s}$.	June	23 . .	+45 29 26.0
LACAILLE 6343, $15^{h}\ 14^{m}\ 17^{s}$.	June	11 . .	−34 14 20.2
LACAILLE 6344, $15^{h}\ 14^{m}\ 22^{s}$.	June	7 . .	−33 41 20.7
O. ARG. S. 14487, $15^{h}\ 14^{m}\ 36^{s}$.	June	17 . .	−29 54 38.2
LACAILLE 6354, $15^{h}\ 15^{m}\ 25^{s}$.	June	11 . .	−34 16 28.6
WEISSE XV, 254, $15^{h}\ 15^{m}\ 41^{s}$.	June	21 . .	−13 7 37.6
o^2 LIBRÆ, $15^{h}\ 15^{m}\ 48^{s}$.	May	16 . .	−14 40 5.4
O. ARG. S. 14508, $15^{h}\ 15^{m}\ 52^{s}$.	June	22 . .	−26 47 25.6
O. ARG. S. 14511, $15^{h}\ 15^{m}\ 56^{s}$.	June	24 . .	−26 29 43.5
LACAILLE 6359, $15^{h}\ 16^{m}\ 43^{s}$.	July	9 . .	−37 42 20.7
(*), $15^{h}\ 16^{m}\ 50^{s}$.	June	25 . .	−37 2 14.0
B. A. C. 5066, $15^{h}\ 17^{m}\ 16^{s}$.	June	22 . .	−26 50 20.5
O. ARG. S. 14531, $15^{h}\ 17^{m}\ 26^{s}$.	June	30 . .	−21 34 50.5
	July	5 . .	52.7
LACAILLE 6368, $15^{h}\ 17^{m}\ 39^{s}$.	June	14 . .	−39 25 39.9
	July	8 . .	40.7
(*), $15^{h}\ 17^{m}\ 47^{s}$.	June	25 . .	−37 1 20.0
O. ARG. S. 14554, $15^{h}\ 19^{m}\ 11^{s}$.	June	20 . .	−22 2 47.6
RUMKER 5093, $15^{h}\ 21^{m}\ 33^{s}$.	June	17 . .	+44 45 30.7
(*), $15^{h}\ 22^{m}\ 31^{s}$.	June	7 . .	−33 7 51.7
WEISSE (2) XV, 518, $15^{h}\ 23^{m}\ 42^{s}$.	June	14 . .	+39 10 25.0
LACAILLE 6410, $15^{h}\ 54^{m}\ 7^{s}$.	June	11 . .	−27 37 33.8
(*), $15^{h}\ 25^{m}\ 26^{s}$.	June	21 . .	−32 44 53.2
B. A. C. 5111, (1st *), $15^{h}\ 25^{m}\ 29^{s}$.	June	22 . .	−24 2 42.6
B. A. C. 5111, (2d *), $15^{h}\ 25^{m}\ 30^{s}$.	June	22 . .	−24 2 47.9
LACAILLE 6415, $15^{h}\ 25^{m}\ 30^{s}$.	June	24 . .	−39 37 32.2
RADCLIFFE 3398, $15^{h}\ 25^{m}\ 36^{s}$.	June	30 . .	+55 38 29.0
	July	5 . .	28.5
ζ^4 LIBRÆ, $15^{h}\ 25^{m}\ 36^{s}$.	July	14 . .	−16 24 36.1
LACAILLE 6421, $15^{h}\ 26^{m}\ 6^{s}$.	June	21 . .	−32 43 47.6
O. ARG. S. 14648, $15^{h}\ 26^{m}\ 13^{s}$.	June	23 . .	−24 40 8.5
	July	8 . .	8.9
		13 . .	11.0

11 SERPENTIS, 15^{h} 26^{m} 18^{s}.

		° ′ ″
June	25	− 0 44 35.4
July	13	36.2

O. ARG. S. 14665, 15^{h} 27^{m} 25^{s}.

June	23	−24 39 59.6
July	8	60.1
	9	62.1
	13	62.9

O. ARG. S. 14674, 15^{h} 27^{m} 58^{s}.

July	8	−24 42 46.6

(*), 15^{h} 29^{m} 23^{s}.

June	7	−32 3 12.8

(*), 15^{h} 29^{m} 57^{s}.

June	17	−21 41 32.4

(*), 15^{h} 31^{m} 38^{s}.

June	11	−36 0 36.8
	14	34.4

(*), 15^{h} 31^{m} 39^{s}.

July	13	−35 45 15.7

(*), 15^{h} 31^{m} 40^{s}.

June	10	−38 17 2.1

(*), 15^{h} 31^{m} 45^{s}.

July	9	−35 44 42.7

(*), 15^{h} 32^{m} 8^{s}.

June	24	−22 27 56.7
	25	58.0

(*), 15^{h} 33^{m} 50^{s}.

June	21	+43 12 30.7

(*), 15^{h} 34^{m} 16^{s}.

June	30	+43 9 25.5

WEISSE (2) XV, 822, 15^{h} 34^{m} 29^{s}.

July	5	+43 9 19.3

LACAILLE 6491, 15^{h} 34^{m} 35^{s}.

June	22	−31 45 59.6

RADCLIFFE 3431, 15^{h} 35^{m} 7^{s}.

June	21	+43 7 5.0
	30	6.0
July	5	4.3

(*), 15^{h} 36^{m} 10^{s}.

June	7	−30 17 48.9
	20	46.2

(*), 15^{h} 36^{m} 48^{s}.

		° ′ ″
June	7	−30 16 20.5
	17	19.0

LALANDE 28740, 15^{h} 37^{m} 13^{s}.

June	23	+66 12 51.2

(*), 15^{h} 38^{m} 42^{s}.

June	14	−18 57 20.0

O. ARG. S. 14855, 15^{h} 39^{m} 1^{s}.

June	11	−25 33 54.8
July	8	54.9

O. ARG. S. 14861, 15^{h} 39^{m} 4^{s}.

June	11	−25 31 54.9
July	8	54.9

O. ARG. S. 14871, 15^{h} 39^{m} 37^{s}.

June	25	−25 27 38.8

(*), 15^{h} 39^{m} 58^{s}.

June	10	−20 49 39.8

B. A. C. 5211, 15^{h} 40^{m} 12^{s}.

July	19	−25 34 53.5

O. ARG. S. 14282, 15^{h} 40^{m} 21^{s}.

June	24	−19 17 51.4

B. A. C. 5220, 15^{h} 40^{m} 44^{s}.

July	9	−23 25 49.6

μ SERPENTIS, 15^{h} 42^{m} 52^{s}.

June	22	− 3 1 47.6

O. ARG. N. 15681, 15^{h} 44^{m} 56^{s}.

June	21	+66 15 44.7

O. ARG. N. 15688, 15^{h} 45^{m} 23^{s}.

June	21	+66 15 52.3

(*), 15^{h} 46^{m} 29^{s}.

June	7	−18 33 45.1

(*) 15^{h} 47^{m} 7^{s}.

June	20	−10 42 6.8

(*), 15^{h} 48^{m} 9^{s}.

June	14	−16 52 7.6

O. ARG. S. 15023, 15^{h} 48^{m} 16^{s}.

June	23	−25 33 6.6
July	13	5.3

RADCLIFFE 3462, 15^{h} 48^{m} 20^{s}.

		° ′ ″
June	22	+42 58 24.1

(*), 15^{h} 49^{m} 12^{s}.

June	30	−21 50 15.5
July	8	15.1

π SCORPII, 15^{h} 51^{m} 1^{s}.

July	19	−25 44 13.6

B. A. C. 5297, 15^{h} 51^{m} 38^{s}.

June	24	−29 15 26.7

LACAILLE 6624, 15^{h} 51^{m} 40^{s}.

June	17	−33 0 41.1

B. A. C. 5299, 15^{h} 51^{m} 46^{s}.

June	7	−30 47 38.9

ε CORONÆ BOREALIS, 15^{h} 52^{m} 14^{s}.

July	5	+27 15 19.8

49 LIBRÆ, 15^{h} 53^{m} 3^{s}.

June	20	−16 8 55.0

LACAILLE 6641, 15^{h} 53^{m} 37^{s}.

June	23	−36 22 31.8
	25	31.3

O. ARG. S. 15179, 15^{h} 57^{m} 0^{s}.

June	11	−20 59 30.0

(*), 15^{h} 57^{m} 9^{s}.

July	14	+70 0 26.4

51 LIBRÆ, (2d *), 15^{h} 57^{m} 16^{s}.

June	14	−11 0 40.8
July	5	42.8

B. A. C. 5333, 15^{h} 58^{m} 14^{s}.

June	21	−19 19 24.4
July	8	24.0
	13	24.4

B. A. C. 5335, 15^{h} 58^{m} 34^{s}.

June	30	−23 14 58.9

O. ARG. N. 15864, 15^{h} 58^{m} 42^{s}.

July	19	+70 5 6.4

O. ARG. S. 15225, 15^{h} 59^{m} 10^{s}.

June	7	−21 33 57.1
	22	58.9

(*), 15^{h} 59^{m} 27^{s}.

		° ′ ″
June	25	−11 33 5.4

O. ARG. S. 15235, 15^{h} 59^{m} 39^{s}.

June	24	−21 42 25.1
July	8	23.7

O. ARG. N. 15876, 15^{h} 59^{m} 50^{s}.

July	19	+70 6 21.2

B. A. C. 5357, 16^{h} 1^{m} 24^{s}.

July	11	−39 46 59.4

45 SERPENTIS, 16^{h} 1^{m} 27^{s}.

June	23	+10 14 30.0

B. A. C. 5368, 16^{h} 2^{m} 14^{s}.

June	17	+17 24 11.1
	20	12.4

B. A. C, 5364, 16^{h} 2^{m} 20^{s}.

July	9	−26 33 47.6
	13	47.7

c^2 SCORPII, 16^{h} 4^{m} 20^{s}.

June	21	−27 35 12.0

O. ARG. S. 15359, 16^{h} 4^{m} 34^{s}.

June	11	−29 48 49.4

O. ARG. N. 15952, 16^{h} 4^{m} 56^{s}.

June	30	+65 1 55.8

GROOMBRIDGE 2319, 16^{h} 5^{m} 28^{s}.

July	14	+70 36 36.5

WEISSE (2) XVI, 154, 16^{h} 5^{m} 41^{s}.

June	14	+42 9 49.0
	24	48.9

(*), 16^{h} 12^{m} 3^{s}.

June	22	−34 39 38.7

(*), 16^{h} 12^{m} 28^{s}.

June	25	+79 34 32.0

19 SCORPII, 16^{h} 12^{m} 50^{s}.

June	28	−23 51 13.6
July	11	13.2

(* 120) WASHINGTON, 16^{h} 12^{m} 51^{s}.

June	24	+79 34 54.5
	25	53.3

Lacaille 6796, 16^{h} 13^{m} 10^{s}.

° ′ ″
July 5 . . −32 59 12.2
15 . . 12.3

Lacaille 6797, 16^{h} 13^{m} 18^{s}.

July 5 . . −32 55 16.0
16 . . 14.6

σ Scorpii, (Comp.), 16^{h} 13^{m} 18^{s}.

June 21 . . −25 16 40.1
July 8 . . 41.4

B. A. C. 5476, 16^{h} 17^{m} 42^{s}.

June 17 . . −29 37 13.3

O. Arg. S. 15694, 16^{h} 23^{m} 33^{s}.

June 17 . . −29 36 14.1
30 . . 17.4

O. Arg. S. 15712, 16^{h} 24^{m} 44^{s}.

June 22 . . −20 30 5.1

(*), 16^{h} 26^{m} 3^{s}.

June 20 . . −24 0 43.3

Weisse (2) XVI, 788, 16^{h} 26^{m} 39^{s}.

June 24 . . +33 47 35.9

τ Scorpii, 16^{h} 27^{m} 50^{s}.

July 30 . . −27 56 34.9

Lacaille 6894, 16^{h} 28^{m} 7^{s}.

June 17 . . −35 38 47.0

(*), 16^{h} 30^{m} 24^{s}.

July 13 . . −29 39 47.8

O. Arg. S. 15782, 16^{h} 30^{m} 35^{s}.

June 30 . . −29 37 35.9

O. Arg. S. 15788, 16^{h} 30^{m} 44^{s}.

June 23 . . −23 52 0.4

O. Arg. S. 15790, 16^{h} 31^{m} 6^{s}.

June 25 . . −28 38 28.0

(*), 16^{h} 32^{m} 16^{s}.

June 22 . . −26 3 47.7

Radcliffe 3589, 16^{h} 33^{m} 24^{s}.

July 16 . . +79 14 18.1

B. A. C. 5569, 16^{h} 33^{m} 34^{s}.

° ′ ″
June 20 . . −27 33 13.2

Lacaille 6931, 16^{h} 33^{m} 42^{s}.

July 8 . . −32 33 57.0

(*), 16^{h} 33^{m} 50^{s}.

July 8 . . −32 33 18.9

B. A. C. 5576, 16^{h} 34^{m} 1^{s}.

July 14 . . −28 52 2.9

(*), 16^{h} 34^{m} 10^{s}.

July 11 . . −39 15 28.5

O. Arg. S. 15847, 16^{h} 34^{m} 16^{s}.

July 22 . . −24 33 58.9

B. A. C. 5583, 16^{h} 34^{m} 48^{s}.

June 24 . . −40 52 8.6

B. A. C. 5584, 16^{h} 34^{m} 56^{s}.

June 24 . . −40 51 47.9

Radcliffe 3588, 16^{h} 35^{m} 2^{s}.

July 5 . . +49 7 10.4
9 . . 10.9

O. Arg. S. 15868, 16^{h} 35^{m} 21^{s}.

June 30 . . −21 5 29.6

(*), 16^{h} 35^{m} 52^{s}.

July 30 . . −39 8 40.4

B. A. C. 5600, 16^{h} 36^{m} 15^{s}.

July 19 . . −27 12 30.8

O. Arg. S. 15896, 16^{h} 36^{m} 52^{s}.

July 19 . . −27 12 36.0

B. A. C. 5607, 16^{h} 37^{m} 27^{s}.

July 13 . . −28 35 50.3

Lacaille 6970, 16^{h} 38^{m} 6^{s}.

June 25 . . −39 8 7.0
July 30 . . 8.1

Lalande 30545, 16^{h} 38^{m} 14^{s}.

July 14 . . +62 34 20.3

Lacaille 6976, 16^{h} 38^{m} 18^{s}.

June 23 . . −32 42 24.2

O. Arg. S. 15923, 16^{h} 38^{m} 33^{s}.

° ′ ″
July 11 . . −27 14 28.9

O. Arg. N. 16481, 16^{h} 39^{m} 43^{s}.

July 14 . . +62 33 17.1

O. Arg. S. 15950, 16^{h} 39^{m} 48^{s}.

June 20 . . −28 43 15.3

Weisse XVI, 760, 16^{h} 40^{m} 30^{s}.

June 22 . . − 6 6 6.4

19 Ophiuchi, 16^{h} 40^{m} 38^{s}.

July 16 . . + 2 18 4.0

B. A. C. 5630, 16^{h} 41^{m} 15^{s}.

June 30 . . −31 25 12.9

Weisse XVI, 794, 16^{h} 42^{m} 11^{s}.

June 28 . . +13 49 23.3

(*), 16^{h} 42^{m} 22^{s}.

June 30 . . −31 24 28.7

(*), 16^{h} 43^{m} 34^{s}.

July 22 . . −37 22 55.4

Lacaille 7011, 16^{h} 43^{m} 45^{s}.

July 22 . . −37 22 30.0

O. Arg. S. 16031, 16^{h} 43^{m} 45^{s}.

June 17 . . −21 25 45.5

(*), 16^{h} 44^{m} 8^{s}.

June 23 . . −36 47 13.4

(*), 16^{h} 44^{m} 30^{s}.

July 13 . . − 5 57 6.0

B. A. C. 5653, 16^{h} 44^{m} 46^{s}.

June 24 . . −31 39 30.9
July 9 . . 31.2
30 . . 29.6

O. Arg. S. 16046, 16^{h} 44^{m} 52^{s}.

July 16 . . −30 12 31.5

O. Arg. S. 16060, 16^{h} 45^{m} 28^{s}.

July 16 . . −30 11 13.4

B. A. C. 5665, 16^{h} 45^{m} 56^{s}.

June 25 . . −30 32 6.2

(*), 16^{h} 45^{m} 56^{s}.

° ′ ″
June 25 . . −30 30 9.4

(*), 16^{h} 46^{m} 10^{s}.

July 8 . . −22 5 38.7
19 . . 19.4
Faint.

O. Arg. S. 16076, 16^{h} 46^{m} 19^{s}.

July 11 . . −19 5 41.4

(*), 16^{h} 47^{m} 16^{s}.

June 22 . . −31 7 2.6

B. A. C. 5690, 16^{h} 48^{m} 43^{s}.

June 22 . . −31 5 40.7

(*), 16^{h} 49^{m} 28^{s}.

June 17 . . −26 28 33.9
30 . . 34.8

(*), 16^{h} 52^{m} 24^{s}.

July 13 . . −37 8 9.0

(*), 16^{h} 53^{m} 11^{s}.

July 8 . . −37 6 23.1

Lacaille 7087, 16^{h} 53^{m} 16^{s}.

June 24 . . −33 10 17.4

B. A. C. 5721, 16^{h} 54^{m} 6^{s}.

July 14 . . −32 3 56.2
30 . . 54.6

30 Ophiuchi, 16^{h} 54^{m} 12^{s}.

July 9 . . − 4 1 29.7

(*), 16^{h} 55^{m} 14^{s}.

July 16 . . −29 56 48.8

(*), 16^{h} 55^{m} 48^{s}.

June 30 . . −24 5 33.9
July 19 . . 32.7

Weisse VIII, 1048, 16^{h} 56^{m} 7^{s}.

July 22 . . − 9 4 57.0

(*), 16^{h} 56^{m} 9^{s}.

June 30 . . −24 6 23.7
July 19 . . 19.1

Star	Month	Day	°	′	″
(*), 16^{h} 56^{m} 43^{s}.	June	25	−31	11	12.3
Lacaille 7123, 16^{h} 57^{m} 36^{s}.	July	8	−37	2	42.3
(*), 16^{h} 57^{m} 39^{s}.	June	22	−36	55	0.3
B. A. C. 5756, 16^{h} 58^{m} 14^{s}.	July	18	−29	58	10.3
Lacaille 7133, 16^{h} 59^{m} 13^{s}.	July	11	−40	50	53.6
		13			55.4
(*), 16^{h} 59^{m} 53^{s}.	June	20	−37	7	44.5
(*), 17^{h} 0^{m} 34^{s}.	July	14	−30	13	41.9
B. A. C. 5782, 17^{h} 3^{m} 20^{s}.	August	1	−39	20	27.4
Lacaille 7160, 17^{h} 3^{m} 24^{s}.	July	30	−38	39	26.2
	August	12			27.8
(*), 17^{h} 5^{m} 11^{s}.	June	24	−35	8	55.6
(*), 17^{h} 5^{m} 29^{s}.	July	16	−35	8	33.5
(*), 17^{h} 5^{m} 42^{s}.	July	14	−39	36	36.3
(*), 17^{h} 8^{m} 10^{s}.	June	30	−35	19	48.2
	July	19			50.5
(*), 17^{h} 9^{m} 9^{s}.	June	24	−35	4	40.2
Lacaille 7207, 17^{h} 9^{m} 15^{s}.	July	8	−38	1	5.4
38 Ophiuchi, 17^{h} 9^{m} 37^{s}.	June	22	−26	28	57.7
(*), 17^{h} 9^{m} 53^{s}.	July	30	+73	33	49.1
O. Arg. S. 16586, 17^{h} 11^{m} 5^{s}.	July	11	−22	33	58.3
Lacaille 7230, 17^{h} 11^{m} 52^{s}.	June	20	−37	53	0.9
u Herculis, 17^{h} 12^{m} 32^{s}.	July	5	+33	14	28.3
Dorpat 2147, 17^{h} 13^{m} 4^{s}.	July	14	− 6	17	29.2
(*), 17^{h} 13^{m} 10^{s}.	June	24	−35	12	47.8
(*), 17^{h} 13^{m} 56^{s}.	June	24	−35	14	55.9
	July	13			53.9
		25			52.8
O. Arg. S. 16659, 17^{h} 13^{m} 57^{s}.	June	30	−22	37	0.5
(*), 17^{h} 15^{m} 57^{s}.	July	13	−35	13	59.8
(*), 17^{h} 16^{m} 33^{s}.	August	12	−34	26	19.1
(*), 17^{h} 18^{m} 14^{s}.	June	22	−31	29	27.2
ρ Herculis, (1st *), 17^{h} 19^{m} 15^{s}.	July	9	+37	15	61.5
	August	26			58.9
ρ Herculis, (2d *), 17^{h} 19^{m} 15^{s}.	July	9	+37	16	3.5
	August	26			2.3
B. A. C. 5890, 17^{h} 19^{m} 46^{s}.	July	8	− 4	58	9.7
O. Arg. S. 16832, 17^{h} 21^{m} 28^{s}.	July	11	−15	54	33.1
Lacaille 7312, 17^{h} 21^{m} 33^{s}.	June	20	−33	36	31.5
O. Arg. S. 16833, 17^{h} 21^{m} 35^{s}.	July	11	−15	56	3.0
		19			0.0
O. Arg. S. 16842, 17^{h} 22^{m} 5^{s}.	July	14	−15	55	35.9
		30			37.5
O. Arg. S. 16856, 17^{h} 22^{m} 27^{s}.	July	11	−15	54	33.6
		14			32.0
		22			35.1
		30			32.0
(*), 17^{h} 22^{m} 35^{s}.	June	30	−40	56	10.1
O. Arg. S. 16897, 17^{h} 23^{m} 6^{s}.	August	12	−22	53	52.4
(*), 17^{h} 23^{m} 20^{s}.	July	5	−31	46	8.9
O. Arg. S. 16875, 17^{h} 23^{m} 23$_{s}$.	July	19	−15	52	56.1
		26			(64.1)
c^2 Ophiuchi, 17^{h} 23^{m} 31^{s}.	July	15	−23	51	33.7
	August	17			34.2
(*), 17^{h} 23^{m} 46^{s}.	June	24	−35	5	4.4
λ Scorpii, 17^{h} 24^{m} 49^{s}.	August	8	−37	0	21.9
(*), 17^{h} 25^{m} 56^{s}.	June	22	−32	27	59.2
	July	16			62.4
(*), 17^{h} 26^{m} 17^{s}.	August	5	−31	13	3.9
(*), 17^{h} 26^{m} 32^{s}.	July	8	−38	31	28.4
	August	6			25.8
(*), 17^{h} 27^{m} 0^{s}.	July	8	−38	30	18.5
	August	1			17.4
		6			18.0
B. A. C. 5932, 17^{h} 27^{m} 46^{s}.	August	1	−38	32	24.1
Weisse XVII, 508, 17^{h} 28^{m} 0^{s}.	July	21	+12	36	20.0
(*), 17^{h} 29^{m} 6^{s}.	July	13	−37	19	26.1
(*), 17^{h} 29^{m} 47^{s}.	June	28	−20	36	21.5
	July	22			23.6
(*), 17^{h} 30^{m} 8^{s}.	June	22	−20	35	7.1
(*), 17^{h} 30^{m} 48^{s}.	June	24	−35	8	11.9
O. Arg. S. 17016, 17^{h} 31^{m} 0^{s}.	August	17	−26	51	21.9
(*), 17^{h} 31^{m} 28^{s}.	June	30	−32	5	48.4
B. A. C. 5960, 17^{h} 31^{m} 32^{s}.	July	9	−32	7	27.7
		15			27.8
		16			29.1
		26			27.0
		30			26.1
(*), 17^{h} 31^{m} 35^{s}.	June	30	−32	5	0.9
(*), 17^{h} 31^{m} 43^{s}.	July	9	−32	10	50.7
		12			49.5
	August	15			50.7
(*), 17^{h} 31^{m} 55^{s}.	August	12	−32	11	18.7
		15			20.4
(*), 17^{h} 32^{m} 13^{s}.	July	16	−32	6	50.7
B. A. C. 5964, 17^{h} 32^{m} 40^{s}.	July	9	−32	8	27.6
		15			27.2
		26			25.7
	August	8			26.9
		15			27.9
Rumker 5943, 17^{h} 33^{m} 15^{s}.	July	5	+48	39	44.7
(*), 17^{h} 33^{m} 57^{s}.	July	11	−34	15	3.3
(*), 17^{h} 34^{m} 59^{s}.	June	24	−35	11	18.0

(*), 17^h 35^m 3^s.

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August	15 . .	−32	9	58.4

O. Arg. S. 17114, 17^h 35^m 30^s.

July	19 . .	−19	26	29.1

(*), 17^h 35^m 43^s.

July	8 . .	−31	12	42.6

O. Arg. S. 17133, 17^h 36^m 36^s.

July	14 . .	−21	40	12.2

(*), 17^h 36^m 38^s.

August	5 . .	−35	6	4.0

Lacaille 7423, 17^h 38^m 15^s.

July	22 . .	−39	21	61.2
August	1 . .			59.4

(*), 17^h 38^m 36^s.

August	18 . .	−34	47	47.9

(*), 17^h 38^m 44^s.

August	18 . .	−34	40	51.9

B. A. C. 6015, 17^h 40^m 21^s.

June	28 . .	−26	55	29.6

B. A. C. 6016, 17^h 40^m 46^s.

July	21 . .	−31	39	21.1

Lacaille 7448, 17^h 40^m 48^s.

July	15 . .	−35	19	51.6

(*), 17^h 42^m 1^s.

June	24 . .	−26	45	59.5

Lacaille 7459, 17^h 42^m 21^s.

July	14 . .	−33	39	45.6

(*), 17^h 42^m 24^s.

August	5 . .	−35	17	42.4

(*), 17^h 42^m 26^s.

July	15 . .	−35	18	16.8
August	5 . .			20.0
	17 . .			19.3

(*), 17^h 42^m 27^s.

August	6 . .	−22	55	14.8

(*), 17^h 42^m 51^s.

July	19 . .	−28	37	0.4

(*), 17^h 43^m 10^s.

		°	′	″
July	15 . .	−35	19	33.8
August	17 . .			33.9

(*), 17^h 43^m 13^s.

July	5 . .	−31	22	23.8
	11 . .			24.2

O. Arg. S. 17270, 17^h 43^m 16^s.

June	30 . .	−22	52	39.7

(*), 17^h 43^m 16^s.

August	12 . .	−34	44	34.5
	18 . .			34.4

O. Arg. S. 17275, 17^h 43^m 25^s.

July	26 . .	−17	12	56.8

B. A. C. 6029, 17^h 43^m 42^s.

August	12 . .	−34	45	38.2

(*), 17^h 43^m 46^s.

July	19 . .	−28	34	58.2

O. Arg. S. 17281, 17^h 43^m 53^s.

August	26 . .	−25	44	1.0

B. A. C. 6032, 17^h 43^m 55^s.

July	8 . .	−31	17	24.2

(*), 17^h 44^m 42^s.

August	1 . .	−36	28	26.1
	6 . .			27.1

B. A. C. 6037, 17^h 44^m 42^s.

July	30 . .	−34	41	44.2

B. A. C. 6042, (1st *), 17^h 45^m 7^s.

August	12 . .	−34	45	38.9
	18 . .			40.3

B, A. C. 6042, (2d *), 17^h 45^m 9^s.

August	18 . .	−34	45	10.5

(*), 17^h 45^m 11^s.

August	26 . .	−25	43	1.3

O. Arg. S. 17320, 17^h 45^m 36^s.

July	19 . .	−28	39	19.4

(*), 17^h 45^m 37^s.

July	30 . .	−34	41	42.8

B. A. C. 6045, 17^h 45^m 44^s.

		°	′	″
July	16 . .	−34	50	50.0

(*), 17^h 45^m 53^s.

July	8 . .	−31	13	44.8

Weisse XVII, 905, 17^h 45^m 55^s.

July	9 . .	− 7	52	38.0

(*), 17^h 45^m 59^s.

August	15 . .	−28	8	34.5

(*), 17^h 46^m 8^s.

July	16 . .	−34	50	2.3

B. A. C. 6051, 17^h 46^m 22^s.

August	1 . .	−36	26	45.0

(*), 17^h 46^m 22^s.

August	18 . .	−34	43	16.8

(*), 17^h 47^m 4^s.

July	22 . .	−31	55	43.9

(*), 17^h 47^m 5^s.

July	22 . .	−31	58	21.2

(*), 17^h 48^m 19^s.

August	18 . .	−34	43	36.1

Lacaille 7504, 17^h 49^m 10^s.

July	14 . .	−39	6	53.5

(*), 17^h 49^m 59^s.

August	15 . .	−28	8	34.7

(*), 17^h 50^m 0^s.

August	15 . .	−28	7	21.2

B. A. C. 6070, 17^h 50^m 8^s.

July	5 . .	−36	50	28.8

O. Arg. S. 17426, 17^h 50^m 26^s.

June	30 . .	−25	10	24.4

Dorpat 2444, 17^h 50^m 27^s.

July	30 . .	+ 0	5	14.5

Lacaille 7514, 17^h 50^m 31^s.

July	8 . .	−41	28	17.0

Lacaille 7516, 17^h 50^m 34^s.

		°	′	″
July	5 . .	−36	55	17.2

B. A. C. 6074, (1st *), 17^h 50^m 46^s.

August	5 . .	−30	14	11.4
	6 . .			12.6

B. A. C. 6074, (2d *), 17^h 50^m 46^s.

August	5 . .	−30	14	13.3
	6 . .			13.8

Lacaille 7520, 17^h 51^m 19^s.

July	11 . .	−39	13	58.3
	15 . .			57.2

O. Arg. S. 17447, 17^h 51^m 56^s.

June	30 . .	−25	8	58.5

(*), 17^h 51^m 57^s.

July	26 . .	−36	57	23.0
August	8 . .			16.7

O. Arg. S. 17449, 17^h 52^m 4^s.

June	30 . .	−24	4	27.9
July	13 . .			25.5

(*), 17^h 52^m 12^s.

August	12 . .	+51	31	2.2
	17 . .			2.2

(*), 17^h 52^m 30^s.

July	19 . .	−28	41	59.0

(*), 17^h 52^m 55^s.

July	30 . .	+ 0	2	1.9

(*), 17^h 53^m 54^s.

June	28 . .	−24	9	1.3

O. Arg. S. 17533, 17^h 55^m 40^s.

July	22 . .	−27	43	44.2

O. Arg. S. 17535, 17^h 55^m 43^s.

July	22 . .	−27	44	30.9

B. A. C. 6103, 17^h 56^m 6^s.

July	9 . .	−35	54	6.2

B. A. C. 6108, 17^h 56^m 50^s.

July	26 . .	−25	36	26.8

Star	Month	Day	°	′	″
WEISSE XVII, 1174, 17^h 56^m 56^s.					
	August	1	+2	30	51.5
LACAILLE 7551, 17^h 56^m 57^s.					
	July	11	−36	35	0.7
(*), 17^h 57^m 23^s.					
	July	16	−37	30	2.5
(*), 17^h 57^m 26^s.					
	July	16	−37	26	16.4
γ^2 SAGITTARII, 17^h 57^m 30^s.					
	August	15	−30	25	21.2
		26			21.6
O. ARG. S. 17597, 17^h 58^m 13^s.					
	August	8	−24	12	7.6
(*), 17^h 58^m 25^s.					
	July	8	−21	28	6.8
O. ARG. S. 17612, 17^h 58^m 35^s.					
	August	12	−24	9	56.8
		17			55.8
LALANDE 33147, 17^h 59^m 4^s.					
	August	5	−21	30	51.6
		6			51.7
(*), 17^h 59^m 52^s.					
	July	19	−22	54	33.6
(*), 18^h 0^m 0^s.					
	July	15	−22	53	31.4
		19			30.4
B. A. C. 6128, 18^h 0^m 20^s.					
	July	14	−44	57	36.8
LACAILLE 7580, 18^h 0^m 36^s.					
	July	13	−36	41	16.4
LACAILLE 7588, 18^h 1^m 30^s.					
	June	28	−32	43	56.4
ε TELESCOPII, 18^h 1^m 37^s.					
	June	30	−45	58	28.8
	July	30			24.3
(*), 18^h 3^m 16^s.					
	July	5	−23	22	26.0
		22			25.7
O. ARG. S. 17817, 18^h 4^m 55^s.					
	July	11	−21	0	54.1
(*), 18^h 5^m 9^s.					
	July	9	−23	8	44.7
(*), 18^h 5^m 58^s.					
	August	1	−21	4	48.5
		26			48.9
(*), 18^h 6^m 5^s.					
	July	11	−21	5	46.1
	August	1			47.9
O. ARG. S. 17861, 18^h 6^m 20^s.					
	July	8	−28	52	18.5
O. ARG. S. 17871, 18^h 6^m 29^s.					
	July	13	−21	44	43.5
		14			39.4
15 SAGITTARII, 18^h 7^m 29^s.					
	July	26	−20	45	51.1
(*), 18^h 7^m 32^s.					
	August	15	−18	56	53.5
O. ARG. S. 17905, 18^h 7^m 40^s.					
	July	18	−19	1	44.1
		21			43.7
O. ARG. S. 17927, 18^h 8^m 7^s.					
	July	19	−28	58	10.8
O. ARG. S. 17928, 18^h 8^m 8^s.					
	July	21	−18	59	26.9
	August	5			27.1
		6			27.9
		12			27.5
		15			27.9
(*), 18^h 8^m 8^s.					
	August	6	−18	56	54.1
(*), 18^h 8^m 12^s.					
	July	16	−30	26	32.9
(*), 18^h 9^m 17^s.					
	June	30	−18	35	23.8
	July	22			29.6
η SERPENTIS, 18^h 14^m 37^s.					
	August	17	−2	55	49.9
		26			47.3
O. ARG. S. 18115, (1st *), 18^h 14^m 49^s.					
	July	5	−15	8	57.5
O. ARG. S. 18115, (2d *), 18^h 14^m 49^s.					
	July	5	−15	8	47.6
(*), 18^h 15^m 37^s.					
	June	30	−38	40	33.8
	July	8			31.7
	September	5			30.4
(*), 18^h 16^m 10^s.					
	June	30	−38	38	22.0
	July	8			22.9
	August	12			26.2
	September	5			24.0
(*), 18^h 18^m 48^s.					
	August	5	−29	34	48.5
B. A. C. 6279, 18^h 21^m 49^s.					
	July	13	−14	38	45.2
		21			46.8
B. A. C. 6284, 18^h 22^m 24^s.					
	July	5	−14	39	53.7
		13			52.3
		21			53.4
B. A. C. 6285, 18^h 22^m 35^s.					
	August	12	−33	4	20.0
(*), 18^h 23^m 55^s.					
	August	12	−33	1	35.8
(*), 18^h 24^m 44^s.					
	August	12	−33	4	19.6
(*), 18^h 25^m 36^s.					
	August	12	−33	3	15.8
O. ARG. S. 18505, 18^h 31^m 49^s.					
	July	5	−25	36	46.9
O. ARG. S. 18506, (1st *), 18^h 32^m 46^s.					
	July	22	−25	37	7.7
O. ARG. S. 18506, (2d *), 18^h 32^m 46^s.					
	July	22	−25	37	2.4
WEISSE XVIII, 793, 18^h 32^m 51^s.					
	July	21	−9	15	22.0
	August	12			19.8
O. ARG. S. 18915, 18^h 52^m 0^s.					
	September	13	−28	52	35.1
(*), 19^h 0^m 8^s.					
	September	6	−13	2	34.6
		9			32.7
(*), 19^h 0^m 12^s.					
	September	13	−8	49	57.5
LACAILLE 7998, 19^h 0^m 13^s.					
	September	5	−33	59	28.0
WEISSE XVII, 1539, 19^h 0^m 22^s.					
	September	21	+13	38	39.3
LACAILLE 8153, 19^h 27^m 20^s.					
	September	21	−37	5	9.9
LACAILLE 8158, 19^h 28^m 31^s.					
	September	21	−41	44	35.1
O. ARG. S. 20022, 19^h 44^m 49^s.					
	September	21	−27	10	5.4
O. ARG. S. 20100, 19^h 49^m 37^s.					
	September	19	−27	51	39.5
LACAILLE 8278, 19^h 49^m 42^s.					
	September	21	−37	1	49.2
DORPAT 2601, (1st *), 19^h 50^m 17^s.					
	October	10	+1	34	37.1
γ SAGITTÆ, 19^h 53^m 0^s.					
	September	21	+19	8	27.0
(*), 19^h 53^m 42^s.					
	September	16	+6	35	21.5
WEISSE XX, 46, 20^h 4^m 9^s.					
	September	23	−9	13	27.9
(*), 20^h 4^m 27a.					
	September	19	−9	9	2.1
(*), 20^h 17^m 32^s.					
	September	16	−23	36	4.1

(*), $20^{h}\ 26^{m}\ 40^{s}$.

° ′ ″
September 6 . . − 0 2 40.0
13 . . . 39.7

(*), $20^{h}\ 27^{m}\ 40^{s}$.

September 6 . . − 0 5 55.6
23 . . 46.6
Very faint indeed.

(*), $20^{h}\ 28^{m}\ 40^{s}$.

October 10 . . −10 2 58.2

WEISSE XX, 841, $20^{h}\ 33^{m}\ 53^{s}$.

September 9 . . − 7 15 18.5

WEISSE XX, 846, $20^{h}\ 34^{m}\ 2^{s}$.

September 9 . . − 7 14 26.6

(*), $20^{h}\ 37^{m}\ 1^{s}$.

September 9 . . −35 38 0.1

O. ARG. S. 20817, $20^{h}\ 38^{m}\ 39^{s}$.

September 16 . . −24 16 2.7

(*), $20^{h}\ 39^{m}\ 5^{s}$.

September 9 . . −35 37 25.9

LACAILLE 8585, $20^{h}\ 42^{m}\ 47^{s}$.

September 14 . . −32 12 17.6

LACAILLE 8587, $20^{h}\ 42^{m}\ 49^{s}$.

September 6 . . −32 32 2.4

B. A. C. 7221, $20^{h}\ 43^{m}\ 34^{s}$.

September 13 . . −13 1 28.5

(*), $21^{h}\ 15^{m}\ 53^{s}$.

September 14 . . +48 48 7.1

LALANDE 41544, $21^{h}\ 16^{m}\ 41^{s}$.

September 9 . . −12 36 52.6
13 . . 52.4

B. A. C. 7431, $21^{h}\ 17^{m}\ 33^{s}$.

September 14 . . +48 49 59.4

LALANDE 41624, $21^{h}\ 17^{m}\ 39^{s}$.

September 16 . . +38 4 51.2

B. A. C. 7437, $21^{h}\ 18^{m}\ 9^{s}$.

September 23 . . +23 43 3.0

O. ARG. N. 22321, $21^{h}\ 23^{m}\ 44^{s}$.

September 14 . . +69 54 46.5

(*), $21^{h}\ 24^{m}\ 51^{s}$.

° ″ ″
September 9 . . −23 37 50.3

O. ARG. S. 21452, $21^{h}\ 25^{m}\ 9^{s}$.

November 9 . . −24 43 20.2

O. ARG. S. 21490, $21^{h}\ 28^{m}\ 7^{s}$.

September 13 . . −15 10 31.9
23 . . 30.8

WEISSE XXI, 965, $21^{h}\ 41^{m}\ 6^{s}$.

September 14 . . −12 14 21.5
19 . . 17.3

(*), $21^{h}\ 41^{m}\ 10^{s}$.

September 16 . . −18 58 6.6

(*), $21^{h}\ 44^{m}\ 10^{s}$.

September 13 . . −35 38 27.4
14 . . 27.8
23 . . 29.5

WEISSE XXI, 1063, $21^{h}\ 45^{m}\ 49^{s}$.

September 26 . . − 5 58 24.5

(*), $21^{h}\ 47^{m}\ 28^{s}$.

September 16 . . −11 58 0.8

WEISSE XXI, 1139, $21^{h}\ 49^{m}\ 36^{s}$.

September 9 . . − 5 22 14.2
13 . . 17.8

O. ARG. S. 21759, $21^{h}\ 50^{m}\ 17^{s}$.

September 19 . . −21 44 6.5

O. ARG. S. 21760, $21^{h}\ 50^{m}\ 18^{s}$.

September 19 . . −21 45 43.6

LACAILLE 9052, $22^{h}\ 4^{m}\ 46^{s}$.

September 16 . . −40 50 31.9

(*), $22^{h}\ 23^{m}\ 24^{s}$.

September 26 . . + 6 34 26.4

LACAILLE 9172, $22^{h}\ 26^{m}\ 45^{s}$.

September 26 . . −32 48 41.2

σ^{1} GRUIS, $22^{h}\ 28^{m}\ 57^{s}$.

October 29 . . −41 15 10.0
November 1 . . 7.6

σ^{2} GRUIS, $22^{h}\ 29^{m}\ 28^{s}$.

October 29 . . −41 15 42.1
November 1 . . 42.4

(*), $22^{h}\ 35^{m}\ 36^{s}$.

° ′ ″
September 19 . . −21 37 24.8
26 . . 27.4

(*), $22^{h}\ 40^{m}\ 30^{s}$.

November 9 . . +57 53 41.5
18 . . 38.9

(*), $22^{h}\ 40^{m}\ 30^{s}$.

November 9 . . +57 56 35.2
18 . . 37.1

RUMKER 10641, $22^{h}\ 42^{m}\ 26^{s}$.

October 22 . . − 7 11 50.4

LACAILLE 9270, $22^{h}\ 42^{m}\ 48^{s}$.

October 24 . . −42 10 9.5

B. A. C. 7957, $22^{h}\ 43^{m}\ 41^{s}$.

October 29 . . −39 50 40.5
November 1 . . 42.6
3 . . 40.6

WEISSE (2) XXII, 1012, $22^{h}\ 44^{m}\ 7^{s}$.

October 25 . . +39 0 14.0
November 7 . . 9.6

O. ARG. S. 22450, $22^{h}\ 44^{m}\ 54^{s}$.

September 26 . . −24 42 60.8
November 4 . . 56.0

(*), $22^{h}\ 45^{m}\ 54^{s}$.

October 25 . . +39 1 30.8
November 7 . . 26.9

LACAILLE 9292, $22^{h}\ 46^{m}\ 11^{s}$.

October 29 . . −40 6 37.8
November 3 . . 38.6

LALANDE 44860, $22^{h}\ 50^{m}\ 11^{s}$.

September 21 . . −21 2 6.9
October 22 . . 11.3

LALANDE 44918, $22^{h}\ 51^{m}\ 37^{s}$.

November 1 . . +38 41 41.4

LALANDE 44922, $22^{h}\ 51^{m}\ 43^{s}$.

October 21 . . +38 36 51.7
31 . . 52.5

WEISSE XXII, 1087, $22^{h}\ 53^{m}\ 0^{s}$.

October 24 . . − 5 3 27.6

WEISSE XXII, 1088, $22^{h}\ 53^{m}\ 1^{s}$.

October 24 . . − 5 3 29.0

O. ARG. S. 22545, $22^{h}\ 53^{m}\ 27^{s}$.

September 26 . . −23 13 22.1

82 AQUARII, $22^{h}\ 55^{m}\ 49^{s}$.

° ′ ″
September 26 . . − 7 16 17.9

LACAILLE 9351, $22^{h}\ 56^{m}\ 26^{s}$.

October 29 . . −41 30 58.7
November 3 . . 61.9

(*), $22^{h}\ 57^{m}\ 53^{s}$.

October 25 . . − 6 11 5.4
November 7 . . 8.5

(*), $22^{h}\ 57^{m}\ 58^{s}$.

October 24 . . − 4 11 38.2

(*), $22^{h}\ 59^{m}\ 11^{s}$.

November 4 . . − 8 27 47.3

LALANDE 45323, $23^{h}\ 2^{m}\ 51^{s}$.

October 21 . . +38 12 46.1

(*), $23^{h}\ 13^{m}\ 45^{s}$.

October 21 . . −34 36 41.8

(*), $23^{h}\ 21^{m}\ 29^{s}$.

November 4 . . +54 29 8.1

(*), $23^{h}\ 22^{m}\ 42^{s}$.

October 24 . . − 4 18 39.8

11 PISCIUM, $23^{h}\ 22^{m}\ 47^{s}$.

September 26 . . − 2 30 16.8
November 24 . . 20.4

(*), $23^{h}\ 23^{m}\ 11^{s}$.

November 4 . . +54 25 14.8

LACAILLE 9597, $23^{h}\ 40^{m}\ 46^{s}$.

November 24 . . −38 52 41.3

WEISSE XXIII, 845, $23^{h}\ 42^{m}\ 3^{s}$.

September 26 . . + 0 17 4.7

ω PISCIUM, $23^{h}\ 52^{m}\ 40^{s}$.

November 29 . . + 6 8 38.7

(*), $23^{h}\ 56^{m}\ 27^{s}$.

October 8 . . −35 28 10.3
24 . . 9.6

WEISSE XXIII, 1183, $23^{h}\ 58^{m}\ 27^{s}$.

October 24 . . − 1 13 28.2
November 19 . . 29.0

RIGHT ASCENSIONS, NORTH POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS;

DEDUCED FROM

OBSERVATIONS WITH THE TRANSIT CIRCLE,

AND

COMPARED WITH THE TABLES.

1870.

RIGHT ASCENSIONS, NORTH POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS.

SUN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
Feb. 3	E.	II.	21 8 50.69	− 0.15	. . .	. .	N.	106 25 18.9	0.0		
4	F.	. .	. . . .	. .	. . .	. .	. .	106 7 23.1	− 1.2	16 17.5	+ 2.1
10	F.	. .	21 36 49.06	− 0.01	1 7.12	− 0.09	. .	104 14 23.0	+ 0.1	12.6	− 1.8
17	Ha.	. .	22 4 8.41	− 0.17	1 6.44	− 0.03	. .	101 51 55.7	− 1.3	11.6	− 1.4
19	F.	. .	22 11 50.40	− 0.16	1 6.26	− 0.01	. .	101 9 24.9	− 3.2	12.3	− 0.3
21	E.	. .	22 19 30.08	+ 0.16	1 6.02	− 0.06	. .	100 26 17.0	− 0.5	10.3	− 1.8
24	E.	. .	22 30 54.25	− 0.07	1 5.77	− 0.04	. .	100 20 20.0	− 0.2	9.8	− 1.6
25	F.	. .	22 34 41.25	− 0.04	1 5.69	− 0.02	. .	98 58 0.6	− 2.9	10.5	− 0.7
March 3	F.	. .	22 57 11.84	+ 0.05	1 5.23	− 0.03	. .	96 41 46.0	− 2.9	8.2	− 1.5
7	Ha.	I.	23 12 2.63	− 0.15	. . .	. .	. .	95 8 56.5	− 5.3	7.4	− 1.3
8	E.	. .	23 15 44.07	− 0.03	1 4.88	− 0.07	. .	94 45 38.3	− 0.8	6.7	− 1.8
9	F.	. .	23 19 25.43	+ 0.11	1 4.92	+ 0.02	. .	94 22 8.3	− 4.5	7.8	− 0.4
10	Ha.	. .	23 23 6.26	+ 0.08	1 4.78	− 0.07	. .	93 58 41.1	− 2.2	7.4	− 0.6
11	E.	. .	23 26 46.75	+ 0.06	1 4.77	− 0.03	. .	93 35 9.6	− 1.3	7.0	− 0.7
16	Ha.	. .	23 45 4.72	− 0.06	1 4.52	− 0.09	. .	91 36 54.9	− 5.5	5.5	− 0.9
18	F.	. .	23 52 22.38	0.00	1 4.59	+ 0.03	. .	90 49 36.0	− 1.0	4.4	− 1.4
19	Ha.	. .	23 56 1.10	+ 0.18	1 4.44	− 0.10	. .	90 25 54.1	− 1.2	4.2	− 1.4
22	Ha.	. .	0 7 55.82	− 0.03	1 4.44	− 0.04	. .	89 14 53.0	− 0.7	3.0	− 1.7
24	F.	. .	0 14 12.17	+ 0.08	1 4.54	+ 0.08	. .	88 27 38.9	− 0.3	3.8	− 0.4
25	Ha.	. .	0 17 50.21	+ 0.06	1 4.39	− 0.07	. .	88 4 3.9	− 1.0	3.4	− 0.5
30	F.	. .	0 36 0.80	+ 0.06	1 4.45	− 0.03	. .	86 6 58.2	+ 0.8	2.1	− 0.4
April 6	Ha.	. .	1 1 31.26	− 0.07	1 4.54	− 0.09	. .	83 26 8.6	+ 0.6	15 59.9	− 0.7
8	F.	. .	1 8 50.20	+ 0.11	1 4.69	0.00	. .	82 41 5.7	− 1.2	59.0	− 1.0
9	Ha.	. .	1 11 29.96	+ 0.15	1 4.78	+ 0.05	. .	82 18 47.3	− 0.1	58.2	− 1.6
12	Ha.	. .	1 23 30.49	− 0.02	1 4.73	− 0.12	. .	81 12 36.3	− 1.2	58.0	− 1.0
13	E.	. .	1 27 11.26	− 0.06	1 4.89	− 0.01	. .	80 50 52.2	+ 0.8	59.9	+ 1.2
23	F.	. .	2 4 20.12	+ 0.07	1 5.47	− 0.01	. .	77 22 24.3	− 1.7	56.2	+ 0.1
26	F.	. .	2 15 37.40	− 0.04	1 5.55	− 0.14	. .	76 23 39.2	− 0.6	54.7	− 0.6
30	Ha.	. .	2 30 47.94	+ 0.10	1 5.96	− 0.04	. .	75 8 26.2	+ 0.1	53.0	− 1.3
May 4	E.	. .	2 46 6.61	+ 0.14	1 6.30	− 0.02	. .	73 57 4.5	− 2.2	53.9	+ 0.5
6	Ha.	. .	. . . .	. .	. . .	. .	. .	73 23 2.0	+ 0.5	50.5	− 2.5
7	E.	. .	2 57 41.49	− 0.15	1 6.52	− 0.04	. .	73 6 24.2	+ 0.6	54.6	+ 1.8
9	Ha.	. .	3 5 27.76	+ 0.08	1 6.60	− 0.13	. .	72 33 58.3	− 0.8	51.6	− 0.8
12	Ha.	. .	3 17 11.06	+ 0.14	1 6.92	− 0.06	. .	71 47 35.0	+ 0.4	48.8	− 2.9
13	E.	. .	. . . .	. .	. . .	. .	. .	71 32 41.9	− 0.8	52.7	+ 1.2
14	F.	. .	3 25 2.64	+ 0.06	1 7.12	− 0.02	N.	71 18 11.5	+ 2.0		
17	F.	. .	3 36 54.34	− 0.02	1 7.36	− 0.02	. .	70 36 26.0	+ 1.5	50.8	0.0
19	E.	. .	3 44 51.82	+ 0.08	1 7.51	− 0.03	. .	70 10 11.3	− 1.0	50.3	− 0.1
20	F.	. .	3 48 51.48	+ 0.21	1 7.60	− 0.02	. .	69 57 37.1	+ 0.7	50.6	+ 0.4
21	Ha.	. .	3 52 51.51	+ 0.14	1 7.60	− 0.10	. .				
25	E.	. .	4 8 57.39	+ 0.15	1 7.97	− 0.01	. .	68 59 45.3	− 2.3	45.7	− 3.6
June 7	E.	. .	5 2 7.41	+ 0.24	1 8.66	− 0.06	. .	67 12 45.2	+ 2.5	44.9	− 3.3
8	F.	. .	5 6 15.04	+ 0.05	1 8.68	− 0.08	. .	67 7 13.5	+ 1.3	47.5	0.0
11	S.	. .	5 18 40.12	+ 0.23	1 8.81	− 0.05	N.	66 52 41.2?	−25.3?		
17	F.	. .	5 43 34.48	+ 0.02	1 8.92	− 0.05					
18	S.	. .	5 47 43.99	+ 0.04	1 8.89	− 0.09	. .	66 34 30.2	− 0.1	45.8	− 0.8
20	F.	. .	5 56 3.04	− 0.07	1 8.98	0.00	. .	66 32 53.7	0.0	44.8	− 1.7
21	S.	. .	6 0 12.77	+ 0.04	1 8.86	− 0.12	. .	66 32 43.5	+ 0.9	45.9	− 0.5
22	E.	. .	6 4 22.30	− 0.04	1 9.07	+ 0.09	. .	66 32 55.3	− 1.0	47.9	+ 1.5
23	F.	. .	6 8 31.94	+ 0.03	1 8.90	− 0.07	S.	66 33 35.4	+ 0.6		
24	S.	. .	6 12 41.45	+ 0.02	1 8.89	− 0.07	. .	66 34 37.0	− 1.0	45.9	− 0.4
25	E.	. .	6 16 50.87	+ 0.01	1 8.89	− 0.05	. .	66 36 5.3	− 0.6	46.4	+ 0.1
27	S.	. .	6 25 9.28	− 0.08	1 8.90	0.00	N.	66 40 17.1	+ 1.2		
28	E.	. .	6 29 18.26	− 0.13	1 8.80	− 0.07	. .	66 42 57.5	− 0.3	46.1	− 0.1
29	F.	. .	6 33 27.17	− 0.04	1 8.81	− 0.03	. .	66 46 4.4	+ 0.2	46.4	+ 0.2
30	S.	. .	6 37 35.86	+ 0.05	1 8.66	+ 0.05	N.	66 49 35.1	0.0		

SUN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
July 1	F.	. .	6 41 44.22	+ 0.05	1 8.72	− 0.06	. .	66 53 30.2	− 0.1	15 46.6	+ 0.4
8	F.	. .	7 10 33.96	+ 0.10	1 8.40	− 0.06	. .	67 32 8.4	− 0.9	44.6	+ 0.3
9	S.	. .	7 14 39.44	− 0.01	1 8.36	− 0.04	. .	69 39 12.9	− 2.1	43.1	− 2.8
13	F.	. .	7 30 57.48	+ 0.07	1 8.14	− 0.01	. .	68 11 28.7	+ 1.6	45.7	− 0.8
14	E.	. .	7 35 0.71	− 0.03	1 8.10	+ 0.02	. .	68 20 27.8	+ 1.3	46.6	+ 0.1
15	S.	. .	7 39 3.51	− 0.07	1 7.90	− 0.13	. .	68 29 48.5	+ 0.4	45.2	− 1.4
16	E.	II.	7 43 6.11	− 0.18	. . .	. .	S.	68 39 31.2	− 0.5		
19	E.	. .	7 55 10.04	+ 0.10	1 7.68	− 0.03	. .	69 10 52.0	− 0.2	45.5	− 1.3
20	E.	. .	. . . .	. .	. . .	. .	S.	69 22 1.8	+ 0.4		
21	S.	. .	8 3 9.98	− 0.02	1 7.52	− 0.03	. .	69 33 30.0	− 1.5	45.0	− 2.0
22	E.	. .	. . . .	. .	. . .	. .	. .	69 45 22.4	+ 0.3	47.5	+ 0.5
23	F.	. .	8 11 7.85	0.00	1 7.32	− 0.07	. .	69 57 33.8	+ 0.6	44.7	− 2.4
25	E.	. .	. . . .	. .	. . .	. .	. .	70 23 0.4	+ 4.8	46.2	− 1.3
26	F.	. .	8 23 0.35	− 0.02	1 7.11	− 0.04	. .	70 36 6.5	+ 0.2	47.5	+ 0.1
28	E.	. .	8 30 52.45	+ 0.01	1 6.92	− 0.06	. .	71 3 26.6	+ 1.2	46.6	− 1.0
30	F.	II.	8 38 42.06	+ 0.03							
Aug. 1	Ha.	I.	8 46 29.38	+ 0.09	. . .	. .	S.	72 1 46.8	+ 0.5		
2	E.	. .	8 50 21.99	+ 0.04	1 6.46	− 0.08	. .	72 17 6.7	+ 0.5	48.0	− 0.2
3	F.	. .	8 54 13.96	− 0.03	1 6.41	− 0.04	. .	72 32 44.1	+ 0.6	47.6	− 0.8
4	S.	. .	8 58 5.38	− 0.02	1 6.19	− 0.18	S.	72 48 36.9	− 0.8		
5	Ha.	. .	9 1 56.22	+ 0.03	1 6.18	− 0.10	. .	73 4 49.7	+ 1.1	45.9	− 2.8
6	E.	. .	9 5 46.48	+ 0.10	1 6.14	− 0.06	. .	73 21 16.3	+ 0.5	48.2	− 0.6
8	S.	. .	9 13 24.90	− 0.01	1 5.96	− 0.07	. .	73 54 58.5	+ 0.4	49.1	0.0
9	Ha.	. .	9 17 13.20	− 0.08	1 5.86	− 0.08	. .	74 12 14.5	+ 1.8	47.8	− 1.5

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to Tables of—		Limb.	Geocentric North Polar Distance of Center.	Correction to Tables of—	
					Peirce.	Hansen.			Peirce.	Hansen.
1870.	h. m. s.			h. m. s.	s.	s.		° ′ ″	″	″
Feb. 9	6 55 33.0	E.	I.	4 15 1.91	− 0.55	− 0.41	S.	73 1 1.2	− 4.0	− 3.6
10	7 44 38.3	F.	I.	5 8 12.82	− 0.04	+ 0.07	S.	70 30 21.9	+ 3.3	+ 3.6
12	9 31 44.1	E.	I.	7 3 28.32	− 0.06	− 0.09	N.	68 35 12.3	+ 0.5	+ 0.3
13	10 28 27.2	F.	I.	8 4 17.61	− 0.08	− 0.20	N.	69 33 30.2	− 1.2	− 1.0
16	13 18 1.9	F.	II.	11 6 9.62	+ 0.20	− 0.34	N.	80 11 41.5	+ 1.9	+ 2.4
20	16 50 40.5	Ha.	II.	14 55 9.33	+ 0.15	− 0.73	S.	101 31 10.1	− 2.2	− 6.1
21	17 44 12.8	E.	II.	15 42 46.98	+ 0.13	− 0.70				
March 7	4 4 21.7	Ha.	I.	3 5 52.92	− 0.25	− 0.22				
9	5 35 57.4	F.	I.	4 45 36.70	− 0.24	− 0.27	S.	71 16 19.4	− 3.8	− 2.5
10	6 25 36.5	Ha.	I.	5 39 20.59	0.00	− 0.11	S.	69 19 57.4	− 0.2	+ 1.2
11	7 17 54.8	E.	I.	6 35 43.99	+ 0.17	− 0.21	N.	68 26 25.2	− 2.6	− 1.4
16	11 56 5.9	Ha.	I.	11 34 23.59	+ 0.21	− 0.20	N.	82 43 46.1	+ 0.4	+ 0.1
18	13 45 22.2	F.	II.	13 31 50.94	+ 0.39	− 0.35	N.	94 10 44.5	− 0.1	− 2.1
19	14 40 9.7	Ha.	II.	14 30 43.97	+ 0.28	− 0.56	S.	99 38 32.1	− 0.8	− 4.1
23	18 23 57.1	E.	II.	18 30 54.37	+ 0.15	− 0.69				
24	19 18 25.8	F.	II.	19 29 28.58	+ 0.08	− 0.66				
April 8	6 2 24.7	F.	I.	7 10 24.93	− 0.49	− 0.31				
12	9 39 14.3	Ha.	I.	11 3 36.37	+ 0 25	− 0.21	N.	79 51 17.1	+ 0.1	− 2.1
22	18 57 30.2	E.	II.	21 2 49.57	− 0.04	− 0.66	N.	108 38 19.4?	+ 12.0?	+ 11.6?
23	19 45 47.8	F.	II.	21 55 10.66	− 0.08	− 0.64				
25	21 14 27.8	F.	II.	23 31 59.29	+ 0.25	− 0.45				
May 4	3 6 27.1	E.	I.	5 56 28.89	+ 0.13	+ 0.05				
8	6 36 1.6	F.	I.	9 42 24.01	− 0.18	− 0.08	N.	73 26 50.4	− 0.9	+ 1.5
9	7 28 24.7	Ha.	I.	10 38 52.21	− 0.02	− 0.12	N.	77 32 50.2	− 1.1	− 0.7
11	9 12 55.3	F.	I.	12 31 33.21	− 0.13	− 0.42	N.	83 3 53.5	+ 4.3	+ 3.6
12	10 6 13.7	Ha.	I.	13 28 56.89	0.00	− 0.20	N.	93 52 0.9	− 1.1	− 1.7
14	11 58 12.5	F.	I.	15 29 7.24	+ 0.01	− 0.25	N.	104 32 15.0	+ 2.4	+ 0.3
15	12 57 15.0	Ha.	II.	16 32 15.93	− 0.03	− 0.46	N.	108 30 55.5	+ 3.6	− 0.5
16	13 57 27.6	E.	II.	17 36 34.95	+ 0.28	− 0.33	N.	111 6 14.9	+ 4.8	− 0.3
June 7	7 5 12.5	E.	I.	12 9 56.42	+ 0.07	− 0.12	N.	85 42 48.8	− 3.0	− 3.0
8	7 56 4.5	F.	I.	13 4 53.28	− 0.02	− 0.15	N.	91 17 37.1	+ 0.8	+ 0.7
10	9 42 32.4	E.	.	. . . .	. .	. .	N.	102 9 48.0	+ 1.6	+ 1.6
11	10 39 23.4	S.	I.	16 0 28.71	− 0.23	− 0.44	N.	106 39 41.5	− 0.6	− 1.3
14	13 38 57.2	F.	II.	19 12 21.69	− 0.03	− 0.49	N.	112 10 27.6	+ 5.7	+ 1.6
17	16 20 52.4	F.	II.	22 6 33.19	+ 0.02	− 0.53	N.	105 10 23.8	+ 4.0	+ 1.9
18	17 7 33.3	S.	II.	22 57 18.12	− 0.32	− 0.74				
19	17 51 28.0	E.	II.	23 45 16.77	− 0.26	− 0.60	N.	96 45 56.0?	+ 9.1?	+ 7.9?
20	18 33 33.0	F.	II.	0 31 25.24	− 0.08	− 0.39	N.	92 10 32.5	+ 4.5	+ 3.8
22	19 56 4.6	E.	II.	2 2 3.45	− 0.31	− 0.63	N.	83 3 19.9	+ 3.8	+ 2.9
July 5	5 52 15.4	F.	I.	12 47 10.90	+ 0.13	− 0.05	N.	89 23 58.0	+ 4.5	+ 3.4
8	8 28 15.5	F.	I.	15 35 26.33	+ 0.23	− 0.40	N.	104 54 28.1	+ 1.5	+ 0.8
9	9 24 45.3	S.	I.	16 36 1.96	− 0.15	− 0.32	N.	108 40 58.4	− 0.2	− 1.4
11	11 22 49.5	F.	I.	18 42 18.72	+ 0.03	− 0.39	N.	112 13 49.2	− 5.4	− 7.3
13	13 17 31.3	F.	II.	20 45 13.45	+ 0.27	− 0.28	N.	109 51 23.6	+ 4.4	+ 2.2
14	14 10 11.3	E.	II.	21 41 57.60	+ 0.05	− 0.51	N.	106 51 22.2	+ 3.3	+ 1.2
15	14 59 12.1	S.	II.	22 35 3.11	− 0.22	− 0.88				
16	15 45 2.2	E.	II.	23 24 57.30	− 0.02	− 0.58	N.	98 43 26.5	+ 4.7	+ 4.5
19	17 51 49.4	E.	II.	1 43 54.95	− 0.33	− 0.65	N.	84 51 6.5	+ 1.9	+ 2.6
August 4	6 23 27.6	S.	I.	15 16 44.98	− 0.21	− 0.20	N.	103 32 23.6	+ 1.3	− 1.7
5	7 17 55.2	Ha.	I.	16 15 18.02	− 0.57	− 0.45	N.	107 34 28.3	+ 4.5	+ 1.8
6	8 14 22.5	E.	I.	17 51 51.21	− 0.66	− 0.62	N.	110 28 55.0	+ 0.7	− 1.9
8	10 9 53.5	S.	I.	19 19 35.27	+ 0.23	− 0.15	S.	112 7 40.4	+ 2.3	+ 0.3
12	13 37 30.4	S.	II.	23 3 31.51	− 0.21	− 0.36				

MERCURY.

Date.	Observer.	Part observed.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Part observed.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Feb. 18	F.	.	. . . .	. .	. .	. .	.	107 21 53.2	− 3.0		
March 2	F.	C.	21 14 42.14	+ 0.45	. .	. .	.	106 45 5.2	− 4.3		
7	E.	C.	21 39 24.38	+ 0.63	. .	. .	.	105 29 19.4	− 2.5		
8	F.	II.	21 48 38.00	+ 0.25	. .	. .	.	105 10 4.0	− 3.6		
9	Ha.	C.	21 49 56.85	+ 0.19	. .	. .	.	104 49 31.8	− 1.3		
17	F.	II.	22 35 55.55	+ 0.28	. .	. .	.	101 18 0.0	− 1.7		
18	Ha.	C.	22 40 48.73	+ 0.21	. .	. .	.	100 45 50.2	− 1.9		
21	Ha.	C.	22 58 47.83	+ 0.22	. .	. .	.	99 1 58.2	− 1.5		
23	F.	II.	23 11 3.42	+ 0.32	. .	. .	.	97 46 41.0	− 0.7		
24	Ha.	C.	23 17 15.97	+ 0.31	. .	. .	.	97 7 15.3	− 0.7		
April 5	Ha.	C.	0 36 44.68	+ 0.06	. .	. .	.	87 48 51.3	+ 2.1		
26	F.	.	. . . .	. .	. .	. .	.	70 35 33.0	+ 2.5		
30	Ha.	I.	3 39 52.02	− 0.03	. .	. .	.	68 17 17.6	+ 1.0		
May 16	E.	I.	4 58 56.36	− 0.19							
June 19	F.	II.	4 36 42.95	− 0.14							
20	S.	II.	4 38 5.08	− 0.21							
21	E.	II.	4 39 46.21	− 0.23	. .	. .	.	71 56 57.0	− 0.2		
23	S.	II.	4 44 5.47	− 0.22							
24	E.	II.	4 46 43.45	− 0.08	. .	. .	N.	71 22 24.2	− 0.2		
27	E.	II.	4 55 29.97	− 0.20	. .	. .	N.	70 38 5.3	− 1.1		
28	F.	II.	5 0 23.04	− 0.11	. .	. .	N.	70 21 46.5	− 0.5		
July 8	S.	II.	5 56 9.15	− 0.06	. .	. .	.	67 35 39.3	+ 1.3		
13	E.	II.	6 34 52.37	− 0.12	. .	. .	S.	66 47 8.2	− 4.1		
14	S.	II.	6 43 19.21	− 0.15	. .	. .	.	66 43 25.4	− 1.2		
August 3	F.	I.	9 28 36.72	− 0.02	. .	. .	.	73 16 21.5	− 0.5		
6	E.	I.	9 50 55.76	− 0.06	. .	. .					

VENUS.

Date.	Observer.	Part obs'd.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Sid. Time of Transit of Semi-diam.	Corr'n to Am. Eph.	Part obs'd.	Geocentric N.P. Distance of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	s.	s.	s.		° ′ ″	″	″	″	″
Feb. 3	E.	I.	22 48 34.25	− 0.08	− 0.04	. .	. .	S.	91 36 51.9	− 7.1	− 3.0		
Mar. 8	F.	II.	21 49 31.91	+ 0.15	+ 0.25	. .	. .	.	94 51 6.4	− 3.5	− 1.4	24.7	− 3.2
9	Ha.	II.	21 48 47.26	+ 0.19	+ 0.25	. .	. .	.	95 4 47.5	+ 1.0	− 0.4	26.6	− 0.9
10	E.	II.	21 48 12.14	+ 0.20	+ 0.22	. .	. .	.	95 17 59.4	+ 1.1	− 0.3	26.6	− 0.5
14	F.	.	. . . .	. .	. .	. .	. .	.	96 5 41.6	+ 0.3	− 1.1	24.6	− 0.9
17	F.	II.	21 48 32.39	+ 0.10	+ 0.20	. .	. .	.	96 35 11.0	+ 1.4	− 1.5	24.4	− 0.1
18	Ha.	II.	21 49 12.04	+ 0.16	+ 0.24	. .	. .	.	96 43 39.5	+ 0.9	− 1.9	23.6	− 0.5
21	Ha.	II.	21 52 1.52	+ 0.13	+ 0.25	. .	. .	.	97 4 54.7	+ 3.6	− 0.6	23.1	+ 0.2
24	Ha.	II.	21 56 1.80	+ 0.14	+ 0.21	. .	. .	.	97 19 36.6	+ 3.6	− 0.6	23.6	+ 1.6
Apr. 6	E.	II.	22 23 55.36	+ 0.19	+ 0.14	. .	. .	N.	97 9 4.1	+ 4.9	+ 0.1		
12	E.	II.	22 41 17.31	+ 0.26	+ 0.15	. .	. .	N.	96 26 38.4	+ 2.3	− 1.8		
25	F.	.	. . . .	. .	. .	. .	. .	N.	93 47 8.3	− 1.8	− 5.5		
May 5	Ha.	.	. . . .	. .	. .	. .	. .	N.	90 55 18.8	+ 3.6	+ 0.8		
6	E.	II.	0 4 11.73	+ 0.04	− 0.03	. .	. .	N.	90 36 19.3	+ 3.3	+ 0.5		
12	E.	.	. . . .	. .	. .	. .	. .	N.	88 37 0.5	+ 0.3	− 2.7		
15	E.	II.	0 38 37.51	+ 0.27	+ 0.20	. .	. .	N.	87 34 30.9	+ 2.9	+ 0.2		
16	F.	II.	0 42 31.76	+ 0.17	+ 0.10	. .	. .	N.	87 13 19.1	+ 2.9	+ 0.3		
June 6	E.	II.	2 8 9.06	+ 0.27	+ 0.20	. .	. .	N.	79 31 29.0	+ 0.4	− 0.4		
7	F.	II.	2 12 24.31	+ 0.18	+ 0.08	. .	. .	N.	79 9 45.1	+ 0.5	− 0.7		
16	F.	II.	2 51 31.93	− 0.08	− 0.10	. .	. .	N.	76 0 51.3	+ 1.5	+ 1.2		
17	S.	.	. . . .	. .	. .	. .	. .	.	75 40 49.2	+ 1.1	+ 0.8	7.6	− 0.5
19	F.	II.	3 4 55.54	− 0.14	− 0.15	. .	. .	N.	75 1 27.8	0.0	− 0.5		
20	S.	II.	3 9 25.92	− 0.08	− 0.08	. .	. .	.	74 42 10.8	0.0	− 0.2	9.5	+ 1.5
21	E.	II.	3 13 57.51	− 0.02	− 0.02	. .	. .	.	74 23 9.4	− 0.7	− 1.2	7.7	− 0.3
22	F.	II.	3 18 30.24	− 0.04	− 0.05	. .	. .	.	74 4 26.9	+ 0.4	+ 0.2	7.7	− 0.2
23	S.	II.	3 23 4.28	+ 0.02	+ 0.02	. .	. .	.	73 45 59.7	− 0.3	− 0.5	8.1	+ 0.3
24	E.	II.	3 27 39.55	+ 0.08	+ 0.08	. .	. .	.	73 27 52.9	− 1.2	− 1.2	8.1	+ 0.3
26	S.	II.	3 36 53.49	− 0.08	− 0.08	. .	. .	.	72 52 37.9	− 1.1	− 0.9	9.5	+ 1.8
28	F.	II.	3 46 12.46	− 0.07	− 0.09	. .	. .	.	72 18 45.6	− 1.3	− 1.0	7.8	+ 0.2
29	S.	II.	3 50 53.92	+ 0.09	+ 0.06								
30	E.	II.	3 55 36.29	− 0.05	− 0.10	. .	. .	.	71 46 23.7	+ 0.2	+ 0.8	7.1	− 0.4
July 7	F.	II.	4 29 6.87	− 0.16	− 0.17	. .	. .	N.	70 5 54.4	− 4.0	− 2.9		
8	S.	II.	4 33 58.80	− 0.07	− 0.07	. .	. .	.	69 53 23.1	− 1.8	− 0.5	7.7	+ 0.5
10	F.	II.	4 43 45.84	0.00	− 0.02	. .	. .	.	69 29 44.6	+ 0.2	+ 1.3	6.6	− 1.5
11	S.	II.	4 48 40.86	− 0.09	− 0.13	. .	. .	.	69 18 38.4	− 0.1	+ 0.8	7.6	− 0.5
12	F.	II.	4 53 36.97	− 0.13	− 0.16	. .	. .	.	69 8 2.7	− 0.3	+ 0.9	7.7	+ 0.7
13	E.	II.	4 58 34.23	− 0.05	− 0.08	. .	. .	N.	68 57 56.9	− 1.5	− 0.3		
15	E.	II.	5 9 31.72	+ 0.11	+ 0.08	. .	. .	N.	68 39 22.3	− 1.9	− 0.6		
17	S.	II.	5 18 32.75	+ 0.04	+ 0.01	. .	. .	.	68 22 57.6	− 2.4	− 0.8	6.3	− 0.5
20	S.	II.	5 33 40.82	+ 0.02	+ 0.02	. .	. .	.	68 2 33.4	− 1.7	− 0.2	6.8	+ 0.1
21	E.	II.	5 38 45.03	− 0.02	− 0.01	. .	. .	N.	67 56 55.1	− 0.6	+ 0.8		
27	E.	II.	6 9 23.80	+ 0.02	− 0.05	. .	. .	.	67 35 27.7	− 1.7	− 0.7	6.3	− 0.2
Aug. 1	E.	II.	6 35 8.15	+ 0.10	+ 0.04	. .	. .	.	67 34 29.4	− 0.8	+ 1.2	6.0	− 0.4
2	F.	II.	6 40 17.65	+ 0.04	− 0.02	. .	. .	.	67 36 8.6	− 2.5	− 0.5	6.7	+ 0.4
4	Ha.	II.	6 50 37.02	− 0.02	− 0.08	. .	. .	.	67 41 23.1	− 3.0	− 1.0	6.0	− 0.3
5	E.	II.	6 55 47.02	+ 0.20	+ 0.14	. .	. .	.	67 44 58.1	− 2.4	− 0.4	6.8	+ 0.6
7	S.	.	. . . .	. .	. .	. .	. .	.	67 54 0.7	− 2.3	− 0.3	6.7	+ 0.5
11	S.	II.	7 26 43.38	− 0.06	− 0.12	. .	. .	.	68 19 38.9	− 1.7	+ 0.6	6.2	+ 0.1

SATURN.

Date.		Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1870.				h. m. s.	s.	s.	s.		° ′ ″	″	″	″
May	16	E.	. .	17 48 26.12	− 0.77	0.70	+ 0.04	. .	112 8 6.9	− 11.5	9.8	+ 1.4
June	14	F.	. .	17 39 57.34	− 0.57	0.54	− 0.13	. .	112 5 58.7	− 9.6	10.1	+ 1.5
	17	F.	. .	. . . .	. .	. .	. .	. .	112 5 42.6	− 11.2	9.9	+ 1.3
	18	S.	I.	17 38 40.93	− 0.67							
	20	F.	R.	17 38 2.86	− 0.66	1.42	. .	. .	112 5 29.5	− 9.9	10.9	+ 2.3
	21	S.	. .	17 37 43.93	− 0.62	0.59	− 0.08	. .	112 5 23.8	− 10.8	10.7	+ 2.1
	23	F.	. .	17 37 6.19	− 0.59	0.72	+ 0.05	. .	112 5 15.7	− 9.5	8.5	− 0.1
	24	S.	. .	17 36 47.36	− 0.63	0.64	− 0.03	. .	112 5 11.6	− 8.9	11.0	+ 2.4
	25	E.	. .	17 36 28.42	− 0.86	0.68	+ 0.02	. .	112 5 7.9	− 7.9	9.7	+ 1.1
	30	S.	. .	17 34 56.54	− 0.72	0.62	− 0.04	. .	112 4 45.0	− 8.7	10.9	+ 2.3
July	8	F.	. .	17 32 37.20	− 0.43	0.52	− 0.14	. .	112 4 14.3	− 9.0	11.2	+ 2.6
	9	S.	. .	17 32 20.18	− 0.83	0.59	− 0.07	. .	112 4 12.7	− 7.4	12.4	+ 3.8
	11	F.	. .	17 31 47.73	− 0.69	0.63	− 0.03	. .	112 4 5.9	− 8.4	9.7	+ 1.1
	14	E.	. .	17 31 0.48	− 0.78	0.62	− 0.04	. .				
	18	S.	. .	17 30 1.24	− 0.67	0.65	0.00	S.	112 3 52.6	− 6.4	10.1	+ 1.6
	19	E.	. .	17 29 46.95	− 0.78	0.68	+ 0.03	. .	112 3 49.7	− 8.0	10.1	+ 1.6
	21	S.	. .	17 29 19.72	− 0.51	0.62	− 0.03	. .	112 3 47.2	− 8.7	10.6	+ 2.1
	23	F.	. .	17 28 53.30	− 0.64	0.66	+ 0.01	. .	112 3 45.9	− 9.0	10.5	+ 2.0
	30	F.	. .	17 27 31.36	− 0.61	0.67	+ 0.02	. .	112 3 50.5	− 9.0	9.7	+ 1.3
Aug.	6	E.	. .	17 26 26.32	− 0.78	0.70	+ 0.06	. .	112 4 9.9	− 9.0	10.7	+ 2.4
	15	Ha.	. .	17 25 30.32	− 0.60	0.66	+ 0.03	N.	112 4 59.1	− 8.3		

URANUS.

Date.		Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
Feb.	16	F.	. .	7 20 20.09	+ 1.56	. .	. .	. .	67 20 20.2	+ 13.8	1.6	− 0.2
	25	F.	. .	. . . .	. .	. .	. .	. .	67 18 25.7	+ 13.1		
March	2	E.	. .	7 18 48.48	+ 1.38	. .	. .	. .	67 17 35.8	+ 12.6		
	3	F.	. .	7 18 43.60	+ 1.57	0.14	+ 0.03	. .	67 17 27.0	+ 12.4		
	5	E.	. .	7 18 33.98	+ 1.46	0.20	+ 0.09	. .	67 17 12.2	+ 13.7		
	11	E.	. .	7 18 10.50	+ 1.37	0.14	+ 0.03	. .	67 16 34.2	+ 13.9		
	18	F.	. .	7 17 53.28	+ 1.38	0.11	0.00	. .	67 16 7.2	+ 12.0		
	25	Ha.	. .	7 17 47.10	+ 1.34	. .	. .	. .	67 16 5.3	+ 14.0		

SMALL PLANETS.

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
HEBE, ⑥.								
1870.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
July 23	F.	12 33.9	18 26.1	20 40 52.97	+ 2.25	101 44 22.2	+ 22.1	
August 3	F.	11 41.2	17 33.6	20 31 22.74	+ 2.34	103 58 21.8	+ 23.5	
EGERIA, ⑬.								
August 3	F.	13 37.5	19 29.9	. . . . .	. .	126 38 52.5	+ 7.0	
MASSALIA, ⑳.								
July 23	F.	11 1.0	16 48.3	19 7 40.94	+ 7.61	111 27 51.1	− 5.2	
THEMIS, ㉔.								
March 21	F.	13 1.2	18 47.5	. . . .	. .	95 46 25.2	+ 10.0	
24	F.	12 47.2	18 33.5	12 57 9.23	+ 0.25	95 33 38.0	+ 3.7	
EUTERPE, ㉗.								
July 8	F.	11 39.3	17 26.8	18 46 57.56	+ 1.41	113 25 14.3	+ 3.6	
23	F.	10 25.6	16 12.8	18 32 14.89	+ 1.22	103 58 4.6	+ 9.6	
PANDORA, (55).								
March 21	F.	12 53.8	18 37.5	12 52 53.34	− 0.23	95 32 42.7	− 4.9	
CONCORDIA, (58).								
August 3	F.	11 33.2	17 20.5	20 23 21.05	− 0.11	104 47 21.5	+ 3.0	
DANAË, (61).								
July 30	F.	11 48.9	17 37.4	20 23 30.27	+ 9.35			

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

MOON AND PLANETS

DEDUCED FROM OBSERVATIONS WITH THE

TRANSIT INSTRUMENT AND MURAL CIRCLE,

AND

COMPARED WITH THE TABLES.

1870.

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

MOON AND PLANETS.

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to tables of— Peirce.	Correction to tables of— Hansen.	Observer.	Limb.	Geocentric Declination of Center.	Correction to tables of— Peirce.	Correction to tables of— Hansen.
1870.	h. m. s.			h. m. s.	s.	s.			° ′ ″	″	″
Sept. 3	7 6 47.2	Y.	I.	17 58 28.33	− 0.13	− 0.42					
5	8 59 37.8	Sk.	I.	19 59 29.58	− 0.32	− 0.58					
Oct. 4	8 40 59.7	Sk.	I.	21 35 9.46	− 0.20	− 0.50	F.	S.	− 17 25 59.5	− 2.8	− 1.6
5	9 29 0.8	Sk.	I.	22 27 14.98	− 0.33	− 0.52	F.	S.	− 13 43 10.0	− 0.1	+ 1.9
8	11 39 55.1	S.	I.	0 50 20.42	− 0.40	− 0.44	F.	S.	− 0 0 28.4	− 4.0	− 0.5
13	15 16 23.7	Sk.	II.	4 47 7.15	− 0.21	− 0.43					
18	19 30 4.2	S.	II.	9 21 12.29	− 0.45	− 0.50	F.	S.	+ 18 25 5.7	− 4.9	− 4.7
28	3 49 46.7	Y.	I.	18 17 45.90	− 0.98	− 0.39					
31	6 38 16.9	Sk.	I.	21 18 33.43	− 0.54	− 0.54	F.	S.	− 18 40 18.9	− 2.4	− 1.3
Nov. 1	7 27 29.3	S.	I.	22 11 50.42	− 0.41	− 0.52	Y.	S.	− 15 8 34.9	− 4.3	− 3.6
2	. . .	.	.	. . . .	. .	. .	F.	S.	− 10 58 33.0	− 2.4	− 1.1
3	8 57 6.7	S.	I.	23 49 35.69	− 0.38	− 0.50	Y.	S.	− 6 24 32.8	− 5 3	− 3.3
4	9 39 9.3	Sk.	I.	0 35 41.71	− 0.24	− 0.41	F.	S.	− 1 38 31.4	− 2.2	+ 0.4
5	. . .	.	.	. . . .	. .	. .	Y.	S.	+ 3 8 34.5	− 4.1	− 1.7
7	11 44 13.9	S.	I.	2 52 56.53	− 0.27	− 0.49	F.	S., N.	+ 12 5 53.1	− 1.4	− 0.2
8	12 27 55.2	Sk.	II.	3 40 41.62	− 0.42	− 0.60	Y.	N.	+ 15 55 34.5	− 2.4	− 1.9
9	13 13 25.1	S.	II.	4 30 15.48	− 0.47	− 0.57	F.	N.	+ 19 5 21.6	− 3.3	− 3.6
10	. . .	.	.	. . . .	. .	. .	Y.	N.	+ 21 24 40.0	− 6.2	− 7.4
16	19 3 38.3	Sk.	II.	10 49 2.11	+ 0.11	− 0.30					
26	3 33 47.9	Sk,	I.	19 56 4.53	− 0.62	− 0.32					
28	5 22 31.9	F.	I.	21 52 59.56	− 0.75	− 0.37					
29	6 10 42.2	Sk.	I.	22 45 14.31	− 0.82	− 0.53	Y.	S.	− 12 39 53.7	− 7.6	− 4.5
Dec. 1	7 38 18.2	Sk.	I.	0 20 57.83	− 0.38	− 0.26	Y.	S.	− 3 21 58.6	− 3.0	− 0.8
2	8 19 44.1	F,	I.	1 6 27.03	− 0.34	− 0.31					
6	11 10 36.4	Sk.	I.	4 13 33.70	+ 0.07	− 0.29	Y.	S., N.	+ 18 7 30.6	− 0.8	− 1.0
7	11 57 37.8	S.	I., II.	5 4 39.37	− 0.16	− 0.44	Y.	S., N.	+ 20 47 21.0	+ 1.0	+ 0.2
8	. . .	.	.	. . . .	. .	. .	F.	S., N.	+ 22 49 41.8	+ 2.1	+ 0.6
9	13 37 11.0	S.	II.	6 52 22.04	− 0.06	− 0.24	Y.	N.	+ 23 5 55.8	+ 5.7	+ 3.6
12	16 9 52.4	Sk.	II.	9 37 18.11	+ 0.16	− 0.39	F.	S.	+ 17 50 30.2	+ 3.4	+ 3.0
16	19 25 41.3	Sk.	II.	13 9 25.36	+ 0.52	− 0.30					
29	. . .	.	.	. . . .	. .	. .	Y.	S.	− 0 24 15.4	+ 6.2	+ 7.7

JUPITER.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	s.	s.			° ′ ″	″	″	″
Nov. 10	.	.	. . . .	. .	. .	. .	Y.	.	+ 22 49 12.3	− 6.1	25.3	+ 3.3
Dec. 7	.	.	. . . .	. .	. .	. .	Y.	.	+ 22 43 52.8	− 2.4	25.0	+ 2.2
8	.	.	. . . .	. .	. .	. .	F.	.	+ 22 42 31.0	− 3.1	25.8	+ 3.0
9	Y.	.	5 24 36.20	+ 1.03	1.76	+ 0.01						
16	.	.	. . . .	. .	. .	. .	F.	.	+ 22 39 26.8	− 3.6	26.5	+ 3.7
21	.	.	. . . .	. .	. .	. .	F.	.	+ 22 37 22.2	− 4.2	26.3	+ 3.5

URANUS.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
1870.			h. m. s.	s.	s.	s.			° ′ ″	″	″	″
Jan. 21	Y.	.	7 24 28.14	+ 1.65	. .	. .	F.	.	+ 21 31 40.1	− 13.2		
25	Y.	.	7 23 45.62	+ 1.83	. .	. .	F.	.	+ 22 33 6.5	− 12.6		

NEPTUNE.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
Oct. 8	S.	.	1 18 30.05	+ 0.05	. .	. .	F.	.	+ 6 25 24.5	+ 3.9		
22	.	.	. . . .	. .	. .	. .	F.	.	+ 6 16 35.9	+ 1.2		
24	S.	.	1 16 50.82	+ 0.03	. .	. .	F.	.	+ 6 15 22.8	+ 1.0		
25	S.	.	1 16 44.69	− 0.01								
31	S.	.	1 17 8.88	+ 0.02	. .	. .	F.	.	+ 6 11 16.2	+ 2.5		
Nov. 1	.	.	. . . .	. .	. .	. .	Y.	.	+ 6 10 41.0	+ 1.6		
2	.	.	. . . .	. .	. .	. .	F.	.	+ 6 10 5.3	− 0.2		
3	S.	.	1 15 51.68	+ 0.15	. .	. .	Y.	.	+ 6 9 35.3	+ 3.3		
4	.	.	. . . .	. .	. .	. .	F.	.	+ 6 9 3.6	+ 4.7		
5	S.	.	1 15 40.07	− 0.13	. .	. .	Y.	.	+ 6 8 26.8	+ 0.7		
7	S.	.	1 15 29.12	0.00	. .	. .	F.	.	+ 6 7 23.2	+ 1.6		
8	Sk.	.	1 15 23.68	+ 0.03	. .	. .	Y.	.	+ 6 6 51.7	+ 1.7		
9	S.	.	1 15 18.29	+ 0.05	. .	. .	F.	.	+ 6 6 19.7	+ 0.8		
10	.	.	. . . .	. .	. .	. .	Y.	.	+ 6 5 50.2	+ 2.0		
12	Sk.	.	1 15 2.35	− 0.08	. .	. .	Y.	.	+ 6 4 48.9	+ 0.7		
15	.	.	. . . .	. .	. .	. .	Y.	.	+ 6 3 26.2	+ 4.6		
17	.	.	. . . .	. .	. .	. .	Y.	.	+ 6 2 28.6	+ 2.2		
18	Sk.	.	1 14 32.69	− 0.05	. .	. .	F.	.	+ 6 2 2.8	+ 3.2		
19	.	.	. . . .	. .	. .	. .	Y.	.	+ 6 1 35.0	+ 1.6		
23	.	.	. . . .	. .	. .	. .	F.	.	+ 5 59 55.0	+ 0.7		
26	Sk.	.	1 13 57.89	+ 0.09	. .	. .	Y.	.	+ 5 58 48.8	+ 2.6		
28	F.	.	1 13 49.95	− 0.06								
Dec. 1	Sk.	.	1 13 39.10	+ 0.03	. .	. .	Y.	.	+ 5 57 6.4	+ 0.6		

VESTA.

Date.	Observer.	Washington Mean Time.	Berlin Mean Time, Corr'd for Aberration.	Apparent Right Ascension.	Correction to Ephemeris.	Observer.	Geocentric Declination.	Correction to Ephemeris.
1870.		h. m.	h. m.	h. m. s.	s.		° ′ ″	″
Oct. 18	S.	11 59.6	17 48.9	1 49 33.10	+ 0.34			
24	S.	11 30.3	17 19.4	1 43 45.13	+ 0.39	F.	− 1 30 5.5	+ 6.8
25	S.	11 25.4	17 14.5	1 42 47.95	+ 0.40			
31	S.	10 56.3	16 45.2	1 37 15.97	+ 0.30			
Nov. 5	S.	10 32.4	16 21.1	1 33 1.20	+ 0.31	Y.	− 2 2 26.5	+ 5.9
7	S.	10 23.0	16 11.5	1 31 26.58	+ 0.36			

OBSERVATIONS

WITH

THE EQUATORIAL.

1870.

OBSERVATIONS

WITH

THE EQUATORIAL.

FELICITAS, (109).

Date.	Sidereal Time.	$\Delta\alpha$	$\Delta\delta$	$\Delta\rho$	α	$l.\Delta p$	δ	$l.\Delta p$	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
January 3	2 11 45.3	− 1 1.21	− 1 52.2	0.00−0.1	1 6 20.90	9.1276	+ 15 14 31.7	0.5505	*k*	H.
21	3 52 34.8	+ 0 42.40	+ 0 37.4	0.00−0.0	1 35 11.19	9.4358	+ 18 0 10.9	0.5436	*l*	H.
25	3 7 10.1	− 0 39.71	− 3 49.1	0.00−0.2	1 42 18.59	9.2904	+ 18 38 18.9	0.5077	*m*	H.
26	3 38 4.1	+ 1 12.15	+ 5 58.1	0.00+0.1	1 44 10.45	9.3647	+ 18 48 6.4	0.5157	*m*	H.
February 1	3 48 43.0	+ 1 33.66	− 7 11.7	0.00−0.1	1 55 30.26	9.3650	+ 19 45 58.9	0.4980	*n*	H.
19	5 18 13.8	+ 0 18.05	+ 1 17.2	0.00+0.0	2 32 31.55	9.5180	+ 22 37 0.0	0.4932	*o*	H.

COMPARISON STARS.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			
January 3	7 18 5	*k*	1 7 13.91	− 0.70	+ 15 26 41.9	− 3.3	Equatorial comparison with Bessel .	29.10	
21	7 47 52	*l*	1 34 29.57	− 0.78	+ 17 59 37.4	− 3.9	Bessel	18.4	
25	6 56 49	*m*	1 42 59.07	− 0.77	+ 18 42 12.3	− 4.1	Equatorial comparison with γ Arietis .	21.5	
26	7 13 44	*m*	1 42 59.07	− 0.77	+ 18 42 12.3	− 4.1	Equatorial comparison with γ Arietis .	6.1	
February 1	7 0 46	*n*	1 53 57.45	− 0.85	+ 19 53 14.8	− 4.1	Bessel	21.7	
19	7 19 15	*o*	2 32 14.42	− 0.92	+ 22 35 47.2	− 4.4	Argelander	30.6	

LYDIA, (110).

Date.	Sidereal Time.	$\Delta\alpha$	$\Delta\delta$	$\Delta\rho$	α	$l.\Delta p$	δ	$l.\Delta p$	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
June 25	15 40 15.8	+ 1 5.09	+ 5 59.1	0.00+0.2	12 8 23.09	9.5654	+ 3 5 0.2	0.7239	*a*	H.

COMPARISON STAR.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	s.			
June 25	9 24 11	*a*	12 7 17.56	+ 0.44	+ 2 59 2.3	− 1.4	Bessel and Schjellerup	24.5	

DANAË, (61).

Date.	Sidereal Time.	$\Delta\alpha$	$\Delta\delta$	$\Delta\rho$	α	$l.\Delta p$	δ	$l.\Delta p$	Star.	Observer.
1870.	h. m s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
July 19	19 48 9.8	− 0 13.59	+ 5 30.3	0.00+0.9	20 36 13.26	9.0741*n*	− 36 11 58.2	0.9266	*a*	H.
30	20 0 31.3	+ 1 32.01	+ 6 41.7	0.00+1.0	20 23 32.50	8.7540*n*	− 35 40 17.1	0.9290	*b*	H.

COMPARISON STARS.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			s. ′ ″
July 19	11 57 2	*a*	20 36 24.41	+ 2.44	− 36 17 40.8	+ 11.4	Washington Observations .	20.5	−10.38−1 39.4
30	11 26 7	*b*	20 21 57.88	+ 2.61	− 35 47 9.4	+ 9.6	Washington Observations .	18.6	−10.46−1 34.7

NIOBE, (71).

Date.	Sidereal Time.	Δ α	Δ δ	Δ ρ	α	l. Δ p	δ	l. Δ p	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″	″		
August 18	19 19 38.2	— 1 2.98	— 0 2.1	0.00—0.0	21 24 35.01	9.3856*n*	— 11 6 55.6	0.8169	*a*	H.

COMPARISON STAR.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			s. ″
August 18	9 30 38	*a*	21 25 35.66	+ 2.33	— 11 7 6.6	+ 13.1	Bessel.	18.6	+ 0.84+9.6

NEMAUSA, (51)

Date.	Sidereal Time.	Δ α	Δ δ	Δ ρ	α	l. Δ p	δ	l. Δ p	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
August 26	20 11 18.7	— 0 13.28	— 6 41.1	0.00—0.2	21 49 22.07	9.2825*n*	— 5 28 45.7	0.7854	*a*	H.
30	20 34 28.3	+ 0 13.94	— 6 44.8	0.00—0.2	21 46 4.30	9.1527*n*	— 6 4 53.0	0.7918	*b*	H.

COMPARISON STARS.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			s. ″
August 26	9 50 44	*a*	21 49 33.02	+ 2.33	— 5 22 18.5	+ 14.1	Bessel.	24.5	— 0.85+3.8
30	9 58 5	*b*	21 45 48.02	+ 2.34	— 5 58 22.2	+ 14.2	Bessel.	24.5	— 1.13+1.1

PANOPÆA, (70).

Date.	Sidereal Time.	Δ α	Δ δ	Δ ρ	α	l. Δ p	δ	l. Δ p	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
August 26	22 11 55.0	+ 1 46.64	— 4 43.0	0.00—1.4	21 45 54.46	8.8072	— 35 43 0.9	0.9288	*a*	H.
28	19 57 43.0	+ 0 4.34	— 2 41.4	0.00—0.4	21 44 12.17	9.4042*n*	— 35 40 59.6	0.9077	*a*	H.
Sept. 1	21 49 26.5	— 3 20.33	+ 5 40.9	0.00+1.7	21 40 47.51	8.8870*n*	— 35 32 34.6	0.9366	*a*	H.

COMPARISON STARS.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			s. ″
August 26	11 51 0	*a*	21 44 5.12	+ 2.70	— 35 38 28.3	+ 11.8	Yarnall, three observations	12.4	— 2.10—6.5
28	9 29 18	*a*	21 44 5.12	+ 2.71	— 35 38 28.3	+ 11.5	Yarnall, three observations	24.6	— 1.99—5.0
Sept. 1	11 4 59	*a*	21 44 5.12	+ 2.72	— 35 38 28.3	+ 11.1	Yarnall, three observations	3.1	— 2.27—9.2

ATE, (111).

Date.	Sidereal Time.	Δ α	Δ δ	Δ ρ	α	l. Δ p	δ	l. Δ p	Star.	Observer.
1870.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
August 19	20 31 40.2	+ 3 41.01	+ 1 56.1	0.00+0.1	21 20 48.51	9.0026*n*	− 13 23 50.8	0.8412	*a*	H.
26	19 9 58.9	+ 2 28.47	− 6 53.2	−0.01−0.3	21 14 44.59	9.4047*n*	− 13 42 18.9	0.8092	*b*	H.
28	20 33 0.5	+ 0 46.63	− 11 58.2	0.00−0.6	21 13 2.76	8.9155*n*	− 13 47 24.4	0.8443	*b*	H.
30	19 59 18.3	+ 0 14.04	− 0 17.2	0.00−0.0	21 11 28.50	9.1664*n*	− 13 52 3.1	0.8412	*c*	H.
Sept. 1	20 38 16.4	− 1 18.33	− 4 51.9	0.00−0.2	21 9 56.13	8.8146*n*	− 13 56 38.1	0.8457	*c*	H.
October 15	21 21 25.5	− 1 38.75	+ 7 44.4	0.00+0.4	20 59 47.15	8.6504	− 14 13 25.6	0.8478	*d*	H.

COMPARISON STARS.

Date.	Mean Time.	Star.	α 1870.	Reduction.	δ 1870.	Reduction.	Authority.	Comp.	C—O.
1870.	h. m. s.		h. m. s.	s.	° ′ ″	″			
August 19	10 38 33	*a*	21 17 5.15	+ 2.35	− 13 25 59.7	+ 12.7	B. A. Catalogue	11.4	
26	8 49 33	*b*	21 12 13.77	+ 2.36	− 13 35 38.0	+ 12.6	Bessel and Schjellerup . .	21.7	
28	10 4 30	*b*	21 12 13.77	+ 2.36	− 13 35 38.0	+ 12.6	Bessel and Schjellerup . .	15.5	
30	9 23 1	*c*	21 11 12.10	+ 2.36	− 13 51 58.5	+ 12.6	Bessel and Schjellerup . .	20.6	
Sept. 1	9 54 1	*c*	21 11 12.10	+ 2.36	− 13 51 58.5	+ 12.5	Bessel and Schjellerup . .	18.6	
October 15	7 44 3	*d*	21 1 24.01	+ 1.89	− 14 21 20.7	+ 10.3	Bessel	12.4	

OCCULTATIONS OF STARS BY THE MOON.

Date.	Object.	Phase.	Chron. Time.	Corr. Chron.	Mean Time.	Obs.	Remarks.
1870.			h. m. s.	h. m. s.	h. m. s.		
Jan. 5	B. A. C. 7835 . . .	Immersion . . .	0 31 44.0	+ 6 47 44.6	7 19 28.6	N.	
Feb. 7	μ Ceti	Immersion . . .	5 26 47.5	+ 0 30.0	5 27 17.5	N.	
Feb. 12	ζ Geminorum	Immersion . . .	5 15 39.0	+ 0 30.8	5 16 9.8	H.	Fair.
Feb. 12	ζ Geminorum . . .	Emersion . . .	5 28 14.0	+ 0 30.8	5 28 44.8	H.	Uncertain: 2ˢ or 3ˢ late.
Mar. 10	χ^1 Orionis	Immersion . . .	9 58 53.0	− 0 23.3	10 44 3.2	H.	Good.
Mar. 10	χ^1 Orionis	Emersion . . .	10 32 39.0	− 0 23.3	11 17 43.6	H.	Fair.
Sept. 6	η Capricorni . . .	Immersion . . .	20 12 58.0	− 1 1.2	9 8 6.1	H.	Good.
Sept. 6	η Capricorni . . .	Emersion . . .	21 16 8.0	− 1 1.2	10 10 55.9	H.	Uncertain.

The occultations of January 5 and February 7 were observed by Professor Newcomb.

CONSTANTS FOR THE REDUCTION OF FIXED STARS.

The independent constants f, G, H, log g, log h, and log i, given in the American Ephemeris and Nautical Almanac for 1870, have been employed, with changed signs, to reduce the stars observed during that year from their apparent places to their mean places for 1870.0. It is not considered necessary to reprint these constants here.

METEOROLOGICAL OBSERVATIONS

MADE AT THE

UNITED STATES NAVAL OBSERVATORY

DURING

THE YEAR 1870.

INTRODUCTION.

The meteorological department, during 1870, was under the charge of Professor J. R. Eastman, U. S. N., who made a daily examination of all the records and a weekly inspection of all the instruments in use. In addition to his duties in the astronomical department, this officer has performed most of the work of preparing the observations for the press. The observations were made at 0^h, 3^h, 6^h, 9^h, 12^h, 15^h, 18^h, and 21^h, Washington civil time, by the Observatory watchmen, Messrs. T. Hays, D. Horrigan, and N. Cahill, who have acquired such a degree of skill as insures a reasonable accuracy in their work.

METEOROLOGICAL INSTRUMENTS.

Standard Barometer.—This barometer was made by James Green, of New York, and is only used as a standard by which the Newman barometer is occasionally tested. Drawings and a description of this instrument will be found in the annual report for 1862.

Newman Barometer.—The barometer in daily use was made by Newman, and is mounted against the northern wall of the northwest room on the first floor of the Observatory.

The cistern is 103 feet above the mean half-tide of the Potomac River. The cistern and tube are of glass; the internal diameter of the former being 3.0 inches, and of the latter 0.532 inch.

The barometer is mounted with the usual adjustments at the top and bottom, and is attached by heavy brackets to a substantial mahogany board, which is firmly secured to the wall.

The scale is attached to a brass rod having the usual adjustment to the surface of the mercury in the cistern. It is silvered and divided to 0.05 inch, but by means of a vernier may be read to 0.002 inch. The temperature of the mercury in the cistern is determined by a small ivory-scale thermometer, the bulb of which is constantly immersed in the mercury. The constant correction of $+0.005$ inch, determined in 1864, has been applied to all the observations in 1870, and they have also received a further correction for temperature.

Dry-Bulb Thermometer.—This is a mercurial thermometer, by Green, with a bulb 1.5 inches long and 0.2 inch in diameter. The scale is of glass, 12 inches long, 0.8 inch wide, and 0.1 inch thick. It is divided to half-degrees from $-30°$ to $+125°$ Fahrenheit.

Several independent tests, in the spring of 1868, indicated that the *freezing-point* had changed its position on the scale since 1863.

The following table of corrections was deduced from the examinations in 1868, and has been used in the reductions for this volume:

CORRECTIONS TO READINGS OF THE DRY-BULB THERMOMETER.

Scale-Reading.	Correction.	Scale-Reading.	Correction.	Scale-Reading.	Correction.	Scale-Reading.	Correction.
°	°	°	°	°	°	°	°
21	— 1.0	41	— 0.9	61	— 0.8	81	— 0.8
22	— 1.0	42	— 1.1	62	— 0.8	82	— 0.8
23	— 1.1	43	— 1.2	63	— 0.8	83	— 0.8
24	— 1.1	44	— 1.0	64	— 0.8	84	— 0.7
25	— 1.0	45	— 0.9	65	— 0.7	85	— 0.6
26	— 0.9	46	— 0.8	66	— 0.7	86	— 1.0
27	— 0.9	47	— 0.7	67	— 0.7	87	— 1.1
28	— 0.9	48	— 0.7	68	— 0.7	88	— 0.9
29	— 0.9	49	— 0.7	69	— 0.7	89	— 0.7
30	— 0.9	50	— 0.9	70	— 0.7	90	— 0.8
31	— 0.9	51	— 0.9	71	— 0.7	91	— 0.7
32	— 0.8	52	— 0.9	72	— 0.8	92	— 0.6
33	— 0.8	53	— 0.9	73	— 0.9	93	— 0.7
34	— 0.8	54	— 0.9	74	— 0.9	94	— 0.8
35	— 0.8	55	— 0.9	75	— 0.9	95	— 0.7
36	— 0.8	56	— 0.9	76	— 0.8	96	— 0.7
37	— 0.8	57	— 0.8	77	— 0.8	97	— 0.7
38	— 0.8	58	— 0.8	78	— 0.7	98	— 0.6
39	— 0.7	59	— 0.8	79	— 0.3	99	— 0.7
40	— 0.7	60	— 0.8	80	— 0.8	100	— 0.7

Wet-Bulb Thermometer.—This instrument is similar to the preceding in materials, construction, and dimensions. The scale extends from — 35° to + 115° Fahrenheit. Its bulb is covered with soft fine linen, kept moist by the capillary action of a bundle of fine linen fibers that communicate with water in a bird-glass placed close beside it. The linen is changed occasionally, before its free action is impaired by dust

Maximum Thermometer.—This is a mercurial thermometer, with a bulb 1.5 inches long and 0.2 inch in diameter.

The scale is of glass, 12 inches long, 0.8 inch wide, 0.1 inch thick, and is graduated to half-degrees from — 50° to + 120° Fahrenheit.

At a point a short distance above the bulb the internal diameter is so contracted that, while with the increase of temperature the mercury passes freely, with the least decrease of temperature the column is broken at the point of contraction if the instrument is nearly horizontal, and the top of the column marks the highest temperature.

The top of the scale is attached by a metallic clamp to a pivot, around which the the thermometer revolves freely in a vertical plane. This pivot is secured to a walnut board fixed to a post, about three feet from the ground, and the thermometer is placed nearly horizontal by resting the scale, near the bulb, on a wooden pin in the board. After each observation the instrument is adjusted by removing the pin and allowing the thermometer to swing freely from the pivot at the top of the scale, which motion is sufficient to reunite the column of mercury.

Minimum Thermometer.—This is a transparent spirit-thermometer, with a round bulb, about 0.5 inch in diameter.

The scale is of silvered brass, 12 inches long, 1.0 inch wide, 0.06 inch thick, and is graduated to degrees from — 67° to + 131° Fahrenheit.

Its registering index is a short, fine steel wire, inclosed in a delicate, blue-glass cylinder, with a small knob at the extremity farthest from the bulb of the thermometer.

This cylinder is drawn toward the bulb by the decrease of temperature, but when the temperature increases, the spirit flows through and around the cylinder, which remains at rest at the lowest point reached by the spirit. After each observation the index is adjusted by means of a small magnet.

Solar Thermometer.—The mercurial solar thermometer was made by Green, and consists of a blackened spherical bulb and its tube inclosed within a bulb and cylinder of glass of the same form as the thermometer, but of about three times the diameter. The air has been exhausted from the cylinder, in the center of which the thermometer-tube is fixed by means of cork collars, one being near each extremity. The scale is engraved on the thermometer-tube, and has a range from + 5° to + 173° Fahrenheit. The temperature is registered in the same way as by the maximum thermometer, and, after each observation, the instrument is adjusted by holding it in a vertical position and gently tapping the external bulb until the column reunites.

This thermometer rests in a horizontal position, in metallic crutches, about three inches high, which are attached to an inch board 16 inches long and 5 inches wide. The board is painted green and placed on the grass about three yards west of the Meteorological Observatory.

METEOROLOGICAL OBSERVATORY.

In 1862, a small building for the special protection of thermometers was erected about four yards southwest of the southwest corner of the south wing of the Observatory. It is constructed of wood, and is painted white throughout.

Its form is octagonal, each side being 2.4 feet wide, and 6.3 feet high to the eaves. The roof is of tin, unpainted on the under side. The ceiling is of thick boards tightly fitted together, and between it and the roof there is an open space freely communicating with the open air.

The door is on the north side, and it, as well as the sides, is of double louver-work, with a space of three inches between the two divisions. The sides terminate one foot from the ground, and, as the building is situated on a grass-plat, under ordinary circumstances the instruments should indicate correct temperature. The increasing density of the shade-trees and shrubbery in the Observatory grounds, and especially about this building, will soon render some new arrangement necessary.

The dry-bulb, wet-bulb, maximum, and minimum thermometers are in the Meteorological Observatory, and are all supported by means of arms and brackets to an upright metallic shaft which is firmly secured to the ground in the center of the building.

The bulb of the minimum thermometer is 5.8 feet above the ground, those of the dry-bulb and the wet-bulb thermometers are 4.2 feet, and that of the maximum is 3.2 feet above the ground.

A standard thermometer (Troughton and Simms, No. 1) is suspended between the dry-bulb and the wet-bulb thermometers, and is frequently read as a check on the others.

A wooden frame is attached to the sides of the building from which the self-registering thermometers which are issued to naval vessels with chronometers are suspended for convenience in determining their errors by comparison with the standard.

From frequent comparisons it has been ascertained that the errors of the maximum, minimum, and wet-bulb thermometers are not appreciable, and the published observations are therefore the unmodified copies of the original records.

The maximum and minimum thermometers were read at 6^h p. m. on each day.

DIRECTION AND FORCE OF THE WIND.

An ordinary wind-vane revolves freely on a spindle at the top of the time-ball staff, and the direction of the wind is estimated from the known azimuths of the lines of the building.

The velocity of the wind is recorded in numerals, of which 0 denotes a calm, 1 a very slight wind, and so on up to 10, which would indicate a violent hurricane. These recorded numbers are mere estimates, and, at best, are only approximative.

CLOUDS.

In the description of the prevailing forms of clouds the nomenclature of Howard is used; C., K., S., N., being the symbols for the forms designated *cirrus, cumulus, stratus, nimbus;* and the letters C. S., C. K., &c., indicate their combinations *cirro-stratus, cirro-cumulus,* &c. The portion of the sky obscured is determined after careful scrutiny of the clouds or sky. A clear sky is denoted by 0, and a total obscuration by 10.

RAIN-GAUGE.

This instrument is placed within the inclosure for the protection of the solar thermometer. It consists of a cylinder 0.8 inch long and 4.1 inches in diameter, soldered to an inverted cone, which is loaded with lead on the outside and near the apex.

The cone rests in an aperture in the horizontal top of an oblong box, and this, aided by the weight of the lead, prevents disturbance during high winds. The top of the gauge is 2.0 feet above the ground, and is free from all shelter, even in driving rain-storms.

At the apex of the cone is a small aperture, through which the water passes to a receiving-bottle in the box.

The rain is measured in a glass cylinder with an internal diameter of 0.60 inch, so graduated that the depth of rain can be determined to 0.002 inch. The gauge is examined every day, and as the apex of the cone closes the mouth of the bottle, except through the small aperture, there is little or no loss by evaporation.

Each inch of snow is assumed to be equal to 0.111 inch of rain; but, whenever practicable, the snow has been melted and measured in the graduated cylinder.

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
January 1	30.042	30.022	30.002	30.022	30.055	29.916	29.862	29.890
2	29.661	29.443	29.247	29.020	28.928	28.989	29.139	29.275
3	29.389	29.450	29.523	29.616	29.576	29.584	29.628	29.654
4	29.661	29.690	29.696	29.762	29.759	29.796	29.862	29.902
5	29.950	29.998	30.086	30.183	30.196	30.196	30.237	30.237
6	30.205	30.146	30.122	30.124	30.142	29.969	29.975	29.945
7	29.943	29.999	30.068	30.161	30.154	30.129	30.112	30.084
8	29.994	29.958	29.923	29.969	29.949	29.992	30.146	30.224
9	30.264	30.324	30.400	30.440	30.414	30.345	30.307	30.282
10	30.192	30.165	30.118	30.112	30.028	29.950	29.967	30.010
11	30.068	30.116	30.247	30.321	30.308	30.285	30.282	30.285
12	30.215	30.175	30.129	30.104	30.049	29.994	30.012	30.039
13	29.991	29.952	29.934	29.922	29.867	29.844	29.919	30.038
14	30.144	30.254	30.332	30.458	30.455	30.407	30.406	30.369
15	30.316	30.260	30.180	30.070	29.940	29.890	29.818	29.836
16	29.889	30.002	30.075	30.104	30.191	30.166	30.185	30.195
17	30.129	30.092	30.026	30.014	29.896	29.823	29.873	29.845
18	30.023	30.086	30.111	30.354	30.347	30.362	30.418	30.453
19	30.465	30.477	30.481	30.513	30.473	30.424	30.413	30.389
20	30.339	30.315	30.267	30.255	30.148	30.080	30.050	30.032
21	30.036	30.047	30.080	30.196	30.200	30.197	30.249	30.285
22	30.315	30.339	30.369	30.405	30.355	30.280	30.269	30.247
23	30.166	30.126	30.054	30.014	29.964	29.892	29.933	29.984
24	29.994	30.013	30.052	30.094	30.098	30.044	30.041	29.913
25	29.805	29.666	29.540	29.538	29.521	29.568	29.730	29.790
26	29.828	29.883	29.960	30.024	30.018	29.971	29.991	30.002
27	30.002	29.996	30.018	30.062	30.062	30.048	30.096	30.150
28	30.171	30.183	30.212	30.278	30.251	30.211	30.225	30.189
29	30.085	30.044	30.002	29.947	29.804	29.679	29.741	29.793
30	29.841	29.862	29.951	30.011	29.997	29.881	29.863	29.846
31	29.839	29.846	29.861	29.899	29.878	29.776	29.740	29.667
Hourly means.	30.031	30.030	30.034	30.064	30.033	29.990	30.022	30.027

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
February 1	29.631	29.699	29.789	29.893	29.957	29.956	30.005	30.040
2	30.072	30.041	30.016	30.011	29.946	29.989	29.911	29.958
3	29.975	29.990	30.005	30.048	30.035	30.030	30.104	30.190
4	30.234	30.275	30.315	30.461	30.337	30.292	30.306	30.269
5	30.222	30.199	30.181	30.207	30.178	30.115	30.124	30.154
6	30.114	30.087	30.099	30.117	30.098	30.057	30.076	30.104
7	30.114	30.130	30.144	30.223	30.165	30.117	30.057	30.056
8	29.944	29.734	29.571	29.401	29.309	29.355	29.452	29.495
9	29.528	29.581	29.633	29.689	29.662	29.610	29.602	29.610
10	29.604	29.676	29.746	29.797	29.830	29.843	29.902	29.961
11	29.983	30.049	30.061	30.112	30.043	29.928	29.861	29.785
12	29.758	29.724	29.609	29.680	29.668	29.635	29.672	29.735
13	29.895	30.038	30.099	30.159	30.118	30.090	30.069	30.058
14	30.061	30.003	29.960	29.923	29.803	29.654	29.613	29.627
15	29.611	29.593	29.611	29.665	29.633	29.656	29.749	29.809
16	29.896	29.998	30.097	30.228	30.240	30.261	30.298	30.264
17	30.375	30.381	30.378	30.374	30.271	30.142	30.107	30.028
18	29.886	29.694	29.604	29.413	29.293	29.295	29.411	29.463
19	29.525	29.650	29.775	29.908	29.920	29.904	29.940	29.953
20	29.951	29.920	29.906	29.881	29.810	29.807	29.877	29.950
21	29.989	30.011	30.046	30.081	30.076	30.020	30.070	30.125
22	30.135	30.107	30.111	30.117	30.039	29.955	29.940	29.906
23	29.862	29.800	29.777	29.751	29.704	29.627	29.598	29.607
24	29.598	29.615	29.632	29.657	29.629	29.580	29.675	29.710
25	29.752	29.797	29.827	29.844	29.785	29.740	29.738	29.733
26	29.696	29.690	29.703	29.771	29.729	29.654	29.680	29.685
27	29.641	29.603	29.541	29.505	29.366	29.275	29.262	29.398
28	29.436	29.446	29.450	29.489	29.504	29.554	29.601	29.656
Hourly means.	29.875	29.876	29.882	29.914	29.862	29.826	29.846	29.869

Mean Time.		0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.		in.	in.	in.	in.	in.	in.	in.	in.
March	1	29.673	29.704	29.749	29.791	29.733	29.728	29.756	29.777
	2	29.778	29.794	29.810	29.854	29.875	29.875	29.938	29.974
	3	30.002	30.052	30.102	30.160	30.156	30.143	30.154	30.173
	4	30.173	30.154	30.104	30.038	29.925	29.792	29.775	29.816
	5	29.843	29.896	29.952	30.044	30.040	30.030	30.087	30.110
	6	30.134	30.102	30.123	30.076	30.027	29.944	29.875	29.817
	7	29.699	29.659	29.613	29.662	29.652	29.647	29.708	29.760
	8	29.815	29.834	29.855	29.907	29.908	29.894	29.954	29.994
	9	30.032	30.072	30.123	30.144	30.140	30.091	30.094	30.112
	10	30.111	30.095	30.122	30.110	30.004	29.836	29.828	29.870
	11	29.902	29.919	29.942	29.935	29.840	29.728	29.695	29.708
	12	29.706	29.707	29.727	29.742	29.668	29.554	29.513	29.369
	13	29.251	29.040	29.007	29.135	29.211	29.299	29.426	29.569
	14	29.642	29.714	29.809	29.910	29.935	29.902	29.953	29.987
	15	30.021	30.005	30.044	30.045	30.006	29.928	29.840	29.767
	16	29.486	29.418	29.435	29.519	29.553	29.535	29.579	29.606
	17	29.587	29.562	29.537	29.525	29.497	29.489	29.539	29.613
	18	29.630	29.676	29.719	29.784	29.818	29.852	29.926	30.014
	19	30.055	30.066	30.110	30.196	30.175	30.136	30.103	30.125
	20	30.109	30.086	30.052	30.022	29.967	29.869	29.833	29.815
	21	29.775	29.738	29.747	29.731	29.709	29.698	29.778	29.885
	22	29.899	29.907	29.928	29.967	29.952	29.924	29.960	30.018
	23	30.058	30.084	30.119	30.136	30.142	30.124	30.212	30.261
	24	30.305	30.356	30.378	30.416	30.371	30.301	30.311	30.321
	25	30.347	30.379	30.397	30.445	30.396	30.328	30.311	30.340
	26	30.346	30.331	30.317	30.322	30.255	30.126	30.120	30.045
	27	29.889	29.687	29.496	29.304	29.183	29.151	29.198	29.255
	28	29.280	29.293	29.345	29.422	29.474	29.527	29.603	29.689
	29	29.735	29.771	29.820	29.887	29.903	29.897	29.969	30.006
	30	30.048	30.041	30.080	30.105	30.065	30.022	30.021	30.099
	31	30.086	30.053	30.042	30.080	30.056	30.010	29.994	29.982
Hourly means.		29.884	29.876	29.890	29.917	29.891	29.851	29.872	29.899

Mean Time.		0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.		in.	in.	in.	in.	in.	in.	in.	in.
April	1	29.974	29.935	29.914	29.923	29.893	29.861	29.840	29.858
	2	29.838	29.820	29.822	29.831	29.806	29.746	29.743	29.741
	3	29.713	29.683	29.695	29.741	29.745	29.740	29.781	29.814
	4	29.802	29.778	29.773	29.784	29.779	29.732	29.753	29.757
	5	29.692	29.625	29.630	29.654	29.688	29.731	29.804	29.852
	6	29.862	29.859	29.881	29.917	29.903	29.889	29.905	29.952
	7	29.957	29.968	29.983	30.009	29.992	29.967	29.986	30.020
	8	30.026	30.025	30.046	30.068	30.041	29.991	30.001	30.025
	9	30.031	30.024	30.046	30.080	30.039	30.001	29.982	29.994
	10	29.995	29.975	29.990	29.998	29.968	29.926	29.915	29.890
	11	29.841	29.794	29.777	29.762	29.707	29.698	29.698	29.717
	12	29.704	29.687	29.732	29.772	29.758	29.728	29.762	29.837
	13	29.895	29.926	29.981	30.046	30.032	29.994	30.000	30.018
	14	30.047	30.015	30.037	30.042	29.988	29.919	29.894	29.918
	15	29.910	29.912	29.943	29.986	29.966	29.948	29.959	30.053
	16	30.124	30.156	30.188	30.211	30.170	30.115	30.102	30.056
	17	29.989	29.848	29.799	29.701	29.640	29.592	29.560	29.521
	18	29.458	29.420	29.435	29.423	29.386	29.372	29.390	29.442
	19	29.440	29.450	29.486	29.510	29.528	29.529	29.592	29.632
	20	29.644	29.614	29.614	29.623	29.601	29.582	29.601	29.632
	21	29.631	29.623	29.645	29.672	29.684	29.782	29.710	29.778
	22	29.815	29.844	29.904	29.945	29.927	29.904	29.897	29.945
	23	29.950	29.900	29.899	29.904	29.897	29.867	29.898	29.993
	24	30.034	30.041	30.081	30.128	30.096	30.001	29.947	29.944
	25	29.888	29.838	29.827	29.861	29.961	30.050	30.132	30.190
	26	30.242	30.255	30.289	30.315	30.230	30.147	30.098	30.125
	27	30.090	30.047	30.037	30.064	30.032	29.970	29.908	29.910
	28	29.895	29.891	29.883	29.875	29.843	29.778	29.748	29.844
	29	29.856	29.872	29.913	29.970	29.989	29.984	29.947	29.980
	30	29.967	29.943	29.976	29.973	29.963	29.907	29.872	29.917
Hourly means.		29.877	29.859	29.874	29.893	29.875	29.848	29.847	29.878

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
May 1	29.939	29.952	29.978	29.999	29.988	29.952	29.969	30.044
2	30.113	30.142	30.168	30.209	30.200	30.151	30.139	30.148
3	30.145	30.088	30.093	30.096	30.018	29.921	29.829	29.796
4	29.757	29.779	29.694	29.687	29.668	29.622	29.625	29.705
5	29.725	29.769	29.826	29.880	29.891	29.887	29.869	29.868
6	29.835	29.763	29.773	29.703	29.610	29.485	29.414	29.360
7	29.368	29.388	29.424	29.436	29.381	29.366	29.404	29.436
8	29.456	29.398	29.422	29.413	29.437	29.449	29.513	29.567
9	29.571	29.602	29.642	29.686	29.695	29.683	29.715	29.762
10	29.791	29.798	29.788	29.796	29.768	29.774	29.822	29.854
11	29.850	29.783	29.813	29.799	29.755	29.757	29.768	29.826
12	29.836	29.827	29.844	29.846	29.795	29.752	29.770	29.801
13	29.812	29.802	29.806	29.841	29.841	29.818	29.803	29.852
14	29.857	29.849	29.897	29.931	29.930	29.904	29.893	29.929
15	29.950	29.984	29.990	30.021	30.000	29.942	29.893	29.904
16	29.895	29.887	29.883	29.865	29.828	29.760	29.734	29.754
17	29.765	29.746	29.766	29.818	29.864	29.880	29.831	30.030
18	30.060	30.072	30.111	30.174	30.194	30.151	30.150	30.185
19	30.199	30.205	30.217	30.217	30.181	30.109	30.064	30.085
20	30.058	30.044	30.076	30.066	30.036	29.964	29.962	30.009
21	30.006	30.010	30.029	30.049	29.994	29.913	29.860	29.882
22	29.894	29.947	30.020	30.079	30.081	30.052	30.059	30.116
23	30.138	30.109	30.092	30.070	30.058	29.993	29.923	29.934
24	29.937	29.859	29.852	29.836	29.791	29.751	29.768	29.760
25	29.752	29.744	29.766	29.796	29.777	29.734	29.738	29.792
26	29.798	29.776	29.786	29.802	29.780	29.712	29.698	29.718
27	29.694	29.654	29.687	29.721	29.733	29.730	29.735	29.757
28	29.734	29.711	29.715	20.747	29.765	29.758	29.792	29.825
29	29.829	29.825	29.859	29.887	29.909	29.914	29.913	29.943
30	29.975	29.986	30.021	30.065	30.082	30.061	30.058	30.111
31	30.133	30.150	30.168	30.189	30.175	30.127	30.126	30.137
Hourly Means.	29.868	29.858	29.878	29.894	29.879	29.841	29.834	29.867

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
June 1	30.140	30.093	30.085	30.046	30.010	29.954	29.924	29.925
2	29.889	29.873	29.869	29.877	29.870	29.931	29.798	29.813
3	29.799	29.789	29.779	29.799	29.798	29.809	29.820	29.853
4	29.850	29.850	29.876	29.886	29.876	29.844	29.837	29.864
5	29.871	29.856	29.870	29.899	29.881	29.827	29.788	29.814
6	29.824	29.817	29.844	29.858	29.770	29.827	29.836	29.885
7	29.891	29.894	29.904	29.910	29.890	29.754	29.846	29.873
8	29.863	29.848	29.877	29.912	29.889	29.864	29.859	29.878
9	29.840	29.823	29.808	29.811	29.802	29.741	29.744	29.749
10	29.680	29.624	29.636	29.678	29.650	29.613	29.619	29.662
11	29.661	29.662	29.680	29.738	29.703	29.669	29.717	29.763
12	29.807	29.836	29.919	29.926	29.917	29.864	29.839	29.874
13	29.859	29.826	29.854	29.877	29.862	29.825	29.819	29.860
14	29.852	29.853	29.894	29.932	29.910	29.872	29.839	29.851
15	29.860	29.859	29.860	29.853	29.829	29.784	29.807	29.861
16	29.883	29.855	29.778	29.874	29.876	29.834	29.822	29.861
17	29.849	29.842	29.868	29.900	29.900	29.873	29.884	29.899
18	29.928	29.935	29.954	29.978	29.955	29.931	29.908	29.944
19	29.945	29.930	29.963	29.955	29.939	29.991	29.872	29.882
20	29.878	29.855	29.851	29.865	29.836	29.787	29.753	29.785
21	29.780	29.767	29.841	29.901	29.922	29.930	29.970	30.016
22	30.046	30.106	30.137	30.186	30.164	30.104	30.089	30.123
23	30.120	30.123	30.146	30.178	30.137	30.097	30.070	30.078
24	30.076	30.090	30.107	30.107	30.086	30.048	30.012	30.022
25	30.038	30.034	30.035	30.036	30.015	29.968	29.936	29.942
26	29.944	29.943	29.939	29.973	29.956	29.908	29.892	29.918
27	29.942	29.942	29.971	29.989	29.961	29.901	29.884	29.922
28	29.912	29.890	29.889	29.876	29.851	29.796	29.768	29.772
29	29.762	29.767	29.766	29.779	29.763	29.710	29.706	29.776
30	29.747	29.736	29.745	29.726	29.696	29.643	29.610	29.625
Hourly Means.	29.885	29.877	29.891	29.911	29.890	29.853	29.842	29.870

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
July 1	29.607	29.616	29.623	29.649	29.669	29.654	29.673	29.770
2	29.797	29.832	29.857	29.886	29.897	29.883	29.877	29.899
3	29.881	29.857	29.878	29.876	29.877	29.863	29.853	29.911
4	29.901	29.894	29.909	29.941	29.916	29.880	29.871	29.886
5	29.878	29.864	29.888	29.838	29.918	29.875	29.867	29.927
6	29.923	29.906	29.916	29.940	29.925	29.892	29.878	29.875
7	29.840	29.803	29.794	29.774	29.721	29.647	29.623	29.632
8	29.616	29.698	29.726	29.756	29.764	29.751	29.762	29.840
9	29.876	29.941	29.984	30.032	30.040	30.025	30.034	30.061
10	30.070	30.071	30.096	30.095	30.070	30.028	30.035	30.065
11	30.040	30.011	30.007	30.002	29.986	29.925	29.886	29.880
12	29.862	29.850	29.882	29.869	29.836	29.779	29.791	29.812
13	29.815	29.834	29.873	29.904	29.894	29.857	29.833	29.840
14	29.842	29.800	29.792	29.813	29.788	29.748	29.767	29.791
15	29.797	29.820	29.848	29.910	29.912	29.881	29.871	29.922
16	29.912	29.910	29.931	29.936	29.939	29.912	29.904	29.923
17	29.920	29.918	29.937	29.939	29.918	29.862	29.830	29.855
18	29.856	29.846	29.883	29.883	29.846	29.833	29.798	29.831
19	29.824	29.820	29.847	29.856	29.844	29.827	29.827	29.865
20	29.873	29.881	29.931	29.940	29.922	29.877	29.875	29.941
21	29.912	29.928	29.943	29.936	29.925	29.898	29.873	29.918
22	29.929	29.929	29.971	29.997	30.000	29.974	29.962	29.989
23	29.998	29.979	30.014	30.037	30.019	29.994	29.962	29.986
24	29.996	30.017	30.022	30.033	30.009	29.925	29.921	29.967
25	29.937	29.953	29.978	30.008	29.992	29.943	29.948	29.970
26	29.977	29.960	30.004	30.027	30.015	29.956	29.930	29.930
27	29.914	29.911	29.909	29.905	29.930	29.874	29.936	29.906
28	29.872	29.853	29.869	29.880	29.853	29.751	29.722	29.780
29	29.887	29.747	29.762	29.783	29.802	29.794	29.795	29.820
30	29.852	29.893	29.941	29.998	30.018	30.022	30.019	30.046
31	30.061	30.068	30.090	30.098	30.078	30.004	29.969	29.990
Hourly Means.	29.886	29.883	29.907	29.921	29.914	29.875	29.867	29.898

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
August 1	29.983	29.972	29.974	29.978	29.966	29.935	29.874	29.908
2	29.894	29.891	29.886	29.872	29.858	29.826	29.806	29.845
3	29.838	29.831	29.845	29.848	29.828	29.871	29.775	29.784
4	29.773	29.740	29.760	29.767	29.723	29.662	29.714	29.740
5	29.744	29.746	29.773	29.819	29.808	29.768	29.764	29.794
6	29.790	29.788	29.798	29.836	29.850	29.830	29.820	29.862
7	29.881	29.879	29.894	29.942	29.941	29.907	29.902	29.952
8	29.960	29.979	29.983	30.016	29.995	29.956	29.950	29.997
9	30.004	29.989	29.997	30.007	29.969	29.931	29.939	29.962
10	29.968	29.966	29.971	30.001	29.886	29.980	29.966	30.004
11	30.006	30.008	30.012	30.036	30.018	29.974	29.978	30.016
12	30.016	30.022	30.033	30.031	30.025	29.971	29.980	29.984
13	29.993	29.972	29.976	29.979	29.940	29.870	29.835	29.829
14	29.821	29.809	29.802	29.900	29.925	29.919	29.943	29.985
15	29.995	29.981	29.978	29.992	29.973	29.949	29.927	29.935
16	29.912	29.894	29.884	29.891	29.846	29.792	29.781	29.804
17	29.808	29.786	29.798	29.806	29.800	29.759	29.757	29.810
18	29.823	29.846	29.880	29.922	29.917	29.896	29.872	29.910
19	29.908	29.930	29.965	29.961	29.923	29.880	29.864	29.877
20	29.890	29.866	29.906	29.943	29.936	29.914	29.924	29.989
21	30.037	30.057	30.070	30.104	30.089	30.069	30.077	30.120
22	30.122	30.123	30.137	30.162	30.143	30.100	30.090	30.095
23	30.085	30.078	30.075	30.069	29.996	29.928	29.878	29.916
24	29.876	29.853	29.835	29.892	29.854	29.818	29.813	29.854
25	29.851	29.854	29.856	29.877	29.856	29.791	29.766	29.831
26	29.847	29.912	29.939	30.040	30.068	30.068	30.098	30.140
27	30.186	30.234	30.227	30.260	30.255	30.184	30.165	30.164
28	30.145	30.125	30.107	30.108	30.065	29.981	29.936	29.957
29	29.932	29.900	29.899	29.883	29.835	29.705	29.712	29.777
30	29.809	29.821	29.853	29.917	29.910	29.872	29.873	29.919
31	29.920	29.905	29.939	29.976	29.962	29.833	29.928	29.957
Hourly Means.	29.929	29.928	29.937	29.962	29.941	29.901	29.894	29.926

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
September 1	29.930	29.923	29.946	29.964	29.940	29.890	29.874	29.903
2	29.904	29.889	29.890	29.892	29.855	29.782	29.771	29.788
3	29.786	29.782	29.736	29.756	29.730	29.677	29.628	29.652
4	29.655	29.646	29.638	29.682	29.681	29.700	29.742	29.831
5	29.876	29.909	29.960	30.014	30.011	29.977	30.028	30.060
6	30.082	30.095	30.118	30.178	30.156	30.115	30.099	30.144
7	30.141	30.153	30.172	30.202	30.164	30.117	30.106	30.145
8	30.154	30.170	30.186	30.234	30.226	30.193	30.188	30.215
9	30.224	30.218	30.216	30.238	30.184	30.096	30.045	30.066
10	30.048	30.008	29.983	29.968	29.943	29.899	29.905	29.959
11	30.014	30.056	30.098	30.135	30.108	30.075	30.077	30.123
12	30.131	30.166	30.202	30.249	30.230	30.191	30.183	30.235
13	30.243	30.260	30.283	30.294	30.254	30.211	30.208	30.224
14	30.241	30.233	30.239	30.248	30.193	30.135	30.110	30.125
15	30.110	30.096	30.096	30.114	30.066	29.980	29.971	29.994
16	29.995	29.976	29.959	29.963	29.978	29.925	29.946	29.978
17	29.961	29.949	29.967	29.974	29.961	29.923	29.907	29.893
18	29.861	29.843	29.857	29.894	29.911	29.901	29.931	29.972
19	29.995	30.016	30.069	30.120	30.118	30.093	30.106	30.139
20	30.163	30.182	30.201	30.226	30.215	30.185	30.191	30.220
21	30.231	30.242	30.286	30.318	30.288	30.233	30.227	30.268
22	30.261	30.252	30.271	30.289	30.261	30.196	30.163	30.176
23	30.147	30.120	30.167	30.118	30.072	30.009	30.002	30.022
24	29.999	29.985	30.002	30.005	29.973	29.915	29.905	29.932
25	29.941	29.938	29.954	29.969	29.938	29.909	29.912	29.966
26	29.978	30.012	30.033	30.071	30.060	30.027	30.036	30.035
27	30.050	30.037	30.050	30.044	30.018	29.972	29.960	29.970
28	29.977	29.947	29.981	30.011	29.998	29.961	29.976	30.004
29	29.997	29.990	29.998	29.991	29.980	29.937	29.948	29.939
30	29.848	29.800	29.779	29.784	29.740	29.681	29.685	29.723
Hourly means.	30.029	30.030	30.044	30.065	30.014	29.997	29.994	30.023

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
October 1	29.735	29.773	29.790	29.820	29.813	29.813	29.840	29.866
2	29.898	29.928	29.952	29.944	29.907	29.851	29.863	29.854
3	29.800	29.761	29.724	29.738	29.707	29.665	29.684	29.703
4	29.705	29.696	29.718	29.746	29.752	29.734	29.804	29.857
5	29.884	29.908	29.924	29.974	29.968	29.942	29.974	30.020
6	30.020	30.020	30.065	30.122	30.116	30.117	30.153	30.180
7	30.186	30.186	30.225	30.242	30.206	30.198	30.192	30.190
8	30.194	30.182	30.195	30.229	30.190	30.155	30.173	30.188
9	30.197	30.201	30.196	30.229	30.180	30.128	30.121	30.126
10	30.130	30.125	30.143	30.164	30.115	30.042	30.024	30.018
11	29.986	29.921	29.902	29.894	29.859	29.795	29.761	29.739
12	29.699	29.652	29.612	29.627	29.604	29.618	29.633	29.666
13	29.697	29.717	29.743	29.784	29.767	29.769	29.833	29.904
14	29.924	29.946	29.991	30.030	29.994	29.965	29.993	30.012
15	30.020	30.028	30.075	30.147	30.138	30.136	30.158	30.201
16	30.199	30.196	30.256	30.293	30.278	30.224	30.223	30.266
17	30.258	30.230	30.230	30.229	30.165	30.104	30.073	30.033
18	29.940	29.869	29.835	29.852	29.937	29.970	30.023	30.058
19	30.054	30.058	30.058	30.074	29.999	29.903	29.871	29.820
20	29.670	29.505	29.458	29.424	29.383	29.380	29.501	29.620
21	29.716	29.757	29.791	29.863	29.830	29.823	29.869	29.931
22	29.959	30.001	30.083	30.188	30.192	30.171	30.236	30.309
23	30.348	30.407	30.459	30.521	30.498	30.454	30.456	30.467
24	30.474	30.467	30.479	30.499	30.434	30.371	30.345	30.334
25	30.297	30.233	30.232	30.211	30.135	30.062	30.047	30.035
26	30.022	30.016	30.030	30.081	30.131	30.148	30.211	30.254
27	30.286	30.307	30.295	30.303	30.237	30.111	30.070	30.009
28	29.944	29.923	29.945	29.976	29.946	29.914	29.944	29.957
29	29.976	30.011	30.040	30.090	30.073	30.084	30.128	30.180
30	30.180	30.197	30.208	30.221	30.123	30.040	29.961	29.817
31	29.713	29.607	29.679	29.735	29.772	29.809	29.875	29.922
Hourly means.	30.004	29.994	30.010	30.040	30.014	29.983	30.001	30.017

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
November 1	29.954	29.990	30.022	30.090	30.046	30.002	29.988	29.985
2	29.974	29.944	29.950	29.950	29.894	29.816	29.779	29.776
3	29.715	29.653	29.608	29.662	29.739	29.818	29.904	29.867
4	29.994	30.029	30.086	30.152	30.116	30.069	30.072	30.044
5	29.962	29.958	29.955	29.991	30.050	30.069	30.112	30.151
6	30.121	30.173	30.233	30.294	30.266	30.235	30.245	30.261
7	30.246	30.212	30.215	30.228	30.207	30.151	30.167	30.168
8	30.177	30.165	30.150	30.149	30.078	29.988	29.942	29.931
9	29.864	29.798	29.775	29.752	29.655	29.673	29.820	29.992
10	30.072	30.143	30.200	30.235	30.234	30.220	30.239	30.236
11	30.243	30.236	30.213	30.202	30.104	30.009	29.993	29.959
12	29.909	29.891	29.872	29.883	29.796	29.770	29.799	29.807
13	29.814	29.799	29.831	29.887	29.834	29.807	29.833	29.840
14	29.807	29.754	29.666	29.580	29.478	29.455	29.586	29.656
15	29.696	29.696	29.724	29.750	29.719	29.702	29.736	29.756
16	29.778	29.819	29.870	29.947	29.961	29.978	30.051	30.111
17	30.155	30.180	30.207	30.254	30.192	30.124	30.103	30.087
18	30.048	30.014	29.999	29.974	29.890	29.900	29.996	30.033
19	30.018	29.980	29.982	30.010	29.979	29.994	30.053	30.078
20	30.092	30.103	30.117	30.137	30.085	30.021	30.035	30.040
21	30.023	30.003	30.009	30.037	30.002	30.032	30.106	30.140
22	30.134	30.139	30.127	30.082	29.906	29.693	29.480	29.415
23	29.481	29.516	29.575	29.664	29.745	29.816	29.892	29.932
24	29.958	29.982	30.011	30.102	30.064	30.054	30.094	30.161
25	30.145	30.143	30.136	30.109	30.005	29.844	29.764	29.632
26	29.566	29.621	29.674	29.754	29.770	29.764	29.788	29.799
27	29.794	29.804	29.836	29.888	. . .	29.844	29.917	29.988
28	30.041	30.081	30.109	30.165	30.134	30.075	30.078	30.079
29	30.041	30.033	30.024	30.042	29.971	29.933	29.955	30.021
30	30.089	30.170	30.235	30.305	30.289	30.303	30.328	30.310
Hourly means.	29.964	29.967	29.980	30.009	29.973	29.939	29.962	29.975

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
December 1	30.282	30.239	30.231	30.216	30.115	30.011	29.958	29.915
2	29.855	29.746	29.734	29.740	29.714	29.690	29.725	29.765
3	29.798	29.870	29.898	29.982	29.961	29.959	29.966	29.968
4	29.953	29.873	29.812	29.799	29.733	29.688	29.744	29.778
5	29.784	29.893	29.804	29.749	29.671	29.539	29.503	29.459
6	29.450	29.482	29.553	29.666	29.716	29.765	29.859	29.925
7	29.963	30.002	29.998	29.935	29.861	29.740	29.678	29.634
8	29.625	29.651	29.693	29.775	29.788	29.834	29.898	29.939
9	29.962	29.978	30.039	30.104	30.118	30.107	30.177	30.195
10	30.222	30.233	30.247	30.257	30.202	30.189	30.231	30.228
11	30.209	30.238	30.261	30.267	30.212	30.143	30.132	30.052
12	29.922	29.836	29.776	29.780	29.795	29.838	29.905	29.940
13	29.952	29.970	29.973	29.994	29.955	29.917	29.923	29.904
14	29.857	29.851	29.844	29.871	29.841	29.841	29.892	29.930
15	29.949	29.969	30.001	30.049	30.032	30.023	30.089	30.111
16	30.096	30.106	30.120	30.147	30.109	30.108	30.138	30.147
17	30.122	30.074	30.056	30.061	30.076	29.907	29.895	29.862
18	29.843	29.830	29.845	29.891	29.880	29.861	29.942	29.990
19	30.008	30.015	30.053	30.077	30.005	29.932	29.828	29.639
20	29.512	29.499	29.490	29.591	29.638	29.622	29.686	29.729
21	29.724	29.795	29.855	29.968	29.999	30.074	30.175	30.259
22	30.260	30.277	30.271	30.316	30.258	30.182	30.160	30.149
23	30.059	30.032	30.003	30.014	29.944	29.921	29.958	30.015
24	30.058	30.086	30.118	30.214	30.219	30.258	30.345	30.405
25	30.383	30.423	30.453	30.553	30.534	30.464	30.440	30.400
26	30.353	30.245	30.206	30.202	30.163	30.141	30.205	30.305
27	30.342	30.364	30.345	30.345	30.261	30.165	30.134	30.059
28	30.006	29.912	29.842	29.800	29.719	29.635	29.606	29.554
29	29.519	29.531	29.561	29.648	29.670	29.745	29.888	29.952
30	29.980	30.032	30.053	30.087	29.931	29.776	29.728	29.719
31	29.704	29.707	29.699	29.722	29.721	29.754	29.827	29.920
Hourly means.	29.960	29.960	29.962	29.994	29.963	29.930	29.956	29.963

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
January 1	38.8	36.2	35.7	37.5	41.3	47.0	42.3	41.5
2	40.9	45.0	51.1	53.4	52.6	41.4	38.3	35.6
3	33.4	31.2	30.3	32.2	40.1	39.2	34.9	30.6
4	30.1	27.6	26.6	29.9	32.5	33.0	31.7	30.5
5	28.4	26.2	26.3	29.6	32.7	36.7	31.5	28.9
6	28.5	29.6	32.2	34.7	39.8	40.6	41.5	41.1
7	39.3	35.7	33.2	30.0	32.5	33.2	28.1	26.4
8	26.6	27.1	28.1	27.7	34.2	28.6	22.0	18.6
9	18.0	17.0	16.0	15.5	22.4	27.1	22.7	22.5
10	25.1	26.1	27.1	28.6	31.6	38.5	37.0	35.8
11	28.1	26.6	25.6	29.6	49.6	52.1	40.9	37.8
12	37.7	37.5	37.4	40.7	47.3	51.3	49.1	47.8
13	46.7	46.2	45.4	47.8	62.2	65.7	54.6	49.6
14	44.3	37.2	31.4	29.7	29.7	29.6	29.4	29.4
15	31.1	32.1	32.6	34.1	35.6	37.6	38.6	39.8
16	37.7	35.2	35.2	36.7	53.8	54.1	44.1	40.3
17	40.9	40.6	40.3	40.9	48.6	64.9	58.7	55.6
18	52.6	50.6	41.8	38.9	40.5	46.9	38.8	34.6
19	32.2	28.3	28.1	30.6	38.3	42.1	35.2	31.2
20	30.0	28.7	28.8	31.5	37.8	40.9	40.9	39.9
21	39.6	39.3	36.4	35.4	47.8	50.1	42.8	36.2
22	31.7	30.1	29.6	33.7	50.4	52.9	47.3	44.1
23	46.3	46.3	42.4	46.3	57.2	62.2	58.7	51.6
24	51.6	51.1	40.1	45.2	42.3	40.9	38.9	40.1
25	40.7	41.8	44.1	41.1	42.7	50.8	44.0	39.5
26	37.2	35.2	34.8	40.9	58.4	59.4	51.6	48.5
27	46.3	43.5	41.8	43.5	53.8	53.6	47.9	43.3
28	41.5	39.7	37.2	36.4	41.8	42.3	39.7	38.8
29	37.6	37.6	37.8	38.3	39.0	39.7	40.1	40.5
30	39.9	37.2	34.7	36.8	44.6	44.4	40.6	36.7
31	35.2	35.4	35.7	35.5	41.8	41.8	39.7	36.5
Hourly means.	36.71	35.55	34.45	35.89	42.67	44.79	40.37	37.85

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
February 1	32.7	34.0	35.5	34.2	38.3	40.2	37.7	32.2
2	31.7	30.6	29.8	33.7	44.9	51.4	45.4	38.8
3	34.8	33.7	33.2	37.2	48.9	48.7	40.9	36.2
4	36.2	32.2	28.4	29.3	33.3	32.2	29.6	29.3
5	28.6	28.3	28.9	29.1	33.2	37.7	35.7	34.2
6	32.7	32.0	31.7	32.6	34.2	35.7	35.2	32.8
7	29.4	27.1	25.9	27.9	36.0	39.9	37.6	36.2
8	33.0	32.2	32.7	31.7	31.8	32.2	31.8	33.6
9	33.2	32.7	32.2	34.2	37.0	39.3	35.6	33.2
10	34.7	33.2	32.9	34.7	36.2	38.0	35.7	30.5
11	26.9	24.5	24.0	28.5	37.4	38.9	37.2	37.4
12	40.1	41.3	43.2	45.7	45.7	56.2	46.9	38.7
13	34.7	26.1	25.1	27.6	33.6	39.1	33.4	31.2
14	28.1	28.6	31.2	32.2	36.5	43.0	42.2	46.8
15	46.6	46.5	45.2	46.5	49.1	44.1	40.5	37.4
16	34.2	32.2	30.8	33.9	46.8	50.9	41.8	36.0
17	32.7	32.2	30.0	34.7	50.3	50.6	46.3	45.8
18	44.0	47.7	50.1	51.6	55.9	35.7	28.6	26.6
19	24.5	25.1	22.5	24.0	30.9	40.1	37.0	33.0
20	34.2	34.4	34.7	37.8	43.0	30.1	24.6	19.0
21	15.0	13.4	11.0	12.6	17.2	21.5	17.4	14.2
22	11.0	10.4	11.3	15.6	22.2	27.6	25.3	25.6
23	26.6	27.7	28.7	29.6	31.7	35.2	32.4	30.1
24	28.0	25.9	24.9	27.9	34.5	38.3	31.2	30.1
25	26.5	23.1	22.4	26.9	39.1	40.7	36.2	30.8
26	27.6	25.9	25.1	30.1	44.1	45.7	43.0	35.7
27	32.7	33.2	33.4	35.7	34.4	36.2	36.2	33.7
28	32.4	31.2	31.7	34.2	41.3	40.7	39.5	37.2
Hourly means.	31.17	30.19	29.87	32.13	38.12	39.64	35.89	33.08

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
March 1	36.0	35.7	35.2	36.2	38.6	40.6	37.4	32.6
2	32.8	31.2	30.6	31.4	35.0	34.9	33.7	31.2
3	29.6	27.6	25.3	27.7	34.2	39.3	35.7	29.1
4	27.7	29.1	30.6	30.1	33.1	41.0	36.2	32.2
5	32.0	31.2	30.4	30.9	33.9	37.0	32.2	29.1
6	27.1	25.5	24.0	28.3	28.6	27.1	26.9	26.9
7	26.6	26.6	27.8	29.5	36.8	39.3	35.2	34.8
8	33.7	30.1	27.7	32.2	35.7	34.9	32.2	28.7
9	27.1	24.3	23.4	30.1	33.7	39.3	36.7	31.7
10	28.4	26.6	26.1	35.2	46.3	51.6	49.6	45.4
11	35.7	33.2	30.6	39.8	54.5	58.6	51.6	47.2
12	40.7	36.2	34.2	37.5	42.2	44.3	40.8	36.0
13	36.6	39.0	36.4	35.7	40.9	40.6	58.2	34.8
14	34.2	33.2	32.2	34.7	39.8	41.8	39.8	38.3
15	32.4	29.0	27.3	33.7	41.4	42.4	40.4	38.8
16	38.3	35.5	28.7	24.5	27.6	30.3	27.1	24.0
17	22.7	21.0	22.5	26.1	26.4	27.6	29.1	31.7
18	32.7	34.7	31.2	38.1	41.1	44.8	41.8	37.0
19	35.7	31.1	31.1	36.2	45.2	51.3	45.9	36.0
20	31.2	29.7	28.6	39.5	54.6	60.7	57.2	53.3
21	50.1	49.7	47.3	50.3	56.2	63.8	57.2	47.8
22	43.5	42.5	35.7	47.3	51.7	54.1	50.1	46.1
23	40.8	38.3	34.2	42.4	42.0	47.3	41.2	38.2
24	34.2	31.2	29.6	27.2	45.9	51.3	47.7	37.2
25	33.2	31.2	28.2	39.3	48.3	52.5	47.5	40.1
26	37.4	35.2	33.2	41.8	47.7	48.3	45.8	40.8
27	40.7	41.3	43.5	46.7	51.1	56.4	52.1	48.6
28	48.3	45.7	44.3	43.3	46.3	46.5	46.6	42.5
29	41.8	40.1	37.2	44.7	49.5	54.1	50.7	45.0
30	38.7	35.2	33.6	46.8	55.8	58.3	53.9	46.8
31	45.2	43.2	41.7	43.5	46.8	47.8	42.3	40.9
Hourly means.	35.33	33.68	32.01	36.47	42.29	45.41	42.67	37.83

Mean Time.	0 .	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
April 1.	39.3	38.8	38.3	39.3	41.6	43.0	43.8	41.8
2	41.0	41.1	40.6	41.1	43.5	45.8	43.7	43.5
3	43.0	41.8	40.9	41.4	41.1	44.1	43.5	42.2
4	39.3	38.3	36.0	37.0	37.2	38.9	38.2	35.2
5	32.2	32.4	32.8	36.8	40.1	43.0	42.4	39.3
6	36.2	35.2	33.7	41.4	50.6	52.6	48.7	45.4
7	42.3	38.3	37.2	48.6	52.9	53.8	50.6	48.3
8	45.2	40.6	37.6	51.9	62.7	65.9	61.4	52.3
9	44.1	42.4	42.4	53.1	65.7	64.8	60.4	53.7
10	49.9	46.5	44.9	51.6	58.7	60.5	55.7	53.6
11	49.1	48.3	50.0	54.8	59.7	57.7	56.7	53.1
12	51.1	53.1	52.6	58.7	64.3	68.3	65.3	58.5
13	52.1	49.7	47.7	60.2	69.5	74.1	68.8	60.8
14	58.2	56.4	53.1	65.3	71.4	77.5	72.6	67.3
15	63.7	58.7	57.2	69.3	79.7	84.4	75.4	56.2
16	47.3	45.2	43.5	44.1	45.7	45.6	43.0	42.4
17	40.9	44.5	45.8	50.1	56.0	55.2	55.7	53.1
18	50.1	48.7	47.3	47.0	47.3	47.2	47.1	42.3
19	40.6	39.1	39.3	46.0	48.5	52.1	47.3	43.0
20	40.9	40.9	40.5	44.1	50.7	52.9	52.1	49.1
21	49.1	48.0	47.8	54.7	59.2	60.4	59.2	55.1
22	52.7	51.1	47.7	55.8	60.9	62.2	59.7	52.6
23	49.7	47.3	47.3	56.9	67.3	73.1	68.1	57.2
24	51.1	48.7	46.3	57.5	67.7	72.6	68.2	60.7
25	59.2	57.2	55.6	64.7	63.8	57.0	57.4	49.1
26	43.3	38.3	38.6	53.1	63.6	68.7	64.7	56.0
27	52.1	49.6	47.8	59.5	62.7	70.3	68.7	64.6
28	62.2	60.2	61.7	71.0	79.4	78.7	73.7	63.5
29	62.2	61.7	57.2	52.6	46.9	46.1	47.5	47.3
30	47.3	44.6	43.5	56.5	61.7	67.3	62.8	55.6
Hourly means.	47.85	46.22	45.16	52.14	57.34	59.46	56.81	51.43

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
May 1	51.3	48.8	47.1	62.9	71.0	78.7	72.6	58.8
2	54.1	49.6	48.9	61.9	67.5	67.3	62.9	55.1
3	51.4	49.1	45.8	56.0	55.7	55.0	53.3	52.4
4	51.7	50.1	49.7	63.0	77.5	81.7	79.0	66.3
5	62.2	60.2	58.7	57.6	62.6	57.7	56.7	54.3
6	51.1	48.3	50.1	58.8	68.0	72.1	68.7	64.3
7	59.7	55.1	56.1	67.3	73.7	65.5	60.7	57.2
8	56.2	55.3	56.1	63.2	66.0	60.7	62.2	57.2
9	53.6	51.6	54.1	62.8	69.8	72.7	66.7	61.4
10	55.1	54.1	53.3	61.5	66.3	58.3	59.7	56.0
11	55.1	51.6	50.3	51.9	52.1	51.9	54.1	49.1
12	46.3	44.1	46.1	58.7	70.3	68.3	59.3	56.8
13	54.7	50.1	51.6	62.6	71.0	63.6	63.1	55.8
14	55.1	51.1	52.1	64.3	74.0	75.8	74.1	62.2
15	55.6	53.1	54.8	69.9	79.0	83.8	79.4	66.3
16	62.0	57.2	55.6	73.1	83.0	85.4	80.8	68.3
17	65.7	59.8	61.2	72.9	76.9	76.5	67.1	61.2
18	59.2	54.6	55.4	58.5	62.7	68.7	65.7	61.1
19	57.6	57.2	57.8	61.2	71.5	75.7	73.1	66.3
20	65.3	62.7	63.6	69.6	79.7	84.6	79.0	68.8
21	65.8	63.4	63.7	70.6	80.4	85.0	81.4	71.8
22	69.3	66.3	64.8	69.3	74.4	79.0	70.8	64.3
23	59.8	59.4	60.4	63.8	69.5	69.6	68.0	62.9
24	61.7	60.7	62.2	72.1	77.3	78.6	68.3	67.1
25	66.3	64.8	64.1	70.5	77.8	81.6	76.8	69.3
26	65.0	62.8	59.8	63.6	64.6	66.5	64.7	62.9
27	61.7	59.2	58.2	55.6	55.1	53.5	53.1	52.6
28	51.1	50.6	51.6	54.1	56.7	57.2	56.5	55.1
29	54.1	55.3	56.2	58.2	60.4	61.5	61.7	59.2
30	59.2	57.7	58.2	64.2	68.7	71.5	68.1	62.7
31	61.7	60.7	61.3	67.5	73.6	76.7	69.2	64.7
Hourly means.	58.02	55.63	55.77	63.46	69.57	70.47	66.99	61.02

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
June 1	61.7	61.2	60.9	63.0	69.9	73.3	68.5	65.3
2	63.7	62.3	62.7	62.8	65.6	66.0	65.3	63.7
3	62.4	62.3	62.2	66.1	70.8	72.6	69.3	67.3
4	66.1	66.3	66.9	69.6	76.0	76.8	76.7	68.8
5	66.8	65.3	66.2	67.2	73.7	77.7	75.4	69.3
6	67.1	67.5	67.3	68.3	75.7	78.7	74.8	69.8
7	65.9	63.7	62.7	73.6	80.7	75.7	77.3	71.2
8	68.7	67.3	66.3	75.1	82.2	84.3	78.7	72.7
9	70.8	69.3	68.7	74.2	68.5	73.2	68.6	67.7
10	67.9	67.5	66.8	70.3	69.8	72.1	71.7	66.0
11	65.0	64.2	64.7	69.8	75.8	76.4	62.8	62.2
12	59.2	57.2	57.4	65.8	76.8	76.7	72.5	70.3
13	68.3	70.3	70.9	73.6	78.7	78.0	76.2	71.7
14	69.3	66.8	66.8	70.9	75.7	77.4	73.1	68.3
15	65.8	64.3	67.3	73.6	81.7	82.7	71.7	64.9
16	65.5	64.2	64.6	71.4	75.2	76.8	72.6	69.1
17	65.9	63.7	63.7	70.8	78.9	81.1	77.5	69.9
18	66.2	63.2	64.7	74.4	83.8	86.4	83.3	73.6
19	69,3	66.8	65.8	75.9	80.2	84.6	81.4	75.6
20	70.1	68.3	67.8	75.4	83.7	84.9	80.8	72.9
21	70.9	70.7	69.3	73.1	78.7	80.2	76.2	66.7
22	61.9	58.7	57.2	67.3	74.9	79.7	79.0	68.8
23	63.4	61.7	61.2	71.2	82.9	88.0	84.6	72.9
24	68.3	66.1	66.8	78.0	87.6	92.0	87.1	75.8
25	71.2	70.2	69.3	80.7	90.6	93.2	87.3	78.9
26	72.6	72.1	71.6	83.6	91.9	97.0	90.7	79.3
27	74.1	72.1	73.4	79.8	88.7	92.6	89.2	81.5
28	78.7	74.3	73.5	83.3	90.8	95.6	86.7	80.1
29	78.1	75.2	73.3	83.3	91.6	88.8	81.4	76.7
30	73.6	71.7	72.1	80.9	88.7	91.7	88.7	79.8
Hourly means.	67.95	66.48	66.40	73.10	79.63	81.79	77.64	71.36

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
July 1	78.0	74.6	74.7	84.1	90.3	84.4	77.7	73.6
2	67.3	67.3	67.3	67.8	67.5	68.6	66.8	63.2
3	62.2	61.5	62.0	64.7	71.2	73.8	72.3	67.5
4	65.3	63.2	63.4	68.3	72.6	74.3	72.1	70.8
5	67.8	69.3	68.8	71.2	79.0	83.8	82.2	75.8
6	71.7	70.3	70.8	76.7	79.5	79.2	78.8	73.8
7	71.7	71.0	72.1	75.6	81.7	77.5	79.9	75.8
8	75.2	69.3	68.9	72.5	79.6	81.9	79.8	69.9
9	65.9	62.2	62.7	70.8	78.2	82.2	78.0	69.8
10	66.8	65.8	65.8	73.4	80.6	81.8	75.7	72.5
11	69.9	69.7	70.2	76.0	81.7	80.0	80.3	73.4
12	72.1	71.2	71.2	77.6	83.8	87.1	75.4	73.6
13	72.6	70.6	70.0	75.2	82.2	86.1	82.2	72.6
14	70.7	70.3	70.5	70.7	86.3	90.5	80.5	74.9
15	72.1	70.8	70.9	79.7	87.6	88.7	85.8	79.7
16	76.7	74.7	75.2	81.0	89.7	90.5	87.5	80.8
17	79.0	76.1	75.1	85.2	93.4	97.4	91.2	82.5
18	80.7	79.2	77.3	84.8	93.1	79.7	84.9	78.7
19	76.2	74.2	74.6	80.7	87.6	92.5	86.4	78.7
20	74.2	71.1	70.8	81.2	90.0	93.2	88.5	72.5
21	71.2	70.8	71.1	79.4	88.0	89.2	84.7	78.0
22	75.7	73.9	75.7	78.9	88.3	90.6	83.9	79.8
23	77.6	76.2	75.8	82.4	90.5	92.3	87.1	81.0
24	78.7	75.2	75.7	79.7	88.6	89.2	88.5	81.7
25	79.2	77.3	74.6	82.6	92.6	86.4	87.3	83.3
26	79.0	75.5	74.8	84.9	91.7	95.1	85.7	79.9
27	77.5	75.7	75.7	79.9	87.3	92.3	79.7	73.6
28	72.6	72.1	72.6	81.1	89.9	91.1	73.1	71.5
29	72.1	71.2	71.2	79.2	83.6	85.5	79.8	77.2
30	75.2	69.3	64.9	70.9	76.5	79.2	77.5	69.0
31	65.0	63.0	63.7	71.5	81.2	84.9	80.2	72.4
Hourly means.	72.90	71.05	70.91	78.64	84.32	85.45	81.08	75.08

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
August 1	69.1	68.7	67.5	74.6	82.2	80.0	75.7	69.9
2	67.3	66.8	66.3	76.7	85.9	89.8	86.1	78.0
3	74.1	71.7	71.7	79.8	88.7	90.8	83.9	79.0
4	75.6	73.6	73.1	80.8	88.3	84.9	81.0	75.7
5	72.1	68.8	66.6	76.7	83.3	86.3	82.7	72.6
6	67.5	66.3	63.5	74.4	87.6	90.3	84.6	71.7
7	71.5	69.5	67.8	76.8	89.1	92.7	83.8	77.8
8	76.2	76.2	75.2	81.2	92.0	92.0	87.3	80.7
9	77.3	76.2	77.3	79.8	90.1	85.9	82.2	78.7
10	76.7	74.7	74.6	79.0	82.2	79.7	75.6	73.8
11	73.7	72.7	74.5	77.5	84.6	80.7	75.7	75.2
12	73.7	71.2	71.5	79.8	86.1	90.5	85.0	77.9
13	74.8	73.2	71.5	79.0	85.9	86.4	82.6	79.7
14	76.2	72.1	71.7	65.8	67.1	68.8	67.3	63.2
15	62.2	62.4	62.4	68.3	73.5	72.7	72.3	65.7
16	61.7	60.2	59.2	70.0	77.6	79.0	73.6	70.8
17	69.3	65.5	66.1	71.6	80.9	84.4	79.0	71.9
18	68.6	66.3	64.5	72.6	85.0	87.7	82.2	75.2
19	72.5	70.8	70.5	79.4	89.2	92.5	84.9	79.0
20	76.0	72.8	72.1	82.7	88.8	89.8	82.7	75.7
21	71.7	67.3	60.8	66.8	76.8	80.8	73.3	67.3
22	63.2	59.2	59.2	66.8	77.2	79.6	72.1	66.6
23	62.2	59.2	58.7	66.3	79.0	83.6	77.6	72.7
24	70.3	69.3	69.3	68.7	74.4	81.2	79.4	75.7
25	73.1	72.2	72.8	79.7	92.3	96.0	87.4	82.8
26	78.7	75.2	74.2	74.0	81.7	83.7	73.1	64.9
27	61.2	56.2	56.0	64.0	71.2	79.7	70.8	69.3
28	67.8	67.3	68.3	72.7	81.6	87.6	78.7	74.2
29	72.2	69.8	70.5	77.7	88.5	94.0	83.3	79.8
30	76.2	69.0	68.6	69.8	79.0	83.6	74.6	67.8
31	65.6	63.8	63.6	71.8	79.4	79.2	74.7	70.4
Hourly means.	70.91	68.65	68.05	74.35	82.88	84.96	79.13	73.67

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
September 1	66.3	64.3	63.1	70.8	82.9	85.3	76.8	70.3
2	67.8	64.5	63.4	74.6	85.9	88.6	80.2	75.4
3	73.6	71.2	69.3	71.9	75.6	72.5	72.6	68.2
4	66.6	66.3	65.9	69.8	78.8	75.5	72.7	64.3
5	62.7	59.0	58.2	68.3	77.5	80.5	72.1	62.9
6	58.3	56.3	55.7	66.2	81.7	83.9	74.0	65.0
7	60.2	58.2	55.6	71.2	86.3	87.8	77.8	72.1
8	69.3	68.3	66.9	74.2	85.1	85.4	76.6	65.3
9	64.8	63.3	63.5	67.8	79.4	82.6	72.1	65.1
10	60.8	59.2	60.2	69.0	83.3	83.8	75.7	71.6
11	65.9	59.2	53.8	53.7	75.2	75.0	65.3	57.7
12	55.1	51.6	49.1	61.0	76.2	78.7	68.3	56.2
13	52.1	50.6	49.6	62.4	78.7	80.5	69.8	61.7
14	56.2	52.6	49.1	65.3	79.2	81.5	71.5	63.7
15	58.2	55.2	55.7	67.6	73.7	80.7	73.3	68.5
16	65.9	63.2	60.2	71.7	80.2	85.7	75.2	68.5
17	64.9	64.7	64.9	67.0	68.8	68.9	68.3	67.1
18	64.5	63.8	63.8	63.8	66.3	69.1	68.6	65.8
19	61.2	57.7	55.7	66.8	76.2	79.2	66.3	56.9
20	52.6	50.1	49.1	59.9	76.7	79.0	65.8	57.8
21	54.1	50.1	48.7	63.2	76.9	79.2	69.1	62.2
22	58.1	54.6	56.0	60.7	69.0	79.0	69.3	61.2
23	57.2	51.1	51.6	61.4	80.5	83.3	73.3	64.9
24	59.2	57.9	57.7	65.7	85.1	87.6	75.7	68.8
25	64.8	63.4	60.0	67.8	82.8	83.5	76.8	69.3
26	68.6	66.3	64.8	73.3	82.7	83.3	74.2	68.7
27	66.5	66.5	66.1	67.8	71.6	73.6	71.7	68.5
28	69.3	67.1	67.8	69.7	73.3	74.6	71.7	69.6
29	68.3	67.3	67.3	68.8	71.2	70.9	68.1	67.5
30	67.3	67.7	69.3	71.8	75.5	76.2	73.4	70.8
Hourly means.	62.68	60.38	59.74	67.11	77.88	79.85	72.21	65.85

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
October 1	67.3	66.0	65.1	70.6	81.0	79.3	72.3	68.3
2	67.3	64.3	61.6	64.2	66.8	64.8	61.2	59.2
3	58.4	58.2	58.7	60.6	65.9	72.5	67.8	64.8
4	63.2	60.2	57.7	64.7	73.3	74.7	63.4	59.4
5	54.6	51.6	50.6	58.7	70.9	67.3	63.3	57.9
6	56.1	54.3	52.9	58.9	65.4	64.2	59.5	57.7
7	56.5	54.1	51.1	53.6	62.8	58.7	52.9	51.8
8	49.8	46.9	46.3	55.1	68.0	72.3	58.7	51.3
9	49.1	46.3	44.4	52.7	70.1	73.6	62.0	52.1
10	48.3	46.5	44.1	51.9	72.7	73.9	61.8	55.6
11	54.5	56.7	59.0	63.5	63.7	65.8	62.7	63.2
12	63.2	63.0	62.7	65.3	72.6	72.8	63.5	57.7
13	58.7	59.7	55.1	56.9	65.8	64.3	56.7	52.6
14	48.7	45.2	44.1	55.6	65.6	68.3	55.7	51.3
15	49.1	47.3	43.4	51.4	69.9	71.5	61.7	54.6
16	51.1	48.0	46.3	52.7	71.7	72.3	61.6	54.1
17	52.1	49.3	51.1	53.8	68.7	71.2	64.6	61.2
18	60.2	59.7	59.2	64.2	59.8	60.2	55.4	50.1
19	46.8	41.8	38.8	47.6	58.4	59.2	54.0	54.4
20	54.9	55.4	55.1	61.7	57.0	56.4	50.7	47.3
21	43.2	43.5	44.1	47.3	54.5	60.5	50.1	47.3
22	45.2	43.9	43.5	51.3	64.5	68.3	56.6	47.1
23	42.6	40.5	39.5	50.4	65.3	66.8	56.8	51.1
24	47.3	45.4	45.2	48.3	68.4	68.0	58.2	52.1
25	51.6	50.1	49.1	53.6	71.4	72.7	62.4	58.2
26	56.5	53.1	55.1	61.0	61.8	61.4	54.1	52.6
27	51.3	47.8	46.8	47.1	52.1	55.6	56.9	54.1
28	58.2	56.2	55.6	60.2	70.1	70.8	62.2	60.4
29	57.3	52.6	47.1	51.9	59.6	58.0	53.1	47.8
30	46.5	44.1	43.2	47.5	50.1	49.6	53.1	53.3
31	53.6	55.1	54.9	56.7	61.0	58.7	49.8	50.1
Hourly means.	53.65	51.83	50.69	56.10	65.51	66.25	58.80	54.80

Mean Time.	0^{h}.	3^{h}.	6^{h}	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
November 1	44.6	43.0	39.1	48.3	62.2	61.5	51.1	47.3
2	45.2	44.1	42.3	50.7	67.3	64.3	57.7	55.1
3	53.6	53.1	52.1	58.6	61.1	57.8	50.6	47.8
4	45.7	40.1	38.7	44.5	60.1	61.8	50.6	46.8
5	45.2	45.7	46.3	50.4	55.0	50.0	50.1	47.8
6	45.7	42.2	39.8	46.3	58.4	56.5	49.1	46.3
7	47.3	44.6	42.3	45.7	61.2	62.9	51.9	46.6
8	42.0	39.3	37.7	43.0	59.2	60.7	53.1	50.1
9	49.3	48.2	50.1	57.6	69.3	59.2	53.9	45.8
10	41.0	38.3	37.0	43.0	49.1	50.1	43.1	35.4
11	32.7	30.2	29.0	34.1	49.7	53.4	43.0	40.1
12	39.8	39.3	37.0	41.6	57.2	59.4	50.1	41.8
13	37.4	36.4	36.2	47.9	59.2	62.2	53.5	45.7
14	40.6	40.9	42.3	46.1	51.2	56.3	49.1	45.2
15	41.4	40.8	38.3	40.3	44.6	43.7	40.4	33.2
16	30.6	28.3	27.4	32.2	44.1	45.7	39.5	35.4
17	33.7	31.7	30.7	34.2	45.8	48.8	40.4	37.2
18	35.2	34.2	34.0	39.3	48.2	44.4	36.0	34.2
19	31.0	28.5	28.1	32.7	39.8	38.8	32.8	30.4
20	27.9	26.1	25.1	30.7	47.3	47.1	41.8	37.2
21	38.3	37.5	37.3	39.1	50.3	50.8	44.7	40.9
22	39.3	39.8	37.8	37.7	37.6	40.8	43.8	47.3
23	41.4	40.1	39.8	42.9	45.5	44.7	40.1	37.3
24	38.3	36.2	34.8	37.4	44.1	45.7	39.7	32.5
25	29.1	27.6	26.7	30.4	38.8	40.6	35.4	36.2
26	34.7	34.7	34.7	38.9	49.2	51.4	44.1	38.8
27	37.2	37.9	37.2	44.3	. .	64.8	56.7	44.3
28	39.5	36.8	35.2	39.6	62.7	61.5	52.1	46.5
29	43.0	40.9	36.5	39.9	61.5	67.7	59.9	53.1
30	51.1	47.3	40.6	39.9	46.5	46.6	40.8	34.5
Hourly means.	40.06	38.46	37.14	41.92	52.63	53.31	46.50	42.03

Mean Time.	0 .	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
December 1	30.1	27.4	26.1	38.8	46.7	48.8	41.4	35.4
2	33.2	30.2	29.3	36.3	55.8	58.7	48.8	49.1
3	43.5	39.8	38.3	41.3	49.8	51.6	45.6	42.9
4	39.9	38.3	35.5	37.9	53.6	59.2	50.3	47.8
5	43.0	38.0	37.4	40.1	59.5	60.2	49.8	48.6
6	47.8	49.1	50.1	47.1	48.6	49.3	43.9	39.9
7	40.0	38.7	37.2	39.3	49.1	47.8	47.8	44.3
8	42.0	41.8	41.5	41.6	42.4	41.8	38.7	36.7
9	35.7	34.2	31.8	35.2	41.7	43.0	36.7	31.2
10	28.3	26.6	28.9	29.6	43.2	45.2	37.0	32.6
11	30.2	31.0	31.5	33.2	33.8	34.4	34.5	36.2
12	37.7	46.7	46.8	46.0	48.2	50.3	43.2	37.9
13	34.8	32.8	30.6	35.4	49.1	46.8	43.4	41.8
14	40.7	44.1	39.3	39.8	44.6	42.4	39.8	37.7
15	35.2	34.0	34.7	36.4	38.3	38.5	34.8	33.2
16	32.2	31.0	30.6	33.5	37.3	39.8	32.9	29.3
17	27.1	25.1	23.9	25.5	35.4	35.7	33.2	32.7
18	32.4	31.2	28.6	32.6	39.5	39.1	36.8	35.6
19	34.7	32.1	31.0	33.5	38.5	34.2	34.8	34.7
20	36.4	35.7	34.7	36.7	43.8	43.6	39.8	37.7
21	35.7	34.7	31.7	30.7	29.7	26.1	21.3	18.2
22	15.5	14.0	15.0	17.7	25.3	25.8	21.8	21.6
23	21.8	19.5	18.5	18.0	22.7	22.0	18.3	15.0
24	10.7	8.5	7.5	8.1	15.7	18.4	12.5	8.0
25	9.0	9.5	8.3	12.0	22.9	26.6	21.2	22.5
26	22.4	22.3	22.2	24.4	34.2	34.2	32.8	26.7
27	20.5	17.5	15.5	20.0	34.2	33.5	31.2	30.7
28	32.9	31.7	31.6	32.7	34.4	34.9	32.8	32.6
29	31.7	30.7	26.7	25.2	23.8	24.2	19.5	17.5
30	15.5	11.0	7.5	11.5	24.2	25.6	29.1	31.9
31	33.2	29.1	28.6	35.2	41.7	40.6	40.1	36.2
Hourly means.	31.41	30.20	29.06	31.46	38.96	39.43	35.28	33.10

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
January 1	37.0	35.0	34.5	36.5	40.0	43.0	41.0	40.7
2	41.3	45.3	51.5	53.5	49.8	39.0	35.5	33.0
3	31.8	30.5	29.8	30.9	36.2	35.4	32.5	29.5
4	29.5	27.5	26.5	29.0	29.2	29.6	30.0	29.5
5	28.5	26.5	27.0	30.0	32.0	36.0	29.6	29.0
6	29.0	30.0	32.0	35.0	36.0	38.0	38.6	39.5
7	37.5	33.0	31.0	27.5	29.0	29.5	. .	25.0
8	26.3	27.0	27.5	27.0	30.6	28.0	22.8	19.5
9	19.0	18.0	17.0	16.9	23.5	28.0	23.5	21.6
10	23.0	24.0	25.0	26.2	31.4	32.2	33.2	32.6
11	27.4	27.0	26.0	29.0	48.5	46.3	38.2	35.6
12	35.8	36.0	36.2	38.5	43.5	51.6	46.0	45.4
13	44.5	44.0	44.0	47.6	56.5	58.0	51.5	46.0
14	40.5	37.0	31.0	29.3	29.0	30.0	29.8	29.8
15	31.4	32.2	32.8	35.0	36.4	38.5	39.1	40.2
16	38.0	35.0	35.5	37.0	47.3	48.5	44.0	39.5
17	40.0	41.0	41.0	41.6	49.0	58.0	57.5	55.2
18	52.0	49.5	40.5	33.4	38.2	47.0	36.0	31.6
19	30.0	28.0	28.0	29.3	33.0	37.0	31.0	30.5
20	29.0	29.0	28.6	30.7	36.4	40.0	40.5	40.0
21	39.5	39.0	36.8	35.9	41.5	42.0	40.0	35.0
22	31.8	30.2	29.5	33.2	46.0	48.0	43.5	42.5
23	45.0	44.6	43.0	46.5	54.0	56.5	55.0	50.5
24	50.5	50.7	47.8	43.6	41.5	40.5	39.0	40.5
25	41.2	42.8	44.5	42.0	43.0	45.0	40.0	36.7
26	35.2	34.5	35.0	39.0	50.2	51.8	47.8	44.5
27	45.5	42.5	41.0	42.0	47.7	46.5	43.0	39.2
28	38.6	36.0	34.0	32.8	38.7	38.0	36.0	35.5
29	35.0	37.0	38.0	38.5	39.5	40.2	40.2	38.0
30	37.0	34.0	32.0	33.5	39.5	41.6	38.3	35.8
31	35.0	35.0	35.0	36.5	39.2	39.5	37.0	37.0
Hourly means.	35.7	34.9	34.3	35.1	39.9	41.4	33.7	36.4

Mean Time.	0^{h}.	3^{h}.	6_{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
February 1	33.2	33.5	33.6	31.2	34.5	35.2	33.8	30.5
2	30.5	30.0	29.5	33.0	40.5	45.4	41.5	37.3
3	35.2	33.5	33.0	35.2	43.2	42.5	38.4	34.2
4	34.5	30.6	27.4	27.5	30.6	31.0	29.5	29.3
5	28.8	28.5	29.0	29.2	33.0	36.0	34.5	33.0
6	32.0	31.5	31.3	32.5	32.7	34.0	34.2	32.7
7	29.0	27.0	26.0	28.0	34.7	37.6	36.5	36.0
8	33.0	32.5	33.0	32.5	32.4	32.0	31.6	31.8
9	32.0	32.0	32.0	32.5	33.2	35.0	33.4	32.6
10	34.0	33.0	31.0	32.2	33.0	33.0	32.0	28.5
11	26.0	24.7	24.5	28.5	33.0	36.5	35.4	37.0
12	39.0	40.0	41.8	42.0	44.2	49.0	44.0	37.0
13	31.4	25.0	24.5	26.0	31.8	33.6	33.5	31.0
14	27.8	28.0	31.2	32.0	36.2	42.0	41.2	46.8
15	46.6	46.5	45.5	46.5	48.9	44.5	40.9	37.4
16	33.5	32.0	30.4	31.6	41.5	43.3	38.5	34.5
17	31.8	31.5	30.0	34.5	45.0	46.9	43.3	43.6
18	43.6	47.0	49.0	52.0	55.7	35.7	27.9	26.5
19	24.5	25.0	23.0	24.5	28.0	34.5	33.8	31.7
20	33.5	33.5	33.5	36.0	40.0	31.5	24.2	18.5
21	15.0	13.6	11.6	13.0	15.7	19.8	16.6	14.2
22	11.0	10.5	11.5	14.8	19.8	24.5	23.8	24.0
23	26.0	27.8	29.0	30.0	32.0	32.2	32.2	30.8
24	27.8	26.0	24.5	26.0	30.5	33.5	31.0	29.5
25	26.5	23.0	22.5	27.5	34.0	34.0	32.8	28.8
26	27.0	25.5	25.2	29.9	38.0	40.0	38.5	33.5
27	31.2	31.0	31.5	33.5	34.7	36.5	36.5	34.0
28	32.0	31.7	32.0	34.8	38.5	38.2	37.5	37.0
Hourly means.	30.6	29.8	29.5	31.3	35.5	36.3	34.2	32.2

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9_{h}.
1870.	°	°	°	°	°	°	°	°
March 1	33.5	33.0	32.0	32.0	34.0	36.0	33.0	30.4
2	30.8	29.4	28.8	29.7	32.0	31.4	31.5	30.3
3	29.9	28.0	25.3	28.3	33.0	32.0	32.5	28.2
4	26.5	29.0	30.5	30.5	33.0	38.5	34.6	31.4
5	31.3	31.2	31.0	29.0	31.2	34.7	32.0	29.0
6	27.2	24.5	24.0	29.0	29.0	28.0	27.2	27.4
7	27.0	27.0	27.5	29.5	32.4	35.5	33.5	32.0
8	31.2	29.0	27.0	29.2	32.0	31.8	32.5	29.0
9	27.0	24.2	33.7	30.0	30.3	32.8	33.8	29.7
10	27.5	26.0	26.0	32.5	39.6	44.5	42.5	39.9
11	34.5	32.0	30.8	38.0	48.0	48.5	45.4	42.5
12	40.0	35.5	34.0	36.3	40.7	42.6	40.0	36.2
13	37.0	39.5	37.0	35.6	38.0	35.9	34.6	31.5
14	30.6	30.0	30.0	32.0	36.0	37.5	36.3	36.0
15	32.5	29.0	27.2	32.5	38.5	39.5	37.8	36.8
16	37.5	35.5	29.0	23.5	26.5	29.0	26.8	24.5
17	23.0	21.5	23.0	26.0	25.0	25.0	27.5	30.0
18	31.5	33.2	31.0	33.5	35.0	37.3	36.8	33.0
19	32.0	30.0	30.0	31.0	38.3	43.0	38.5	33.5
20	30.0	29.8	28.0	37.0	47.0	51.0	50.0	48.2
21	45.9	46.0	46.0	48.5	52.7	55.2	49.3	43.0
22	41.0	40.0	35.5	42.0	44.0	45.4	43.6	41.0
23	39.0	35.0	32.0	37.0	38.0	39.0	34.4	31.9
24	29.0	27.5	26.5	32.3	37.6	41.8	39.2	35.5
25	32.2	31.0	27.0	33.6	40.6	43.5	42.5	36.3
26	35.0	33.5	32.0	39.0	41.8	41.6	40.5	39.0
27	40.0	41.6	43.0	46.6	51.5	52.5	48.0	46.5
28	47.0	44.0	41.0	39.6	41.0	40.7	40.0	39.2
29	38.2	37.0	35.3	40.5	43.5	47.0	45.3	42.0
30	38.0	35.0	33.0	43.8	50.0	51.2	49.0	44.2
31	45.2	43.0	41.3	41.5	43.5	44.7	42.0	40.0
Hourly means.	33.9	32.6	31.5	34.5	38.2	39.9	38.1	35.4

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
April 1	38.8	38.5	38.5	39.5	42.5	43.7	44.5	42.5
2	41.6	41.7	41.2	42.0	43.8	44.8	43.9	43.8
3	43.2	42.5	41.5	41.0	40.9	43.0	41.0	40.5
4	38.5	38.0	35.6	36.5	37.5	38.0	36.0	33.6
5	32.5	32.9	33.4	36.0	37.7	39.8	39.0	37.0
6	34.8	34.0	33.7	38.7	45.0	45.5	43.0	42.0
7	40.5	38.0	36.5	44.5	47.0	46.5	45.4	45.9
8	43.0	40.5	37.8	47.2	52.2	51.8	50.5	47.5
9	43.5	42.8	42.5	49.4	57.0	56.9	55.0	52.0
10	46.6	45.0	43.4	47.0	50.0	51.2	49.5	48.0
11	47.5	47.2	49.3	52.6	53.7	52.9	50.5	49.3
12	48.5	50.0	50.0	49.2	52.0	52.0	51.5	47.0
13	44.0	42.0	40.0	47.8	55.3	68.7	56.5	53.9
14	52.6	51.0	49.0	57.0	61.6	65.0	62.8	68.5
15	58.0	55.0	53.5	61.5	65.9	67.0	65.3	52.0
16	45.6	44.5	43.2	43.4	44.0	44.3	43.2	43.0
17	42.0	45.0	46.3	50.6	56.5	55.3	54.5	53.0
18	49.0	48.0	47.0	47.0	45.6	46.0	44.5	41.6
19	40.5	39.2	39.3	43.7	45.0	47.0	44.5	42.5
20	41.3	41.5	40.5	44.2	49.6	50.0	51.5	49.0
21	48.5	48.0	47.5	51.7	53.0	53.6	52.3	51.5
22	49.5	47.0	46.0	50.5	54.5	55.5	53.9	50.0
23	49.0	47.0	47.0	54.8	61.2	65.0	61.0	54.0
24	49.5	48.0	46.2	53.0	60.5	64.6	61.5	57.8
25	56.0	55.2	54.5	61.7	57.2	51.0	49.5	45.6
26	42.8	38.8	39.0	46.6	55.2	59.0	57.0	51.7
27	51.5	49.0	47.5	55.2	58.2	63.0	62.8	61.0
28	60.9	60.0	61.0	67.5	70.5	70.2	66.2	63.1
29	62.0	61.5	56.6	51.5	46.6	46.0	47.3	47.0
30	46.8	45.0	43.8	50.0	54.9	59.0	55.5	52.8
Hourly means.	46.2	45.2	44.3	48.7	51.8	53.2	51.3	48.9

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
May 1	51.2	48.0	47.0	54.2	58.0	61.7	60.2	54.3
2	49.7	45.5	47.5	53.0	55.8	56.2	54.5	51.5
3	49.7	49.0	45.0	51.6	53.9	54.0	53.4	52.0
4	52.0	50.8	50.4	60.7	67.5	70.0	66.0	61.6
5	59.7	58.0	57.5	55.5	58.7	55.3	55.5	53.7
6	51.5	48.5	50.4	56.7	63.5	66.7	63.0	62.5
7	60.0	55.5	55.8	62.5	65.7	61.5	58.6	56.4
8	55.0	55.0	56.0	61.5	61.3	56.6	56.8	54.5
9	52.8	49.5	52.5	58.0	61.9	61.8	60.0	54.5
10	53.2	53.0	52.3	58.5	61.0	54.7	55.5	53.0
11	55.0	51.5	50.5	52.1	52.0	51.8	53.7	49.5
12	46.5	44.5	46.0	56.9	64.0	61.5	56.0	54.0
13	54.0	50.2	51.3	59.2	63.5	60.8	60.0	55.0
14	54.5	51.0	51.5	58.5	61.8	64.0	63.8	59.0
15	55.4	53.5	54.8	61.5	66.9	70.0	68.6	62.2
16	59.4	57.0	55.6	67.5	71.8	70.3	69.2	64.5
17	62.0	59.4	58.9	65.8	68.4	69.2	63.4	56.8
18	57.2	53.0	53.5	56.5	60.0	63.5	63.2	59.6
19	57.0	57.0	57.6	60.5	68.0	70.4	69.4	65.0
20	65.0	62.5	63.5	67.8	74.0	76.6	76.5	67.2
21	65.5	63.0	64.0	69.6	76.7	78.6	76.1	69.6
22	68.5	65.8	63.8	64.7	66.5	69.7	66.0	63.0
23	58.0	59.0	59.5	60.9	64.8	65.5	64.0	59.5
24	60.5	60.5	62.2	70.0	73.0	73.5	67.8	67.0
25	66.0	65.0	64.5	68.0	71.8	72.5	69.5	66.0
26	61.6	59.0	57.6	59.6	60.3	62.5	60.6	60.5
27	57.0	55.8	54.8	55.4	55.4	53.9	53.5	53.0
28	51.5	51.3	51.8	54.2	56.0	57.0	56.3	55.5
29	54.5	55.5	56.5	58.5	60.5	60.7	60.7	59.5
30	59.0	58.0	58.2	62.2	65.3	68.0	65.1	61.2
31	61.0	60.8	61.5	66.0	70.3	71.5	67.4	64.5
Hourly means.	56.9	55.0	55.2	60.2	63.8	64.2	62.4	58.9

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
June 1	62.0	61.5	61.3	63.4	68.6	71.3	68.0	65.5
2	63.8	62.5	63.0	63.0	65.5	66.0	65.2	64.0
3	62.6	62.7	62.8	66.5	69.5	70.4	69.4	67.4
4	66.0	66.5	66.5	69.3	73.0	73.2	73.4	68.5
5	66.8	65.5	66.0	66.5	71.0	74.4	72.1	69.0
6	66.9	67.5	67.5	68.5	73.5	74.5	72.0	68.6
7	66.0	64.0	63.0	71.6	76.5	72.2	73.5	71.0
8	69.0	67.5	66.5	72.5	77.4	77.5	74.0	72.0
9	70.4	69.5	68.6	73.0	68.2	73.0	68.5	68.0
10	68.3	68.0	66.5	69.2	69.2	70.4	70.0	65.8
11	65.0	64.5	64.8	67.6	69.0	68.2	62.5	62.2
12	59.0	57.0	58.0	62.7	70.7	70.7	67.4	68.3
13	67.4	69.5	71.0	71.8	74.5	74.1	74.7	70.5
14	69.0	67.0	66.8	68.5	70.9	70.0	70.2	67.0
15	65.2	64.0	67.0	71.5	75.0	75.0	68.6	64.7
16	65.5	64.4	64.9	70.3	72.2	74.3	70.7	68.0
17	65.0	63.8	64.0	67.0	71.0	71.3	71.6	68.5
18	65.8	63.5	64.6	72.2	73.5	76.5	75.5	71.0
19	68.5	66.5	66.0	74.5	77.0	78.5	77.5	72.3
20	69.5	68.0	67.8	74.0	77.5	76.6	76.5	71.5
21	69.0	69.0	66.0	63.0	66.2	65.7	66.5	62.0
22	61.0	58.0	55.0	62.6	66.1	70.0	68.0	65.0
23	62.5	61.5	61.2	69.3	73.4	77.4	74.0	70.6
24	67.6	65.8	66.2	73.0	73.5	77.8	77.6	73.0
25	70.5	69.2	68.0	75.0	77.0	80.5	79.0	75.5
26	72.0	71.5	71.0	76.9	80.0	81.2	82.8	72.8
27	71.5	69.8	71.5	76.8	82.3	80.4	83.4	79.0
28	77.0	72.5	71.6	77.0	80.0	80.6	79.5	75.4
29	73.8	72.0	71.2	76.7	82.0	82.0	77.5	72.6
30	71.0	70.0	71.5	77.5	79.0	80.0	81.3	77.0
Hourly means.	67.2	66.1	65.9	70.4	73.4	74.4	76.0	69.5

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
July 1	74.6	73.6	74.1	77.2	80.0	79.8	74.5	73.2
2	67.5	66.4	66.3	67.0	67.7	68.5	66.8	63.0
3	62.0	61.8	62.1	64.0	68.5	71.5	70.0	60.0
4	64.5	63.0	63.3	65.9	68.4	70.2	69.0	68.0
5	67.0	67.0	68.0	70.5	75.0	78.2	78.0	73.5
6	71.2	70.0	70.5	75.5	77.5	76.0	74.5	72.5
7	71.5	70.5	72.5	74.7	78.0	76.1	77.9	75.9
8	75.3	69.5	69.2	68.5	69.5	71.0	71.2	66.5
9	63.0	61.2	61.0	64.9	68.2	70.5	73.0	67.8
10	65.5	65.5	64.8	71.6	75.7	75.0	72.5	71.2
11	69.5	69.4	70.0	73.7	78.2	77.3	79.0	73.4
12	72.6	71.5	71.5	77.4	79.6	80.8	75.0	74.0
13	73.0	70.5	69.8	70.6	71.5	74.8	73.0	70.5
14	69.4	70.0	70.0	76.0	80.0	82.7	75.5	73.5
15	71.6	70.5	70.4	76.1	81.0	81.2	82.0	78.0
16	75.5	74.2	75.0	79.0	84.0	83.6	82.0	79.0
17	78.0	76.6	74.7	79.3	83.0	89.2	84.6	79.5
18	78.0	75.5	74.5	80.4	82.0	78.4	80.3	77.0
19	74.5	73.2	73.5	77.0	79.0	81.3	78.6	75.0
20	73.0	70.0	69.6	78.0	81.8	82.5	81.7	72.5
21	71.5	71.0	70.6	75.0	75.5	80.9	80.6	72.5
22	71.5	71.0	70.0	70.6	77.4	78.5	77.9	77.0
23	76.0	75.0	75.9	78.8	81.0	81.5	79.5	78.0
24	76.0	74.5	75.0	77.3	81.0	80.9	81.0	79.0
25	77.0	76.5	74.5	75.8	81.6	81.2	83.5	78.0
26	77.4	73.5	73.6	78.0	80.5	81.0	79.3	75.6
27	75.6	74.5	74.4	76.5	80.5	81.9	75.0	73.5
28	72.5	72.0	72.2	76.2	79.5	80.0	72.3	72.3
29	72.0	71.5	71.4	74.0	74.8	73.4	74.3	74.6
30	72.0	66.0	61.6	65.0	68.4	69.6	68.5	66.8
31	63.5	62.5	63.7	67.6	73.0	72.5	72.9	69.9
Hourly means.	71.7	70.2	70.1	73.6	76.8	77.7	73.0	72.9

Mean Time.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
August 1	68.0	68.5	66.8	71.3	73.5	74.0	72.8	69.0
2	67.5	66.8	66.0	72.5	76.4	80.4	80.4	74.5
3	73.2	71.0	71.5	77.3	80.0	81.2	78.9	76.2
4	74.5	73.6	73.0	78.7	82.2	79.0	75.8	74.6
5	69.0	66.0	62.5	67.4	71.2	72.5	74.2	69.7
6	67.3	66.5	68.8	69.4	76.9	74.6	73.7	70.0
7	69.0	69.5	67.5	74.4	79.0	80.4	77.5	74.5
8	74.5	76.0	74.0	78.3	82.0	82.0	80.4	77.5
9	76.5	76.0	77.0	78.4	81.6	83.0	79.5	77.5
10	76.5	74.9	74.8	77.8	79.0	78.5	75.0	74.2
11	74.1	73.3	75.0	77.5	80.8	79.5	75.6	75.4
12	74.0	71.5	71.5	77.0	79.7	79.0	78.4	76.4
13	74.5	73.0	71.5	75.8	80.0	81.0	79.6	78.4
14	76.6	72.0	72.0	65.8	66.7	66.5	64.5	63.2
15	62.1	62.0	61.8	65.5	67.2	67.2	69.4	65.0
16	62.0	60.7	59.5	66.6	71.0	70.3	68.5	68.2
17	68.0	65.5	65.5	69.0	73.0	74.0	73.9	70.6
18	68.5	66.5	64.9	70.5	76.6	76.6	76.2	72.5
19	71.5	70.8	70.5	77.5	81.0	82.3	79.0	75.9
20	73.7	71.6	72.0	77.0	77.5	77.5	74.0	70.5
21	63.0	60.0	56.6	60.4	66.5	69.0	65.4	63.0
22	62.2	58.5	58.5	63.5	68.6	69.9	66.0	65.4
23	61.5	59.5	58.9	64.5	69.7	74.0	72.3	70.2
24	69.2	69.0	68.0	68.9	74.0	78.0	77.9	75.2
25	73.5	72.6	73.3	78.9	52.2	83.6	82.1	73.6
26	75.8	73.0	72.0	65.0	67.5	68.3	64.0	61.0
27	57.5	53.0	52.8	58.6	63.5	67.4	63.5	65.0
28	64.6	65.0	66.0	68.6	74.0	76.5	73.5	72.0
29	71.0	69.5	70.2	74.5	81.0	81.0	75.5	74.5
30	78.4	69.0	67.0	65.5	68.6	69.8	67.8	66.0
31	65.0	63.5	63.2	65.7	70.5	72.2	70.6	69.0
Hourly means.	69.7	68.0	67.3	71.0	73.9	75.8	73.7	71.2

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
September 1	66.0	64.0	63.5	69.5	73.0	73.5	70.0	67.5
2	66.5	64.2	63.0	68.0	74.0	74.7	71.3	70.0
3	71.5	70.5	68.2	70.3	71.4	71.0	70.0	67.6
4	66.1	66.0	66.0	66.3	68.7	65.4	67.4	62.2
5	62.4	59.8	58.0	60.7	64.6	66.5	62.8	61.5
6	58.0	56.2	56.0	62.5	68.0	67.3	65.4	62.8
7	59.0	57.5	56.2	65.5	72.0	72.0	67.0	66.5
8	65.5	65.5	65.5	68.4	71.5	72.0	69.0	61.0
9	62.7	63.0	62.5	63.6	69.6	69.7	65.0	62.5
10	59.5	59.0	59.5	64.8	72.0	73.0	70.3	66.0
11	58.0	55.0	50.0	55.5	60.0	60.6	57.5	56.0
12	55.0	51.0	48.5	54.9	62.3	63.2	58.6	52.8
13	51.5	51.0	50.0	60.8	66.2	64.0	60.0	58.4
14	55.0	52.9	49.3	61.4	64.0	66.8	63.5	62.0
15	57.5	55.2	56.2	65.4	69.4	72.3	69.5	66.0
16	64.5	62.0	60.5	64.0	70.0	71.0	66.9	65.5
17	65.3	65.0	65.2	67.1	67.3	67.8	66.0	65.0
18	63.5	63.5	63.7	64.0	66.0	67.5	66.7	64.6
19	58.0	55.5	55.0	60.5	63.0	64.0	59.4	56.2
20	52.5	50.0	50.0	59.3	65.5	65.0	59.4	56.2
21	54.0	50.5	49.4	61.0	66.8	67.5	63.5	60.0
22	58.0	55.0	56.5	60.5	64.5	68.7	65.0	60.0
23	57.0	51.0	52.0	61.2	71.5	71.0	65.0	63.0
24	59.1	58.0	58.0	63.4	72.5	73.0	68.0	65.5
25	64.0	63.0	59.5	64.0	71.3	73.0	70.0	65.8
26	65.0	64.0	63.5	68.8	73.0	73.0	68.8	66.5
27	65.6	66.0	66.6	67.4	70.0	70.2	69.8	68.0
28	69.0	67.0	68.0	70.0	71.6	72.0	70.7	69.5
29	68.6	67.7	67.6	69.2	71.5	69.5	66.4	66.7
30	67.5	68.2	69.8	72.4	75.4	76.1	73.5	71.0
Hourly means.	61.5	59.9	59.2	64.3	68.9	69.4	66.2	63.5

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
October 1	67.3	65.8	65.0	70.2	73.2	71.4	70.0	67.3
2	66.0	62.0	59.5	62.0	65.5	65.0	61.5	59.5
3	58.6	58.8	59.0	60.5	64.5	68.0	66.0	65.0
4	63.5	59.5	58.0	63.2	63.7	64.0	57.0	55.0
5	53.6	52.0	50.9	56.7	64.0	61.5	60.0	57.6
6	55.5	54.3	53.2	57.7	61.5	60.5	57.0	55.5
7	55.5	53.5	49.5	50.2	55.0	53.3	50.2	49.3
8	46.3	45.2	45.3	50.5	56.0	59.0	53.7	51.0
9	49.4	46.5	45.0	51.5	58.9	61.6	57.0	51.0
10	48.2	46.8	44.7	52.2	62.8	62.6	56.9	54.0
11	54.0	56.5	56.6	62.5	63.5	65.3	63.0	63.5
12	63.8	63.5	63.3	64.9	65.2	63.5	60.5	57.5
13	54.5	58.2	54.5	51.8	56.8	54.3	51.5	48.4
14	47.0	45.3	44.2	50.8	56.5	56.8	53.5	50.3
15	49.0	47.3	44.2	51.5	61.0	61.0	56.0	53.0
16	50.8	48.0	46.5	53.2	63.5	61.6	58.0	53.0
17	52.0	49.5	51.6	54.2	63.5	65.5	62.0	60.0
18	60.0	59.0	58.0	59.6	51.5	51.1	49.8	47.5
19	44.5	42.0	38.8	44.6	53.0	52.6	49.9	52.6
20	54.5	55.8	55.5	62.3	57.0	56.8	49.0	46.0
21	43.0	43.0	43.2	45.5	49.5	54.0	49.2	46.8
22	45.2	43.5	44.2	49.6	54.5	54.6	51.0	46.4
23	43.3	39.5	40.0	48.0	56.5	59.0	54.0	50.5
24	47.0	46.0	46.0	49.0	62.2	62.0	56.5	51.5
25	51.8	50.5	49.5	53.9	65.5	65.4	60.0	57.5
26	56.5	53.5	55.5	60.2	58.8	57.2	52.0	49.5
27	31.8	47.2	45.0	45.0	50.0	54.2	56.0	54.0
28	58.0	56.0	55.5	57.5	57.5	59.8	57.4	54.5
29	52.0	48.0	46.5	47.5	50.0	48.6	47.0	45.5
30	44.5	42.8	41.7	43.8	46.0	46.8	51.5	53.0
31	53.5	55.2	52.5	49.0	51.4	47.9	43.5	42.5
Hourly means.	52.3	51.4	50.4	54.2	58.6	58.8	55.5	53.2

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
November 1	42.0	42.0	38.7	43.6	50.5	52.0	48.0	45.0
2	34.7	44.2	42.5	48.0	58.8	58.0	54.5	52.5
3	52.2	52.0	52.0	58.0	50.6	47.5	45.0	43.5
4	41.5	39.5	38.0	42.4	51.6	53.9	47.9	45.0
5	43.8	44.0	44.5	47.4	51.5	49.8	49.5	47.5
6	45.8	42.0	39.5	43.8	53.0	52.0	47.7	45.5
7	46.6	44.7	43.0	46.0	53.7	55.0	48.5	45.2
8	42.8	39.5	38.2	43.4	55.5	56.2	52.0	50.0
9	49.8	47.8	50.6	56.8	64.0	58.6	47.3	39.3
10	35.9	34.5	34.6	37.5	42.2	41.7	38.0	34.6
11	33.0	30.7	29.0	33.5	42.5	45.6	40.5	39.5
12	38.7	39.0	37.0	40.8	48.0	49.2	45.3	40.5
13	37.2	34.0	36.7	45.8	50.5	49.5	46.5	42.5
14	39.0	40.0	41.5	43.5	47.9	51.1	43.6	41.5
15	39.0	38.5	36.5	37.5	39.0	38.6	36.0	32.2
16	30.5	26.0	27.8	31.8	39.7	40.5	36.0	33.5
17	33.2	32.0	31.0	33.3	40.6	42.0	37.5	37.0
18	34.5	34.5	34.2	38.9	44.2	40.2	32.6	31.2
19	29.4	27.0	27.0	30.7	34.5	33.0	30.0	28.6
20	26.7	25.5	25.0	29.5	40.5	40.9	38.7	37.0
21	36.2	36.0	36.5	36.9	43.5	44.6	41.8	39.0
22	39.0	38.5	36.7	37.0	38.0	41.5	44.5	47.8
23	42.2	40.0	39.6	42.0	41.8	40.3	37.5	36.0
24	36.0	35.2	33.0	34.0	38.9	40.0	36.5	31.6
25	29.2	28.3	27.4	30.7	37.5	38.0	36.0	36.6
26	35.0	35.0	35.0	36.0	42.4	45.0	41.0	36.8
27	36.2	37.0	37.0	42.5	. .	64.5	50.5	43.0
28	40.0	37.0	35.5	39.7	55.6	54.5	49.0	45.0
29	42.8	40.0	37.0	40.4	56.0	59.0	55.0	51.0
30	50.0	44.5	38.5	37.8	42.0	41.6	39.0	34.5
Hourly means.	38.7	37.6	36.7	40.3	46.7	47.5	43.2	40.4

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
December 1	30.9	28.0	26.9	39.0	43.5	43.5	38.7	34.5
2	33.0	30.0	30.0	36.2	48.3	48.4	43.5	43.5
3	40.0	37.0	36.0	38.5	42.8	44.3	41.8	40.5
4	38.5	37.0	34.6	36.5	47.8	51.0	45.6	44.5
5	40.0	38.0	37.5	39.9	52.0	53.3	46.5	46.7
6	47.0	46.2	44.5	41.8	41.6	43.3	40.7	37.4
7	37.6	37.0	35.9	38.0	45.0	44.5	43.8	42.4
8	40.6	39.4	38.8	38.0	36.8	36.9	36.5	33.0
9	32.8	32.0	30.5	33.0	37.6	38.5	34.3	30.5
10	28.5	27.0	27.2	29.5	38.5	39.5	34.5	31.8
11	30.2	30.8	31.4	31.0	32.0	33.2	33.5	35.5
12	38.0	46.0	46.8	46.5	46.6	46.0	42.3	37.9
13	35.0	33.0	31.0	35.0	44.5	43.8	41.5	40.5
14	39.8	38.0	36.8	36.5	39.3	38.5	36.0	34.0
15	32.0	31.7	33.0	32.4	33.0	32.5	30.6	29.5
16	28.5	27.5	27.3	29.7	32.0	33.7	30.5	28.0
17	26.5	25.0	24.2	25.5	32.5	32.5	31.5	33.0
18	32.5	31.5	29.0	32.2	35.4	35.2	34.4	34.0
19	33.0	31.8	31.6	33.5	36.0	34.7	34.5	35.0
20	37.0	36.2	35.4	37.3	40.0	39.5	36.8	36.0
21	34.0	31.5	29.0	26.6	28.5	26.5	21.0	18.5
22	16.0	14.6	15.0	18.0	24.0	23.5	22.5	22.4
23	22.4	19.5	19.0	18.6	23.5	22.7	17.5	13.2
24	9.0	8.2	6.0	7.0	16.5	19.0	. .	. .
25	. .	10.0	9.0	10.0	20.5	23.0	20.4	21.2
26	22.0	22.0	22.0	23.7	32.5	33.5	33.0	27.0
27	21.0	18.0	16.0	18.0	29.7	31.0	30.0	30.0
28	32.5	32.2	32.2	33.5	35.0	35.2	33.3	33.0
29	32.0	31.0	25.8	25.0	21.8	22.0	19.0	17.5
30	16.0	11.5	8.2	12.4	24.8	26.0	21.5	32.0
31	31.0	28.5	28.0	32.2	38.3	37.0	36.2	34.0
Hourly means.	31.2	29.4	28.3	30.2	35.5	35.9	33.7	32.6

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6 .	9^{h}.
1870.	°	°	°	°	°	°	°	°
January 1	35.8	33.0	32.8	46.0	53.2	53.0	42.6	42.9
2	42.0	45.5	50.0	55.0	68.0	48.2	34.5	34.0
3	30.0	29.5	29.0	38.0	80.6	49.2	32.0	28.5
4	27.5	26.0	24.5	39.5	40.0	39.0	31.0	28.0
5	27.5	24.0	26.0	34.0	53.5	56.2	25.4	23.8
6	24.0	28.0	32.0	42.0	51.9	42.5	41.5	42.0
7	38.5	35.0	33.0	36.5	74.5	60.0	25.0	25.2
8	26.5	27.5	28.5	33.6	46.2	53.0	21.0	16.5
9	16.0	15.0	14.0	21.7	68.2	51.0	20.4	22.0
10	25.0	26.0	26.5	32.0	38.0	46.8	31.0	31.5
11	26.0	25.0	24.0	37.5	90.5	73.9	37.0	36.0
12	36.0	36.0	36.0	50.2	59.9	56.0	47.0	46.0
13	45.0	44.0	43.0	58.0	100.1	72.6	50.5	49.0
14	43.0	35.8	30.0	40.0	37.0	34.0		
15	31.0	32.0	32.5	39.0	43.0	41.3	39.5	40.8
16	37.0	33.5	33.5	43.0	97.0	77.2	40.5	38.0
17	42.5	40.6	41.2	44.5	70.0	80.0	57.0	54.5
18	50.5	48.3	41.0	43.8	53.5	69.0	34.5	32.5
19	29.0	26.0	24.5	35.5	69.0	66.0	33.0	28.0
20	28.2	25.2	28.0	40.5	61.1	51.0	41.5	38.0
21	37.5	37.0	34.8	43.5	92.3	75.5	37.5	32.5
22	29.0	27.5	26.0	42.5	94.2	72.2	45.5	43.5
23	47.0	48.0	41.5	53.6	79.0	77.0	55.0	49.5
24	52.0	51.2	49.0	49.3	49.2	45.1	39.0	40.0
25	42.0	44.0	45.0	44.0	48.0	94.2	78.0	41.9
26	34.2	34.0	35.0	53.5	105.0	84.5	47.0	43.5
27	41.5	40.0	38.5	53.2	79.5	69.5	46.5	44.2
28	42.0	40.2	38.0	47.0	59.2	51.0	40.0	38.5
29	37.0	37.6	38.0	40.0	42.5	44.0	39.0	36.2
30	40.2	36.5	30.8	37.5	92.0	62.0	37.5	33.5
31	33.5	33.8	34.0	45.0	58.0	50.0	40.0	36.2
Hourly means.	35.4	34.4	33.5	42.5	66.2	59.5	39.6	36.5

Mean Time.	0^{h}.	3 .	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
February 1	33.5	34.0	35.5	56.2	75.0	58.8	33.0	28.2
2	28.0	26.8	25.2	51.0	83.0	74.4	40.2	36.0
3	32.0	31.5	31.0	58.0	92.5	76.0	40.2	34.5
4	35.5	30.0	26.0	53.0	87.2	47.2	29.8	29.0
5	28.7	28.5	29.0	34.2	41.5	54.6	35.8	34.5
6	33.0	32.0	32.0	37.2	43.0	47.0	35.1	29.0
7	27.0	25.5	23.7	43.5	46.0	58.0	36.0	35.0
8	33.0	32.0	33.0	40.0	49.0	58.0	30.5	33.5
9	32.0	31:0	30.5	58.0	67.0	80.0	33.0	33.5
10	34.0	33.0	32.0	43.0	91.0	71.0	30.5	25.5
11	23.0	20.8	22.0	41.0	75.2	49.6	37.0	37.0
12	40.0	41.5	43.0	46.0	56.5	92.0	41.5	35.3
13	35.5	23.0	21.5	64.0	87.8	76.0	27.5	25.0
14	24.5	26.0	29.5	36.2	48.0	48.5	43.5	48.0
15	47.0	46.0	45.0	50.0	54.5	46.0	40.9	38.2
16	32.2	30.5	29.2	68.6	98.4	91.0	36.5	31.5
17	30.0	30.5	26.2	62.0	97.2	65.0	46.0	45.5
18	44.5	48.0	50.0	53.0	62.5	42.0	29.0	27.0
19	25.0	25.5	22.0	64.5	85.0	82.0	37.0	29.5
20	33.5	33.0	32.0	49.0	61.6	34.0	25.0	19.0
21	13.5	11.6	9.0	60.5	87.0	71.5	15.6	11.7
22	7.0	7.2	8.0	35.8	55.3	56.5	22.5	24.5
23	26.2	27.0	28.0	36.3	50.9	67.5	31.0	28.0
24	26.0	25.0	24.0	63.0	86.0	68.0	31.0	29.5
25	24.9	21.7	21.0	68.8	93.0	82.5	32.0	25.2
26	23.0	21.5	21.0	41.0	69.2	76.0	41.5	31.8
27	30.8	32.0	33.5	39.0	38.8	38.2	36.9	34.5
28	32.2	30.2	31.5	52.0	53.5	54.0	40.0	37.5
Hourly means.	29.8	28.7	28.3	50.2	69.1	63.0	34.2	31.3

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9 .	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
March 1	32.5	33.5	31.5	45.2	62.9	65.0	38.5	30.0
2	31.3	30.0	29.5	40.0	75.0	53.8	32.2	29.6
3	28.0	26.0	24.0	69.5	89.5	82.0	32.3	25.0
4	30.0	38.0	29.5	37.0	51.3	78.9	37.0	32.0
5	32.0	31.0	30.5	35.5	54.0	78.0	30.8	26.7
6	24.2	22.0	21.3	34.0	33.5	35.0	27.0	26.5
7	26.2	26.5	27.0	48.4	111.5	76.5	35.8	35.2
8	33.2	28.5	24.5	76.5	75.8	43.0	33.0	26.2
9	25.6	21.2	21.0	63.0	71.5	86.0	34.2	27.5
10	24.0	22.5	22.0	78.0	98.0	93.6	48.0	42.8
11	33.2	31.0	29.0	73.2	103.7	111.5	50.5	45.0
12	37.8	36.7	35.0	56.2	68.0	54.5	42.5	35.0
13	35.0	37.5	35.5	44.0	66.5	59.5	39.8	35.0
14	34.0	32.5	31.5	47.2	72.2	68.0	41.0	36.1
15	28.9	26.5	24.4	53.0	58.2	51.2	41.2	38.0
16	37.0	34.2	27.5	47.0	83.0	77.5	29.0	22.0
17	20.0	19.0	21.5	51.0	56.5	55.0	29.8	31.6
18	31.0	34.0	30.0	82.5	93.5	87.2	41.8	33.0
19	31.5	30.0	29.5	84.0	100.6	95.6	44.0	31.8
20	28.5	27.5	27.0	83.0	103.2	113.5	56.0	51.5
21	47.0	49.0	47.0	59.0	80.0	113.0	103.0	47.0
22	40.0	39.0	36.5	90.0	104.3	104.7	50.5	46.0
23	38.0	35.0	33.0	84.0	55.0	98.2	42.9	36.5
24	32.5	29.0	28.2	88.5	100.5	95.0	96.3	57.5
25	34.0	30.0	24.5	87.0	104.3	98.5	46.0	37.0
26	34.0	33.0	32.5	74.0	76.7	60.0	46.0	42.0
27	41.0	42.0	44.0	48.0	56.5	75.0	52.0	48.0
28	48.0	45.0	44.0	57.3	55.3	66.5	46.1	42.0
29	42.5	39.0	36.5	90.0	99.5	99.0	52.3	43.0
30	36.2	33.5	32.5	93.0	110.3	105.2	54.2	46.0
31	43.5	42.0	42.0	55.7	58.6	57.0	45.2	43.0
Hourly means.	33.5	32.4	30.7	63.7	78.4	78.6	45.1	37.0

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
April 1	40.0	39.5	39.0	43.0	51.0	50.0	45.0	43.0
2	42.0	42.2	42.0	49.0	53.0	53.6	44.5	43.0
3	42.8	42.0	41.0	49.0	59.0	58.0	44.0	42.0
4	39.0	38.0	36.0	47.0	54.3	51.5	40.0	35.2
5	32.5	32.3	33.3	53.5	53.8	61.0	43.7	35.0
6	33.0	32.0	32.8	91.0	110.0	. .	50.0	48.0
7	45.0	43.0	33.5	95.2	93.0	72.2	71.0	51.0
8	50.0	42.0	42.0	102.0	116.5	119.5	110.7	57.0
9	47.5	43.0	42.0	90.9	115.2	121.5	103.0	60.0
10	50.0	46.0	46.0	74.5	88.5	99.0	80.0	58.0
11	48.0	47.3	50.0	79.0	114.0	90.0	77.0	58.8
12	49.0	50.0	53.0	107.0	119.6	119.6	114.0	65.0
13	55.0	50.0	47.5	108.0	123.8	129.7	117.5	66.0
14	57.5	57.2	51.5	112.2	118.0	128.0	116.0	70.0
15	63.0	60.0	55.2	108.9	127.4	127.6	123.2	73.5
16	55.0	47.5	45.0	49.7	60.0	58.8	53.6	44.0
17	43.0	45.5	47.0	53.0	62.0	72.0	86.0	55.5
18	52.5	51.5	47.0	55.5	74.0	83.9	90.2	48.5
19	40.0	38.0	39.1	79.5	95.2	115.5	71.2	52.5
20	41.5	41.5	41.9	51.4	89.2	89.0	82.0	52.0
21	49.0	47.5	48.0	106.0	102.0	123.9	86.4	61.2
22	54.0	51.2	46.0	96.2	118.0	110.0	108.0	74.6
23	48.5	47.0	48.6	101.6	118.5	122.2	116.5	78.0
24	55.5	49.0	47.0	106.0	122.1	123.6	123.8	69.0
25	54.0	53.0	52.0	89.2	98.1	80.2	103.1	59.0
26	42.0	38.0	38.5	105.0	120.0	123.0	110.0	56.5
27	48.0	47.0	50.2	111.5	113.0	115.5	114.5	69.0
28	59.0	59.0	63.0	109.3	126.0	136.0	124.5	73.5
29	60.5	59.0	57.5	58.2	59.6	59.7	59.5	48.8
30	47.0	41.0	41.0	104.0	121.0	124.2	124.0	61.5
Hourly means.	48.1	46.0	45.2	82.9	95.8	97.2	87.7	56.9

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
May 1	49.0	46.0	47.0	100.0	126.0	130.5	123.9	75.5
2	49.0	45.0	50.2	106.5	120.5	116.0	101.8	63.0
3	48.0	44.0	46.2	73.5	73.5	63.5	64.0	54.0
4	52.0	50.2	50.0	95.7	124.0	133.0	125.0	81.5
5	63.6	60.0	59.0	75.0	123.0	112.0	90.0	58.0
6	53.5	47.8	51.5	107.2	122.6	124.0	112.1	72.0
7	64.0	59.0	56.5	116.7	130.2	125.0	78.0	66.6
8	56.0	56.0	57.3	113.3	125.6	123.2	110.0	64.0
9	55.0	49.5	54.0	111.3	125.3	127.0	123.1	67.5
10	53.5	52.0	54.0	109.5	98.7	123.5	96.9	60.3
11	55.0	51.5	51.5	59.1	66.4	66.0	90.0	54.0
12	42.0	40.2	46.0	109.5	130.4	128.3	102.0	59.5
13	55.0	52.5	54.6	108.7	133.0	134.5	113.0	66.5
14	54.3	53.5	53.5	114.0	129.3	132.0	124.7	73.2
15	53.0	49.5	53.0	119.5	133.5	135.0	135.0	83.0
16	55.5	53.5	56.5	123.0	138.0	140.0	133.5	90.5
17	61.6	59.5	59.7	116.1	129.2	133.2	119.7	66.0
18	59.8	54.0	57.5	74.7	93.3	127.5	119.8	71.6
19	56.0	52.5	61.2	80.0	130.0	133.5	126.0	80.0
20	63.0	63.0	66.4	113.2	138.0	140.2	132.5	82.0
21	63.0	59.8	68.0	117.0	135.2	140.0	140.2	85.0
22	69.0	62.0	67.0	118.5	130.0	132.0	127.6	80.2
23	60.7	60.3	62.5	81.0	124.4	101.0	111.8	74.0
24	62.0	59.5	65.0	122.0	139.0	130.4	104.2	69.0
25	65.0	62.0	68.0	113.0	136.5	139.3	135.6	86.5
26	66.0	62.5	62.9	81.8	100.0	92.0	78.0	64.5
27	60.0	58.5	60.0	66.2	75.2	75.2	60.5	55.4
28	53.0	51.0	54.5	65.0	75.0	82.0	72.7	58.0
29	54.0	55.3	58.4	68.1	81.4	96.0	90.0	67.0
30	58.0	56.2	62.0	93.0	136.5	127.6	128.0	75.0
31	59.0	59.6	66.2	92.5	128.2	134.0	130.2	70.2
Hourly means.	57.0	54.4	57.4	98.2	117.8	119.2	109.6	70.1

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
June 1	63.0	61.2	61.9	70.0	125.0	138.0	121.0	67.5
2	63.0	61.0	64.2	75.6	84.0	91.0	83.2	67.1
3	63.5	63.1	63.8	86.0	110.0	100.0	100.0	73.0
4	66.0	67.0	68.6	88.8	127.0	128.5	115.0	102.0
5	68.5	66.5	66.8	85.0	125.0	133.0	133.0	84.8
6	64.0	62.0	68.0	75.5	137.8	139.0	133.0	88.0
7	65.0	64.5	67.0	123.0	137.8	142.0	129.8	82.0
8	70.0	67.0	68.0	122.5	137.4	141.7	130.5	81.2
9	68.6	66.0	74.0	98.5	131.0	116.8	109.5	68.2
10	68.2	68.0	68.0	111.0	128.0	133.6	112.0	78.5
11	66.0	64.0	68.5	120.2	133.6	136.5	127.2	76.0
12	64.0	56.0	58.6	117.8	129.2	131.0	110.0	76.5
13	68.0	70.0	71.6	122.2	136.5	135.0	126.0	80.0
14	73.0	68.5	70.0	118.0	140.9	141.0	119.0	79.5
15	62.0	60.0	72.2	123.0	138.0	145.0	134.5	72.0
16	65.0	64.0	69.0	114.8	125.5	143.0	92.0	78.5
17	67.0	65.2	65.0	121.0	138.6	138.6	130.0	85.0
18	66.0	62.5	66.5	117.8	142.0	139.5	147.0	103.5
19	69.0	65.5	70.0	121.0	134.9	134.2	131.0	100.0
20	70.0	67.0	69.5	124.0	140.0	140.7	140.8	94.0
21	69.0	66.0	68.6	123.0	133.7	134.5	131.0	103.2
22	71.0	58.0	58.2	122.0	134.0	134.0	132.0	104.0
23	65.0	60.0	63.5	120.0	140.9	142.5	138.0	98.0
24	66.0	65.0	66.5	124.0	143.5	144.0	139.0	110.0
25	70.4	68.0	69.5	130.2	143.0	144.0	141.6	104.5
26	73.0	69.0	73.1	130.9	144.6	146.0	146.0	110.0
27	70.0	68.5	74.5	128.5	144.0	145.0	142.3	111.5
28	78.9	74.5	74.6	130.0	145.2	145.5	142.2	86.0
29	74.9	70.0	72.5	132.0	144.5	152.7	121.0	92.0
30	76.0	68.0	76.0	138.5	145.7	150.0	135.5	111.5
Hourly means.	68.1	65.2	68.2	113.8	134.0	136.2	126.4	88.9

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
July 1	75.0	73.0	76.8	138.0	144.8	149.0	142.5	85.0
2	72.5	67.5	68.0	71.0	76.0	82.0	85.0	68.0
3	63.2	60.5	64.5	83.7	110.0	135.0	94.5	76.2
4	69.0	61.4	66.0	97.0	124.9	141.0	106.0	77.0
5	69.0	67.5	72.0	92.0	134.0	141.0	137.0	103.5
6	71.0	68.5	74.8	119.4	119.5	132.0	109.0	93.0
7	71.8	71.0	76.0	97.0	134.0	143.5	130.5	82.5
8	74.5	69.9	70.5	122.7	138.2	133.1	132.0	105.0
9	64.0	60.0	62.0	124.5	130.0	137.5	137.5	95.0
10	63.0	60.8	68.0	120.8	137.0	139.0	116.5	81.0
11	69.0	69.0	70.6	129.2	137.0	134.1	104.3	104.5
12	74.0	69.0	76.0	124.6	133.7	145.8	112.0	78.5
13	71.5	70.0	72.0	125.0	142.0	141.5	138.5	105.0
14	65.5	64.5	69.0	127.8	150.0	150.0	144.5	89.2
15	69.5	68.0	70.5	126.5	146.6	148.5	133.7	102.0
16	73.0	70.5	77.0	125.0	148.5	147.0	140.6	98.0
17	76.0	76.0	74.3	133.5	147.0	149.5	145.1	114.0
18	76.0	75.0	77.0	135.3	150.5	152.9	130.7	107.5
19	74.0	71.2	76.0	122.0	147.5	149.2	145.0	97.2
20	74.0	71.0	71.0	129.5	146.3	151.7	142.0	96.2
21	79.0	73.0	72.5	128.8	143.4	145.5	131.5	83.0
22	75.0	73.0	82.0	119.5	143.0	150.0	139.8	86.1
23	76.3	75.0	77.9	137.2	146.7	148.5	142.0	101.0
24	77.5	74.0	77.5	96.8	148.7	147.0	147.0	103.5
25	78.5	76.5	76.0	126.5	148.3	148.8	114.0	104.0
26	81.0	76.2	76.3	138.0	147.7	146.0	140.0	92.2
27	76.0	74.0	76.0	130.0	151.3	140.0	138.0	83.0
28	75.0	71.5	72.0	130.5	144.2	147.0	130.0	73.5
29	72.3	73.6	72.0	128.5	141.2	142.0	125.1	81.0
30	75.0	68.0	64.0	122.9	134.2	141.0	140.7	89.0
31	64.5	60.0	63.5	102.0	142.5	144.1	133.5	90.3
Hourly means.	72.4	69.6	72.3	119.5	138.3	142.0	129.3	91.7

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.	°	°	°	°	°	°	°	°
August 1	69.0	69.0	68.2	103.8	134.2	133.5	101.6	79.0
2	66.0	64.0	66.0	120.0	142.0	142.1	135.7	96.0
3	74.5	71.0	69.2	127.0	143.5	143.0	138.8	89.0
4	75.8	74.4	74.8	129.5	134.5	147.4	102.1	85.0
5	71.5	65.0	64.5	126.3	138.6	140.0	136.0	94.5
6	65.0	63.5	62.5	124.0	139.2	142.5	139.5	95.5
7	70.5	64.8	76.0	123.6	144.0	144.0	144.0	92.0
8	76.0	75.5	75.0	128.2	148.2	148.4	141.2	98.0
9	79.0	75.2	77.5	95.5	146.8	136.3	134.0	83.0
10	76.0	75.0	75.2	104.0	147.3	108.8	108.5	81.8
11	74.5	73.6	75.5	96.5	136.8	145.0	82.6	78.5
12	76.0	73.6	73.8	128.8	145.8	145.8	145.8	85.0
13	73.5	71.5	71.5	120.7	136.5	144.7	132.8	83.0
14	78.0	72.8	73.0	76.0	87.3	97.0	88.6	70.2
15	58.5	61.0	64.1	102.9	109.4	96.5	87.0	77.0
16	61.0	59.5	59.7	98.0	126.8	137.2	124.4	76.9
17	68.6	65.2	65.5	122.0	137.0	140.0	134.0	78.5
18	65.0	64.0	66.2	120.0	138.6	140.9	136.2	92.0
19	69.5	67.0	67.5	127.2	142.8	145.0	139.0	91.5
20	76.2	72.0	75.0	131.2	142.5	144.3	139.0	82.0
21	72.5	69.5	60.0	110.5	127.6	129.0	119.0	90.0
22	60.2	58.0	57.0	94.9	120.5	124.6	111.2	68.0
23	62.0	56.0	57.5	100.0	127.8	130.2	118.8	80.0
24	69.0	66.0	72.0	71.0	112.5	135.0	128.0	81.6
25	72.0	71.5	72.0	126.0	144.8	149.5	141.6	85.0
26	80.0	75.5	73.0	119.6	133.5	134.4	129.0	67.5
27	56.5	51.0	55.0	101.0	126.5	138.3	129.1	70.0
28	68.0	64.0	68.5	119.0	138.5	139.9	139.0	77.5
29	70.0	69.0	70.2	124.5	143.7	147.8	142.0	84.5
30	78.0	68.5	67.0	87.2	139.0	136.0	131.0	71.0
31	66.5	63.0	61.8	104.3	129.0	123.8	106.1	74.0
Hourly means.	70.3	67.4	68.2	111.7	134.3	135.8	125.3	82.5

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
September 1	66.5	62.0	60.5	94.5	139.2	140.0	126.3	90.0
2	67.0	64.5	64.6	122.0	142.2	141.2	136.0	79.0
3	74.0	72.5	68.0	82.5	110.5	109.2	119.2	68.2
4	62.5	64.0	64.5	81.5	133.7	138.0	102.0	74.3
5	63.5	58.0	58.0	117.2	131.5	133.0	127.2	67.5
6	57.0	54.0	52.0	114.4	135.5	136.6	131.0	67.0
7	60.0	56.0	54.5	119.0	135.8	137.5	129.5	74.5
8	65.6	66.0	66.9	125.0	140.5	140.0	121.5	76.0
9	61.5	59.5	63.0	84.6	140.3	141.9	131.1	68.2
10	58.5	55.0	66.0	115.0	146.2	145.5	125.0	75.5
11	58.0	55.0	51.0	113.5	126.0	130.0	114.5	59.0
12	54.5	52.0	46.0	108.9	128.7	128.8	117.1	67.0
13	59.0	49.0	50.0	112.5	134.0	133.7	125.6	68.2
14	60.5	52.5	52.5	114.0	131.0	134.5	125.8	65.5
15	59.8	56.0	53.2	111.6	115.2	136.0	126.8	75.5
16	64.5	63.0	59.5	110.0	126.8	137.8	125.9	73.2
17	65.0	65.0	65.4	75.9	86.0	86.0	88.0	68.0
18	64.0	63.0	63.5	68.0	93.2	89.0	79.0	68.0
19	53.0	54.0	55.0	110.0	126.2	130.0	120.8	59.0
20	54.0	48.0	50.0	108.0	127.8	130.7	120.0	59.0
21	54.0	48.5	47.0	109.2	128.3	130.0	120.5	63.5
22	56.0	53.2	56.0	69.2	123.2	125.2	120.0	62.5
23	57.0	48.5	51.3	105.5	132.0	135.7	122.2	65.5
24	59.5	54.0	55.5	111.0	132.6	136.7	128.0	62.0
25	60.0	58.2	55.5	111.0	131.0	136.5	122.0	72.0
26	65.5	63.0	62.0	113.0	135.8	137.5	113.5	71.5
27	64.5	64.0	65.5	75.6	84.5	96.0	95.0	68.0
28	68.0	66.0	68.0	80.2	101.0	103.2	82.0	69.9
29	68.0	67.0	67.0	72.2	89.0	94.5	77.5	70.6
30	68.5	66.5	69.0	78.0	98.4	112.2	109.5	72.0
Hourly means.	61.6	58.6	58.7	100.4	123.5	126.9	116.1	69.3

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
October 1	66.5	63.0	62.5	115.6	135.0	139.0	77.0	65.4
2	64.5	63.0	61.0	78.0	71.0	67.0	61.0	59.0
3	58.0	58.5	59.0	71.0	89.0	120.0	128.0	67.0
4	63.0	58.0	54.2	105.5	126.0	122.5	111.2	68.5
5	53.0	51.5	50.0	99.3	132.5	131.0	79.0	61.2
6	55.5	51.0	50.2	72.5	92.4	98.9	83.5	59.0
7	56.0	53.0	48.5	70.4	117.5	118.2	85.0	59.0
8	46.2	45.0	64.6	95.0	122.5	121.2	110.3	50.8
9	47.5	45.5	42.0	96.0	123.5	124.5	116.5	59.0
10	46.0	45.0	41.0	95.0	127.2	127.0	63.9	54.0
11	51.5	56.0	56.9	87.5	82.5	81.0	85.0	62.0
12	63.0	63.5	62.0	101.0	124.0	124.8	106.2	57.0
13	58.0	59.5	55.0	94.5	118.5	120.2	94.6	50.2
14	45.2	44.0	41.2	103.2	120.5	121.2	108.0	48.5
15	45.0	44.5	42.2	95.0	119.0	120.5	114.0	52.0
16	49.0	45.0	42.0	93.5	124.0	124.2	107.9	54.5
17	48.8	47.6	51.2	71.0	117.2	128.5	92.5	62.0
18	58.8	57.9	56.5	96.2	124.9	113.5	92.0	50.0
19	43.0	40.0	33.0	90.0	115.0	102.0	53.0	54.0
20	54.6	56.0	55.2	65.2	60.7	57.0	49.2	43.0
21	38.0	39.5	41.0	63.0	76.7	98.2	43.0	41.0
22	41.0	38.5	39.5	46.5	115.0	117.0	100.0	49.5
23	44.6	39.3	38.5	86.2	113.2	115.0	74.0	51.5
24	45.0	44.5	45.5	72.2	116.6	117.4	100.0	51.5
25	47.0	46.0	44.2	90.2	120.0	119.0	101.0	57.0
26	53.5	50.0	53.0	86.0	102.8	110.0	69.0	53.5
27	52.0	48.0	47.0	57.0	72.2	67.1	63.0	60.5
28	58.0	54.5	54.0	94.1	123.0	125.0	96.0	60.0
29	60.0	57.5	48.7	75.5	112.0	107.5	69.0	48.7
30	45.0	46.0	43.5	71.0	94.0	62.5	55.3	52.5
31	53.0	54.5	54.0	83.8	114.0	112.0	81.3	43.5
Hourly means.	51.9	50.5	49.6	84.5	109.7	110.1	86.1	55.0

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
November 1	46.0	41.0	38.5	81.0	114.0	116.3	87.5	43.5
2	40.0	39.0	37.0	71.3	122.5	122.2	78.5	61.5
3	51.0	50.0	48.0	77.0	108.0	109.0	76.5	46.5
4	42.5	37.5	34.0	60.0	109.8	113.0	71.2	45.5
5	40.0	41.0	39.5	67.9	93.0	65.0	59.5	45.0
6	42.0	39.0	37.5	69.0	99.0	61.5	43.9	45.0
7	46.3	40.6	39.5	61.8	108.2	112.0	72.0	56.5
8	46.0	39.0	33.0	66.8	110.5	110.0	75.0	47.5
9	45.0	44.5	45.0	74.1	121.1	85.0	60.5	51.5
10	45.0	38.0	35.6	64.5	99.5	68.2	68.0	40.0
11	52.5	27.0	24.0	53.8	101.5	101.5	72.0	38.0
12	38.0	37.5	35.5	62.0	106.8	104.0	68.2	44.0
13	40.1	34.0	31.8	76.0	108.5	98.0	76.5	47.5
14	39.0	40.0	42.0	54.2	88.0	99.5	70.0	48.2
15	42.0	40.5	36.0	59.1	89.0	89.8	51.6	43.5
16	33.0	26.6	25.6	50.2	104.0	94.0	54.2	35.0
17	30.0	31.5	24.5	55.2	100.0	98.0	61.5	36.0
18	29.5	29.0	30.0	50.5	109.0	80.0	74.5	32.3
19	31.5	25.0	23.5	37.8	94.5	95.0	48.0	32.0
20	24.5	21.5	18.5	47.5	95.8	98.9	60.2	39.0
21	32.0	33.5	36.0	48.2	88.0	93.1	56.6	43.6
22	40.0	40.2	38.6	39.0	40.5	44.2	45.0	48.0
23	42.5	40.0	37.0	63.2	100.0	99.0	54.5	37.5
24	37.0	34.5	30.0	59.0	92.3	95.0	61.0	41.5
25	33.0	27.5	25.0	38.5	54.0	54.0	46.0	36.0
26	35.0	35.0	34.0	57.0	97.8	98.0	66.0	36.0
27	34.5	35.0	34.5	62.0	. .	110.0	76.5	49.5
28	41.9	39.0	34.5	56.0	115.8	106.8	69.0	45.0
29	39.2	39.0	34.5	55.5	104.9	110.3	78.0	54.0
30	48.5	46.0	39.5	47.6	67.1	65.5	52.0	45.0
Hourly means.	39.6	36.4	34.0	58.8	98.0	93.2	64.4	43.8

Mean Time.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.	°	°	°	°	°	°	°	°
December 1	38.5	36.0	25.0	41.0	96.0	97.8	61.5	36.0
2	32.0	28.0	28.5	47.8	101.0	101.6	68.2	46.0
3	43.0	38.2	33.0	58.1	96.0	59.0	43.0	41.0
4	36.0	33.5	31.5	48.5	98.5	69.5	45.8	42.0
5	39.0	35.0	34.5	49.2	92.0	68.2	43.0	43.5
6	46.0	47.0	46.5	53.2	53.0	64.0	42.0	34.8
7	35.8	34.7	34.0	51.0	72.0	49.5	47.5	39.6
8	39.0	40.0	39.0	54.2	54.4	49.0	37.0	33.7
9	32.5	30.0	27.0	55.1	80.0	55.2	33.5	28.0
10	25.3	23.5	23.8	40.2	93.0	56.0	33.0	29.5
11	27.5	29.0	31.0	37.0	38.6	37.8	34.5	35.0
12	37.2	45.0	46.5	50.0	94.8	62.5	63.0	41.0
13	34.5	32.0	29.5	44.0	100.8	104.5	51.0	44.0
14	42.5	40.5	34.0	46.0	88.6	90.0	55.0	39.0
15	34.0	32.0	32.5	46.0	59.0	79.0	55.6	42.0
16	32.0	31.0	29.0	62.5	82.5	82.5	57.5	26.5
17	25.0	22.5	19.5	33.6	86.0	86.9	62.0	33.0
18	32.0	31.0	27.0	38.0	95.2	93.4	46.0	36.6
19	35.3	33.0	30.5	39.8	56.5	52.2	36.5	35.5
20	37.5	35.0	33.0	43.0	95.4	93.3	60.0	40.0
21	37.0	32.5	29.5	42.0	77.0	77.5	45.2	20.2
22	17.5	14.9	14.5	28.0	81.5	80.0	46.0	20.0
23	21.0	19.0	18.0	23.2	74.4	77.0	59.5	14.0
24	10.5	6.0	4.0	24.0	68.0	69.0	26.0	13.0
25	6.7	6.5	5.5	18.0	77.8	78.0	46.0	17.2
26	18.0	20.0	22.0	31.0	83.8	79.8	49.5	31.5
27	17.0	14.0	12.0	31.0	78.0	81.0	41.9	31.0
28	33.0	33.6	32.0	38.0	48.0	50.5	44.9	34.0
29	31.6	30.0	25.6	35.5	67.7	87.0	45.5	20.0
30	16.0	14.0	5.5	22.5	81.8	58.5	32.0	31.5
31	32.0	29.0	25.5	47.0	92.0	76.6	44.0	39.0
Hourly means.	30.5	28.9	26.7	41.2	79.4	73.1	46.9	32.8

MAXIMUM AND MINIMUM TEMPERATURES DURING THE YEAR 1870.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	47.8	35.1	43.0	33.5	42.5	34.5	44.0	35.5	79.0	47.0	74.3	61.5	92.0	74.5	82.6	67.5	85.6	63.0	82.0	64.5	65.7	38.3	50.4	26.0
2	55.0	39.2	53.0	29.8	37.5	30.5	47.5	40.5	68.5	49.5	68.0	62.0	69.0	67.5	90.5	67.0	89.0	64.0	69.0	61.0	69.0	42.5	58.7	30.0
3	43.0	31.0	50.3	37.0	41.0	25.7	45.5	40.5	63.0	45.0	73.0	62.2	74.0	62.0	90.5	71.0	80.0	69.0	73.0	58.5	62.0	50.5	53.0	36.5
4	35.5	26.5	50.3	29.5	43.6	28.2	45.4	36.0	82.2	50.0	78.2	65.8	76.0	63.0	91.2	73.0	82.4	65.2	74.8	56.7	65.8	38.5	50.6	35.5
5	38.2	26.0	38.8	28.5	37.8	30.5	46.0	33.0	78.5	55.4	80.0	65.4	84.2	68.5	87.0	66.8	81.7	58.5	71.2	50.5	57.5	45.5	62.5	36.5
6	42.8	28.8	37.0	32.0	38.0	25.0	56.0	34.0	73.	49.0	79.6	67.0	82.0	70.2	90.5	63.5	84.5	55.0	. .	. .	60.4	39.2	51.0	45.0
7	34.8	29.5	40.5	25.8	41.0	26.5	55.0	37.0	74.0	55.2	83.0	63.0	86.8	71.5	92.5	67.0	88.0	56.8	64.4	49.9	64.2	41.5	51.0	37.2
8	38.0	22.5	34.0	32.0	38.6	27.0	68.0	38.0	67.4	55.5	85.1	65.5	82.4	69.0	93.6	75.2	86.5	67.5	73.1	46.5	64.5	38.0	46.2	39.8
9	30.6	15.5	39.6	31.7	41.0	24.2	67.0	42.0	74.0	52.0	78.5	68.0	82.3	62.0	90.7	76.0	82.5	62.5	73.5	45.0	72.6	48.2	45.5	30.8
10	39.0	22.0	40.0	33.8	54.5	26.0	62.0	40.0	69.0	51.5	73.0	66.7	83.0	64.2	85.5	74.9	85.4	58.9	74.5	43.0	52.0	37.4	46.5	27.0
11	52.6	25.5	40.0	23.5	60.4	31.2	61.0	49.0	56.8	50.5	77.5	62.5	83.0	69.8	86.4	73.3	76.5	54.5	66.0	54.0	55.5	29.5	38.7	30.0
12	51.8	37.5	57.5	38.0	58.7	35.0	69.2	51.0	70.0	45.0	78.3	56.5	89.5	70.2	91.0	71.2	78.5	48.8	73.5	63.0	59.9	36.0	51.5	34.2
13	69.5	45.0	49.0	25.0	43.0	36.0	75.9	46.7	70.5	50.7	81.0	69.5	87.0	69.0	89.5	71.5	81.6	49.5	66.4	53.0	62.5	36.0	51.5	30.5
14	55.0	29.5	45.2	28.5	44.0	32.3	79.0	53.0	77.7	50.3	80.5	66.5	89.8	69.5	80.0	65.5	83.0	49.5	68.4	44.5	58.3	40.3	. .	. .
15	39.8	30.0	50.5	41.0	45.0	27.5	84.5	57.5	83.8	53.5	84.0	64.7	89.5	70.0	74.0	62.0	82.5	55.0	72.8	44.5	46.7	37.5	40.4	33.5
16	56.0	34.9	51.0	30.7	32.5	25.0	46.5	43.2	84.7	55.4	79.8	64.0	91.5	74.0	79.5	59.3	86.5	59.9	73.7	45.2	49.5	26.5	40.5	31.0
17	67.0	40.0	53.0	30.2	30.2	22.0	57.4	42.5	78.5	60.3	82.0	63.6	97.8	75.5	84.0	65.4	71.3	65.0	73.2	49.0	51.2	30.5	41.7	24.0
18	58.6	39.5	57.5	29.0	46.8	22.5	56.0	45.0	70.0	54.8	87.0	64.0	95.7	77.5	88.0	64.8	69.5	63.2	64.7	56.0	51.2	34.0	41.4	27.6
19	45.0	27.6	57.8	22.5	52.5	31.5	54.3	39.2	77.0	57.8	85.0	66.0	92.6	73.7	91.7	69.8	79.6	56.5	61.6	38.5	40.6	27.5	41.2	31.0
20	43.0	29.0	44.5	25.0	62.5	29.0	55.5	40.5	84.0	63.0	85.5	67.2	93.3	70.2	90.5	72.8	79.0	48.5	63.0	51.0	50.5	25.5	46.8	34.0
21	50.6	34.2	28.5	10.3	68.3	48.5	63.0	47.0	85.9	62.8	80.6	69.7	91.5	70.5	82.2	61.0	80.0	47.8	61.3	42.8	52.3	36.8	40.4	21.4
22	54.0	29.9	30.5	10.5	57.0	35.0	64.0	47.2	78.3	64.3	81.0	57.5	91.0	74.3	80.0	59.5	78.0	55.0	66.9	43.6	52.0	37.0	. .	15.0
23	64.5	43.0	36.2	24.5	48.3	35.0	73.5	47.0	71.5	59.0	88.6	61.0	92.2	75.0	84.0	59.5	84.0	51.0	67.3	39.0	49.5	40.0	. .	17.0
24	59.2	39.0	38.5	25.0	52.0	30.5	74.5	46.0	79.6	61.0	91.5	65.2	91.5	75.5	83.5	68.5	89.0	58.0	69.7	45.0	47.0	33.2	20.0	7.0
25	51.0	39.0	41.8	24.0	53.0	28.0	70.8	51.6	81.6	64.0	93.0	68.0	94.5	74.0	96.0	73.0	88.5	60.0	73.5	48.5	42.0	27.0	28.8	8.2
26	60.7	36.0	48.5	25.0	49.6	31.3	70.5	39.5	67.5	60.6	95.5	70.0	95.5	75.0	84.0	73.6	86.0	64.0	66.3	52.2	53.5	34.5	36.2	20.5
27	56.0	41.5	37.3	32.0	59.5	38.0	71.2	47.6	64.5	53.5	93.0	71.5	94.3	76.0	80.2	56.0	76.5	66.1	57.0	46.0	67.4	37.2	35.2	14.2
28	48.2	36.0	42.5	31.0	52.0	43.0	80.5	61.0	58.6	51.0	96.0	73.0	93.4	71.0	88.0	67.6	76.5	67.6	71.5	55.0	64.0	35.3	36.0	30.7
29	48.0	39.2	. .	. .	55.2	37.0	57.9	46.5	63.5	55.5	93.8	73.5	88.5	71.0	94.8	69.9	72.5	67.5	63.7	46.5	69.0	36.0	33.0	20.0
30	47.5	34.5	. .	. .	59.5	34.5	67.8	42.5	73.1	57.2	92.0	71.0	80.5	65.3	84.5	67.5	78.5	66.0	53.5	44.0	59.4	39.4	30.0	6.8
31	43.0	34.2	. .	. .	54.0	41.2	. .	. .	77.0	61.0	. .	. .	85.0	63.3	80.5	63.0	. .	. .	61.7	50.0	. .	. .	43.0	28.5
Mean .	49.22	32.94	44.15	28.19	48.37	31.36	62.31	44.00	73.64	54.88	83.28	65.73	87.72	70.41	86.67	67.63	81.44	59.13	68.37	49.56	57.19	36.64	43.28	26.98
Mean temp,	41.08		36.17		39.86		53.16		64.26		74.50		79.06		77.15		70.28		58.96		46.92		35.13	

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Jan. 1	0	S.	1	C. K.	10	1870. Jan. 2	0	E.	1	N.	10	1870. Jan. 3	0	SW.	3	Clear	0
	3	S.	1	Haze			3	E.	2	N.	10		3	SW.	3	Clear	0
	6	S.	1	Haze			6	SE.	4	N.	10		6	SW.	2	S.	1
	9	S.	1	C. K.	10		9	SE.	4	C. K.	10		9	SW.	2	C. K.	2
	Noon	S.	1	C. K.	10		Noon	S.	4	C. K.	7		Noon	SW.	2	C. K.	6
	3	E.	1	C. K.	10		3	SW.	4	C. K.	8		3	SW.	2	C. K.	7
	6	E.	1	C. K.	10		6	SW.	5	C. S.	9		6	SW.	1	C. K. S.	3
	9	E.	1	K.	10		9	SW.	4	C. S.	2		9	SW.	1	S.	1
Jan. 4	0	SW.	1	S.	2	Jan. 5	0	W.	2	C. K.	3	Jan. 6	0	SE.	1	Clear	0
	3	SW.	1	C. K.	6		3	W.	2	C. K.	6		3	S.	1	C. K.	8
	6	SW.	1	C. K. S.	3		6	W.	2	Snow	10		6	SW.	1	K.	10
	9	W.	1	C. K.	10		9	W. by N.	1	C. K.	7		9	S. SW.	1	K.	10
	Noon	NW.	2	C. K.	10		Noon	W. NW.	2	C. K.	4		Noon	S.	1	C. K.	10
	3	W.	2	C. K.	4		3	W. by N.	2	C. K.	2		3	S.	1	C. K.	10
	6	W.	1	C. K.	10		6	SE.	1	Clear	0		6	SW.	1	K.	10
	9	NW.	2	C. K.	7		9	SE.	1	Clear	0		9	S. by W.	2	K.	10
Jan. 7	0	SW.	1	N.	10	Jan. 8	0	NE.	1	K.	10	Jan. 9	0	NW.	3	Clear	0
	3	W.	3	C. K.	6		3	NE.	1	K.	10		3	NW.	3	Clear	0
	6	NW.	4	C. S.	4		6	N.	1	K.	10		6	NW.	3	S.	1
	9	N.	2	C. K.	2		9	NW.	1	C. K.	3		9	NW.	3	C. K.	5
	Noon	NW.	2	C. K.	7		Noon	SW.	3	C. K.	9		Noon	NW.	2	C. K.	5
	3	NW.	2	C. K.	7		3	NW.	4	C. K.	2		3	S. SW.	1	C. K.	2
	6	NE.	1	C. S.	4		6	NW.	4	Clear	0		6	SE.	1	C. S.	2
	9	SW.	1	C. S.	6		9	NW.	3	Clear	0		9	SE.	1	C. K.	6
Jan. 10	0	SE.	1	K.	10	Jan. 11	0	W. NW.	1	Clear	0	Jan. 12	0	S.	1	K.	10
	3	SE.	1	K.	10		3	NW.	1	Clear	0		3	S.	1	C. K.	8
	6	SE.	1	K.	10		6	NW.	1	Clear	0		6	S.	1	K.	10
	9	S. SW.	1	K.	9		9	NW.	1	Fog			9	S. W.	1	Haze	10
	Noon	S.	1	C. K. S.	8		Noon	S.	1	C. K.	7		Noon	S.	1	C. K.	9
	3	S. SW.	1	C. K. S.	9		3	S.	1	C. K.	2		3	SW.	3	C. K.	10
	6	S.	1	Clear	0		6	SE.	1	Clear	0		6	S. SW.	1	C. K.	8
	9	S.	1	Clear	0		9	S.	1	C. K.	9		9	S. SE.	1	C. K.	9
Jan. 13	0	SW.	1	K.	10	Jan. 14	0	NW.	2	C. S.	4	Jan. 15	0	N.	1	N.	10
	3	SW.	1	C. K.	8		3	N.	1	C. K.	8		3	NW.	1	N.	10
	6	SW.	1	C. S.	4		6	NE.	2	C.	3		6	NW.	1	N.	10
	9	SW.	1	C. K.	8		9	NE.	2	C. K.	9		9	NW.	1	N.	10
	Noon	S.	1	C. K.	5		Noon	NE.	1	K.	10		Noon	W.	1	N.	10
	3	SW.	1	C. K.	9		3	NE.	1	Sleet	10		3	W.	1	N.	10
	6	SW.	1	C. K.	8		6	NE.	1	Sleet	10		6	NE.	1	Fog	10
	9	NW.	2	C. K.	6		9	NE.	1	Sleet	10		9	S.	1	K.	10

REMARKS.

January 1. Began to rain at 10h 45m p. m., and continued until 7 a. m. on the 2d.

2. At 3h 12m a. m. the wind changed suddenly from E. to SE., and blew very hard. The barometer fell rapidly during the morning, and reached its minimum, 28.900 inches, (reduced to 32° Fah.,) at 0h 20m p. m. Amount of rain, 0.860 inch.

3. At 3h a. m. there was a fine display of the aurora borealis, continuing until daylight.

4. A faint display of the aurora was visible from 10h p. m. on the 3d until 3 a. m. on the 4th. A light shower of snow at 11h 15m p. m.

5. A light shower of snow at 5h 40m a. m.

6. Light showers of rain, at intervals, in the evening.

7. Light shower of snow at 0h a. m.

8. The aurora borealis was visible from 10 p. m. until nearly daylight on the 9th.

9. Lunar halo at 6 p. m.

12. Light showers during the morning. Amount of rain, 0.018 inch.

13. A light shower at 3h 45m p. m.

14. A light sleety rain from 1h 10m p. m. to 6h p. m. on the 15th. Amount, 0.362 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Jan. 16	0	SW.	1	C. S.	4	1870. Jan. 17	0	E.	1	K.	10	1870. Jan. 18	0	W.	3	K.	10
	3	W.	1	C. S.	5		3	E.	1	N.	10		3	NW.	2	K.	10
	6	S.	1	C. S.	6		6	NE.	1	N.	10		6	N. NW.	2	K.	10
	9	SE.	1	Fog.			9	W. by NW	1	Thick mist	10		9	N. NW.	2	C. K.	9
	Noon	NE.	1	C. K.	3		Noon	S.	1	Fog			Noon	NW.	2	C. K.	8
	3	SE.	1	C. K.	7		3	S.	3	C. K.	7		3	NW.	1	C. K.	5
	6	SE.	1	C. K.	4		6	SW.	3	N.	10		6	N.	1	C. S.	4
	9	SE.	1	C. K.	7		9	S.	2	N.	10		9	N. NW.	1	C. K. S	9
Jan. 19	0	NW.	1	C. K. S.	6	Jan. 20	0	N.	1	C. K.	8	Jan. 21	0	S.	1	K.	10
	3	NW.	1	C. K. S.	8		3	N.	1	C. K.	8		3	SW.	1	K.	10
	6	N.	1	C. S.	3		6	NW.	1	C. K.	10		6	W.	1	Fog	
	9	N. NE.	1	C. K.	8		9	NW.	1	C. K.	9		9	NW.	1	C. K.	9
	Noon	N. NE.	2	C. K.	8		Noon	SW.	1	C. K.	10		Noon	NW.	2	C. K.	8
	3	N. by E.	1	C. K.	7		3	S.	1	C. K.	9		3	W. NW.	1	C. K.	5
	6	E.	1	C. K.	7		6	S.	1	K.	10		6	SW.	1	S.	1
	9	NE.	1	C. K.	8		9	SW.	1	Haze			9	NW.	1	Clear	0
Jan. 22	0	NW.	1	Clear	0	Jan. 23	0	SE.	1	C. K.	10	Jan. 24	0	SW.	1	K.	10
	3	NW.	1	Clear	0		3	S.	1	C. K.	9		3	N.	1	K.	10
	6	NW.	1	Clear	0		6	SW.	1	C. K.	8		6	NE.	2	K.	10
	9	N. NE.	1	Haze			9	S.	1	C.	6		9	N. by E.	1	K.	10
	Noon	S. SW.	1	C. K.	7		Noon	SW.	1	C. K.	6		Noon	NE.	2	K.	10
	3	S.	1	C. K.	7		3	SW.	2	C. K.	8		3	NE.	1	K.	10
	6	SE.	1	C. K.	4		6	SW.	1	C. K. S.	5		6	NE.	1	Th'k mist	10
	9	SE.	1	C. K.	9		9	SW.	1	C. K.	9		9	NE.	1	K.	10
Jan. 25	0	NE.	1	N.	10	Jan. 26	0	SW.	1	Clear	0	Jan. 27	0	S.	1	Clear	0
	3	NE.	1	N.	10		3	SW.	1	Clear	0		3	S. by W.	1	Clear	0
	6	NW.	2	N.	10		6	SW.	1	C.	2		6	S.	1	C. S.	3
	9	N. NW.	2	N.	10		9	S.	1	C.	1		9	S.	1	Haze	
	Noon	NW.	1	C. K.	8		Noon	SW.	1	S.	1		Noon	NW.	1	C. K.	9
	3	NW.	3	C. K.	2		3	S.	1	Clear	0		3	NW.	2	Haze	
	6	NW.	2	C. K.	2		6	S.	1	Clear	0		6	NW.	1	C.	6
	9	W.	1	C.	1		9	S. SW.	1	Clear	0		9	NW.	2	C. K.	9
Jan. 28	0	NW.	2	K.	10	Jan. 29	0	E.	2	K.	10	Jan. 30	0	NW.	2	K.	10
	3	NW.	1	K.	10		3	E.	1	K.	10		3	NW.	3	C. K.	5
	6	NW.	1	K.	10		6	E.	1	N.	10		6	NW.	2	S.	1
	9	N. NW.	1	C. K. S.	10		9	NW.	1	N.	10		9	NW.	2	C. K.	3
	Noon	SW.	1	C. K.	10		Noon	NE.	1	N.	10		Noon	S.	2	C. K.	4
	3	SE.	1	K.	10		3	SW.	1	K.	10		3	S.	1	C. K.	7
	6	SE.	1	K.	10		6	NW.	2	N.	9		6	SE.	1	C. S.	2
	9	E.	1	K.	10		9	NW.	3	S.	1		9	SE.	1	S.	1

REMARKS.

January 16. A lunar halo at 8^{h} 15^{m} p. m.
17. Rain at 0^{h} 30^{m} a. m. Lightning and thunder at 5^{h} 30^{m} p. m. Amount of rain, 0.260 inch.
24. Rain during the night of the 24th and 25th. Amount, 0.678 inch.
27. Aurora borealis visible from 0^{h} a. m. until morning.
29. Began to rain at 4^{h} 15^{m} a. m. Amount, 0.350 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870.						1870.						1870.					
Jan. 31	0	NW.	1	C. S.	4												
	3	N.	1	K.	10												
	6	N.	1	K.	10												
	9	N.	1	K. S.	10												
	Noon	E.	1	K.	10												
	3	E. NE.	1	K.	10												
	6	E. NE.	1	K.	10												
	9	E.	1	N.	10												
Feb. 1	0	W. NW.	1	Rain&sn'w	10	Feb. 2	0	NW.	1	C. K.	4	Feb. 3	0	SW.	1	Haze.	
	3	NW.	2	C. K.	4		3	NW.	1	C. K.	4		3	N.	1	Clear	0
	6	NW.	3	C. K.	10		6	E.	1	S.	1		6	N.	1	Clear	0
	9	NW.	4	C. S.	2		9	S.	1	C. K.	8		9	W.	1	C. K.	3
	Noon	NW.	3	C. K.	6		Noon	S. SW.	1	Haze			Noon	N. NE.	1	C. K.	
	3	NW.	3	C.	3		3	S.	1	Haze.			3	N.	2	Haze	
	6	NW.	2	C. S.	1		6	S. by W.	1	Haze			6	NW.	1	C. K.	9
	9	NW.	2	S.	1		9	SW.	1	Haze			9	NW.	2	C. K,	4
Feb. 4	0	SW.	2	K.	10	Feb. 5	0	NE.	2	K.	10	Feb. 6	0	NE.	1	K.	10
	3	NW.	2	C. K.	3		3	NE.	3	K.	10		3	NE.	1	K.	10
	6	NE.	2	C. K.	4		6	NE.	3	K.	10		6	N.	1	K.	10
	9	NE.	3	C.	3		9	NE.	1	K.	10		9	NE.	1	K.	10
	Noon	E. NE.	3	C. K.	4		Noon	N.	2	K.	10		Noon	SW.	1	K.	10
	3	NE.	3	C. K.	10		3	NE.	2	C. K.	10		3	SW.	1	K.	10
	6	NE.	3	K.	10		6	NE.	1	Snow	10		6	SW.	1	K.	10
	9	NE.	2	K.	10		9	NE.	1	K.	10		9	W. SW.	1	C. K.	2
Feb. 7	0	W.	2	Clear	0	Feb. 8	0	E.	2	Snow	10	Feb. 9	0	NW.	3	C. K.	6
	3	W.	2	Clear	0		3	NE.	3	Snow	10		3	NW.	2	C.	4
	6	W. NW.	1	Clear	0		6	N.	3	N.	10		6	NW.	2	C. S.	2
	9	W.	1	Haze			9	N.	2	Snow&rain	10		9	W. by S.	2	C. K.	8
	Noon	SW.	1	C. K.	10		Noon	NW.	3	Snow&rain	10		Noon	NW.	1	C. K.	10
	3	S.	1	C. K.	9		3	NW.	3	Snow	10		3	W. by N.	2	C. K.	4
	6	E.	1	C. K.	10		6	NW.	3	C. K.	8		6	NW.	1	C. K.	8
	9	E.	2	K.	10		9	NW.	3	K.	10		9	NW.	1	K.	10
Feb. 10	0	NW.	2	Mist	10	Feb, 11	0	W.	1	Clear	0	Feb. 12	0	S.	1	K.	10
	3	NW.	3	C. K.	7		3	W.	1	Clear	0		3	S.	1	N.	10
	6	NW.	2	C.	7		6	W.	1	C. K.	10		6	S.	1	K.	10
	9	NW.	1	C. K.	9		9	W.	1	Haze			9	NW.	3	C. K.	10
	Noon	NW.	3	C. K.	4		Noon	S.	2	C. K.	10		Noon	SW.	1	C. K.	10
	3	NW.	3	C.	3		3	S. SE.	1	K.	10		3	SW.	1	C. K. S.	3
	6	N. by W.	2	S,	1		6	SE.	2	K.	10		6	SW.	1	C. K.	3
	9	NW.	1	Clear	0		9	SE.	1	K.	10		9	NW.	1	C. K.	3

REMARKS.

January 31. Began to rain at $6^h 35^m$ p. m. Changed to snow at $10^h 35^m$ p. m. Depth of snow, 0.25 inch. Amount of rain and melted snow, 0.344 inch.
February 5. Snowing lightly at 6^h p. m.
7. Commenced snowing at 10^h p. m.
8. Snow, and snow and rain, until 3^h p. m. Depth of snow, 1.5 inches. Amount of rain and melted snow, 0.396 inch.
12. Light warm showers during the morning.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Feb. 13	0	NW.	4	Clear	0	1870. Feb. 14	0	E.	1	C.	6	1870. Feb. 15	0	SW.	1	N.	10
	3	NW.	3	Clear	0		3	E.	1	C. K.	8		3	S.	1	K.	10
	6	NW.	1	Clear	0		6	SE.	1	C. K.	10		6	SW.	1	C. K.	8
	9	W. NW.	2	Clear	0		9	S.	1	K.	10		9	N. by W.	1	N.	10
	Noon	N. NW.	2	C.	1		Noon	S.	1	C. K.	10		Noon	N.	1	K.	10
	3	N. NW.	1	C.	3		3	S.	1	C. K.	10		3	N.	2	N.	10
	6	S. SE.	1	C. K. S.	7		6	NW.	2	K.	10		6	N. NW.	2	N.	10
	9	SE.	1	C. K.	4		9	W.	2	N.	10		9	NW.	2	K.	10
Feb. 16	0	NW.	1	C. K.	2	Feb. 17	0	NW.	1	C.	7	Feb. 18	0	NE.	1	C. K.	10
	3	NW.	1	Clear	0		3	NW.	1	C. K.	10		3	E.	2	C. K.	10
	6	NW.	2	Clear	0		6	S.	1	C. K. S.	3		6	SE.	2	N.	10
	9	NW.	2	Clear	0		9	S.	1	Fog			9	SE.	1	N.	10
	Noon	SW.	1	Clear	0		Noon	SE.	1	C. K.	7		Noon	S.	2	K.	10
	3	SW.	1	C.	1		3	SE.	1	C. K.	9		3	NW.	3	N.	10
	6	SE.	1	C. K. S.	3		6	SE.	3	C. K.	10		6	NW.	3	Hail	10
	9	SE.	1	Haze			9	SE.	1	K.	10		9	NW.	4	Snow	10
Feb. 19	0	NW.	4	C. K.	10	Feb. 20	0	S.	2	K.	10	Feb. 21	0	NW.	4	Clear	0
	3	NW.	4	C. K.	10		3	S.	1	C. K.	10		3	NW.	4	Clear	0
	6	NW.	3	C. K.	5		6	S.	1	K.	10		6	NW.	3	Clear	0
	9	NW.	4	Clear	0		9	S.	1	C. K.	10		9	NW.	3	C. K.	3
	Noon	NW.	2	Clear	0		Noon	S.	2	C. K.	9		Noon	NW.	3	C. K.	4
	3	NW.	1	Clear	0		3	NW.	3	Snow	10		3	W.	3	C. K.	4
	6	SE.	1	C. S.	2		6	NW.	4	K.	10		6	W. NW.	3	Clear	0
	9	SE.	2	C. S.	3		9	NW.	4	C. K.	8		9	NW.	3	Clear	0
Feb. 22	0	NW.	2	Clear	0	Feb. 23	0	S.	1	K.	10	Feb. 24	0	NW.	2	Clear	0
	3	W.	2	C. K.	3		3	S.	1	K.	10		3	NW.	3	Clear	0
	6	W.	2	C. K.	6		6	S.	1	Snow	10		6	NW.	3	Clear	0
	9	SW.	3	C. S.	4		9	S.	1	K.	10		9	NW.	3	C. K.	2
	Noon	W.	3	C. K.	10		Noon	SW.	1	K.	10		Noon	NW.	3	C. K.	3
	3	W.	2	C. K.	7		3	S.	1	Haze			3	NW.	3	C. K.	3
	6	SW.	1	C. K. S.	7		6	S.	1	K.	10		6	NW.	3	C. K.	6
	9	SW.	1	K.	10		9	W.	1	C. K.	4		9	NW.	3	C. K.	4
Feb. 25	0	NW.	3	C. K.	2	Feb. 26	0	SW.	1	Clear	0	Feb. 27	0	NE.	1	C. K.	4
	3	NW.	2	Clear	0		3	W.	1	Clear	0		3	NE.	2	C. K.	6
	6	NW.	2	Clear	0		6	W. NW.	1	C. K.	2		6	NE.	2	C. K.	10
	9	W.	1	C.	1		9	NW.	1	Haze			9	NE.	1	K.	10
	Noon	W.	3	C.	4		Noon	N.	1	Haze			Noon	NE.	2	N.	10
	3	W. NW.	3	C.	2		3	S.	1	Haze			3	NE.	1	N.	10
	6	W. SW.	2	C. S.	3		6	S. SE.	1	C. K. S.	9		6	N. NW.	2	N.	10
	9	W.	1	Clear	0		9	NE.	1	Clear	0		9	N.	1	N.	10

REMARKS.

February 14. Lunar halo at 0^h a. m. Light showers at 7^h 25^m p. m.
15. Showers during the day. Amount of rain, 0.610 inch.
17. Lunar halo at 0^h a. m.
18. Began to rain at 3^h 30^m a. m. Rain, hail, and snow during the day. Amount of rain and melted snow, 0.882 inch.
20. Light rain and snow at 2^h p. m.
23. Snowing lightly at 4^h 30^m a. m.
27. Rain during the afternoon. Amount, 0.454 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force					Direction.	Force					Direction.	Force		
1870. Feb. 28	0	NW.	1	C. K.	10	1870.						1870.					
	3	NW.	1	C. K.	9												
	6	W. SW.	1	C. K.	9												
	9	NW.	1	C. K.	7												
	Noon	W.	1	C. K.	10												
	3	W.	1	C. K.	10												
	6	W.	1	K.	10												
	9	W.	1	K.	10												
Mar. 1	0	NW.	2	C. K.	5	Mar. 2	0	NW.	2	C. K.	3	Mar. 3	0	NW.	3	C. K.	2
	3	NW.	3	K.	10		3	NW.	2	C. K.	4		3	NW.	3	Clear	0
	6	W. NW.	3	C. K. S.	7		6	NW.	2	C. K.	10		6	NW.	3	Clear	0
	9	W.	2	C. K.	9		9	NW.	3	C. K.	9		9	NW.	4	C.	1
	Noon	W.	2	C. K.	9		Noon	NW.	4	C. K.	7		Noon	W. NW.	3	Clear	0
	3	W.	2	C. K.	9		3	NW.	4	C. K.	5		3	NW.	2	S.	1
	6	NW.	3	C. K.	8		6	NW.	3	C. K.	4		6	N. NW.	1	C. K. S.	2
	9	NW.	1	C. K.	2		9	NW.	3	Clear	0		9	W. NW.	2	Haze	
Mar. 4	0	NW.	2	C. K.	6	Mar. 5	0	NW.	1	K.	10	Mar. 6	0	NW.	1	Clear	0
	3	W.	1	K.	10		3	N.	1	K.	10		3	NW.	1	Clear	0
	6	SW.	1	K.	10		6	N.	1	K.	10		6	NW.	1	C. K.	9
	9	E.	1	K.	10		9	NW.	2	Snow	10		9	E.	1	K.	10
	Noon	SE.	1	C. K.	10		Noon	NW.	2	C. K.	9		Noon	SE.	1	Snow	10
	3	SE.	1	Haze			3	NW.	3	C. K.	7		3	SE.	1	Snow	10
	6	NE.	1	C. K.	10		6	N. NW.	2	C. K.	2		6	E.	1	Snow	10
	9	N.	1	K.	10		9	NW.	1	Clear	0		9	E.	2	Snow	10
Mar. 7	0	NE.	2	Snow	10	Mar. 8	0	W.	1	K.	10	Mar. 9	0	NW.	3	C. K.	2
	3	NE.	2	K.	10		3	W. NW.	1	C.	4		3	NW.	1	Clear	0
	6	NW.	1	K.	10		6	NW.	1	Clear	0		6	NW.	2	Clear	0
	9	NW.	1	K.	10		9	NW.	2	C. K. S.	3		9	NW.	3	C.	2
	Noon	NW.	1	C. K.	7		Noon	NW.	3	C. K.	4		Noon	W. NW.	3	C. K.	4
	3	NW.	3	C. K.	4		3	NW.	2	C. K.	9		3	W.	3	C.	2
	6	NW.	2	C. K. S.	9		6	NW.	3	C. K.	7		6	NW.	2	C. S.	2
	9	NW.	2	C. K.	10		9	NW.	3	C. K.	4		9	W.	2	Clear	0
Mar. 10	0	W. by S.	2	Clear	0	Mar. 11	0	NW.	1	Clear	0	Mar. 12	0	E. NE.	1	C. K.	2
	3	SW.	1	C. S.	2		3	NW.	1	Haze			3	SE.	2	C. K.	10
	6	W.	1	C. K. S.	10		6	NW.	1	C. K.	8		6	NE.	3	K.	10
	9	SW.	2	C K.	4		9	NE.	1	C. K.	6		9	NE.	2	C. K.	8
	Noon	S.	2	C. K.	4		Noon	S. by E.	1	C. K.	10		Noon	E.	2	C. K.	9
	3	S.	3	Clear	0		3	S.	2	C. K.	10		3	E.	3	C. K.	10
	6	SW.	2	Clear	0		6	SW.	1	C. K.	9		6	NE.	2	N.	10
	9	W.	1	Clear	0		9	SW.	1	C. K.	8		9	NE.	2	N.	10

REMARKS.

March 2. Light snow-squall at 4^{h} 20^{m} a. m.

4. Snowing at 6^{h} 10^{m} a. m. Depth of snow, 0.25 inch.
Light rain at 6^{h} 30^{m} p. m.

6. Began to snow at 10^{h} 15^{m} a. m., and continued until the morning of the 7th. Depth of snow, 3.35 inches. Amount of melted snow, 0.596 inch.

12. Heavy rain at 6^{h} p. m. Amount, 0.400 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Mar. 13	0	NE.	2	N.	10	1870. Mar. 14	0	NW.	3	C. K. S.	7	1870. Mar. 15	0	NW.	1	C. K.	3
	3	NE.	3	K.	10		3	NW.	3	C. K.	10		3	NW.	1	Clear	0
	6	N. NE.	1	C. K. S.	3		6	NW.	2	C. K.	10		6	NW.	1	Clear	0
	9	NW.	2	C. K.	10		9	NW.	2	C. K.	10		9	NE.	1	C. K.	8
	Noon	NW.	3	C. K.	10		Noon	N. NW.	2	C. K.	9		Noon	SW.	1	C. K. S.	10
	3	NW.	3	C. K.	10		3	N. NW.	1	C. K.	8		3	E.	1	C. K.	10
	6	NW.	3	C. K.	6		6	NW.	1	C. K.	9		6	E.	2	C. K.	8
	9	NW.	3	C. K. S.	10		9	NW.	1	C. K.	9		9	E. by S.	3	N.	10
Mar. 16	0	E.	3	N.	10	Mar. 17	0	W.	1	C. S.	3	Mar. 18	0	NW.	3	C. K.	4
	3	NW.	4	Sleet	10		3	W.	1	S.	2		3	NW.	3	C. K.	6
	6	NW.	4	Sleet	10		6	W.	1	C. K. S.	6		6	NW.	2	C. K.	2
	9	NW.	4	C. K.	4		9	W. NW.	2	C. K.	8		9	NW.	4	Clear	0
	Noon	NW.	3	C. K.	3		Noon	NW.	3	C. K.	10		Noon	NW.	4	C.	1
	3	NW.	3	C. K.	4		3	W.	3	C. K.	9		3	NW.	3	C.	1
	6	NW.	2	C. K.	6		6	W. NW.	3	K.	10		6	NW.	1	C.	1
	9	NW.	1	S.	1		9	NW.	3	C. K.	10		9	NW.	2	Clear	0
Mar. 19	0	NW.	2	Clear	0	Mar. 20	0	NW.	1	Clear	0	Mar. 21	0	SW.	1	C. K.	8
	3	NW.	2	Clear	0		3	W.	1	C. K.	5		3	SW.	1	K.	10
	6	NW.	2	Clear	0		6	NW.	1	C. K.	6		6	S.	1	C. K.	9
	9	NW.	2	Clear	0		9	S.	1	Haze			9	S. SW.	1	K.	10
	Noon	NW.	2	C. S.	1		Noon	S. SW.	1	C. K.	9		Noon	S. by W.	1	C. K.	7
	3	N.	1	C. K.	2		3	S.	1	C. K.	10		3	SW.	1	C. K.	5
	6	W. NW.	1	S.	1		6	S.	1	C. K.	8		6	NW.	3	S.	1
	9	NW.	1	S.	1		9	SE.	1	K.	10		9	NW.	2	Clear	0
Mar. 22	0	N. NW.	1	Clear	0	Mar. 23	0	W.	1	C. S.	2	Mar. 24	0	NW.	3	Clear	0
	3	NW.	1	Clear	0		3	NW.	2	C. K.	4		3	NW.	3	Clear	0
	6	NW.	1	Clear	0		6	NW.	1	S.	1		6	NW.	3	Clear	0
	9	W. NW.	2	Haze			9	NW.	3	C. K.	3		9	NW.	2	Clear	0
	Noon	NW.	3	C. K.	4		Noon	N. NW.	3	C. K. N.	9		Noon	NW.	2	Clear	0
	3	NW.	3	Haze			3	NW.	4	C. K.	3		3	NW.	2	Clear	0
	6	N. NW.	2	C. S.	4		6	NW.	3	Clear	0		6	NW.	2	Clear	0
	9	NW.	2	C. K.	8		9	NW.	3	Clear	0		9	NW.	2	Clear	0
Mar. 25	0	NW.	1	Clear	0	Mar. 26	0	SE.	1	C.	2	Mar. 27	0	E.	3	N.	10
	3	NW.	1	Clear	0		3	E.	1	C. S.	4		3	E.	3	N.	10
	6	N. NE.	1	Clear	0		6	NE.	1	C. K. S.	8		6	E.	3	N.	10
	9	N. NE.	1	Haze			9	E. SE.	1	C. K.	10		9	E. NE.	5	N.	10
	Noon	SW.	1	Haze			Noon	E.	2	C. K.	10		Noon	E.	4	N.	10
	3	S. SE.	1	Haze			3	E. SE.	2	C. K.	10		3	S.	3	C. K.	9
	6	S. SW.	1	C. K. S.	4		6	E.	2	C. K.	10		6	W.	2	C. K. S.	9
	9	SE.	1	Clear	0		9	E.	3	K.	10		9	NW.	2	C. K.	10

REMARKS.

March 13. Rain in the morning, 0.280 inch. At 4h 45m a. m. the barometer (reduced to 32° Fahrenheit) read 28.982.

16. Rain and snow on the morning of the 16th, accompanied by lightning and thunder. Amount of rain and melted snow, 1.100 inches.

20. A light shower of rain at 6h 25m p. m. Amount, 0.064 inch.

21. Light rain at 3h 10m a. m.

26. Heavy rain from 11h 12m p. m. to 0h 30m p. m. on the 27th. Amount of rain, 1.780 inches.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Mar. 28	0	NW.	1	C. K.	10	1870. Mar. 29	0	W.	3	K.	10	1870. Mar. 30	0	NW.	1	Clear	0
	3	NW.	1	K.	10		3	NW.	3	C. K.	4		3	NW.	2	Clear	0
	6	NW.	2	C. K. S.	9		6	NW.	2	C. S.	2		6	NW.	1	Haze	
	9	NW.	3	C. K.	8		9	NW.	2	C. K.	3		9	E.	1	Clear	0
	Noon	W.	3	C. K. S.	10		Noon	NW.	3	C. K.	6		Noon	SE.	1	C. K.	4
	3	NW.	3	C. K.	9		3	NW.	3	C. K.	3		3	E. SE.	1	C.	1
	6	W.	3	C. K.	10		6	NW.	3	C. K.	6		6	E.	1	C. K.	10
	9	W.	2	C. K.	4		9	NW.	2	Clear	0		9	E.	2	K.	10
Mar. 31	0	E. NE.	2	K.	10												
	3	E. NE.	2	K.	10												
	6	NE.	2	K.	10												
	9	E.	2	K.	10												
	Noon	E. NE.	2	K.	10												
	3	E.	1	K.	10												
	6	NE.	2	N.	10												
	9	NE.	3	N.	10												
Apr. 1	0	NE.	3	N.	10	Apr. 2	0	E. NE.	2	N.	10	Apr. 3	0	NW.	1	N.	10
	3	NE.	3	N.	10		3	E. NE.	1	N.	10		3	N. NW.	2	N.	10
	6	NE.	2	N.	10		6	NE.	2	N.	10		6	N. NW.	1	N.	10
	9	NE.	3	N.	10		9	N.	1	Mist	10		9	N. NE.	2	N.	10
	Noon	N. NE.	2	N.	10		Noon	N.	1	Mist	10		Noon	NE.	1	K.	10
	3	N.	1	N.	10		3	N.	1	K.	10		3	S. SE.	1	N.	10
	6	NE.	2	N.	10		6	NW.	1	Mist	10		6	N. NE.	3	N.	10
	9	NE.	2	N.	10		9	NW.	2	N.	10		9	NE.	2	N.	10
Apr. 4	0	NW.	2	N.	10	Apr. 5	0	NW.	3	Snow	10	Apr. 6	0	NW.	2	Clear	0
	3	NW.	1	C. K.	8		3	NW.	3	Snow	10		3	NW.	1	Clear	0
	6	NW.	2	N.	10		6	NW.	3	Snow	10		6	NW.	2	S.	1
	9	NW.	2	N.	10		9	NW.	3	K.	10		9	NW.	2	C. K.	2
	Noon	NW.	2	N.	10		Noon	NW.	3	K.	10		Noon	NW.	2	C. K.	7
	3	NW.	3	C. K.	10		3	NW.	3	K.	10		3	NW.	2	C. K.	9
	6	NW.	2	C. K.	9		6	NW.	2	C. K.	10		6	NW.	2	K.	10
	9	NW.	3	Snow	10		9	NW.	2	C.	1		9	NW.	1	K.	10
Apr. 7	0	NW.	2	K.	10	Apr. 8	0	W.	1	Clear	0	Apr. 9	0	SE.	1	C. K.	10
	3	W.	1	C.	4		3	W.	1	C. K.	2		3	E.	1	K.	10
	6	W.	1	S.	1		6	NW.	1	Haze			6	N. NW.	1	C. K.	10
	9	NW.	2	C. K.	3		9	W.	1	Clear	0		9	NE.	1	Haze	
	Noon	NW.	1	C. K.	10		Noon	N.	1	Clear	0		Noon	SW.	1	Haze	.
	3	W. NW.	2	C. K.	10		3	W.	1	C. S.	4		3	S. SE.	1	Haze	
	6	W. WN.	1	C. K.	9		6	NW.	1	C. K.	7		6	SE.	1	C. K.	7
	9	W. SW.	1	C. K.	10		9	E.	1	Haze			9	SE.	1	Haze	

REMARKS.

March 31. Rain from 5^h 25^m p. m., almost continuously, until 6^h a. m. April 5.
April 1. Amount of rain, 1.340 inch.
2. Amount of rain, 0.146 inch.
3. Amount of rain, 0.200 inch.
4. Amount of rain, 0.098 inch.
5. Amount of rain and melted snow, 0.148 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Apr. 10	0	SE.	1	Haze		1870. Apr. 11	0	N. NE.	3	K.	10	1870. Apr. 12	0	N. NW.	3	C. K.	10
	3	SE.	1	Haze			3	NE.	3	K.	10		3	NW.	3	C. K.	7
	6	NE.	1	C. K.	6		6	NE.	3	K.	10		6	NW.	2	C. K.	6
	9	NE.	2	C. K.	10		9	NE.	3	C. K.	10		9	NW.	2	C. K.	5
	Noon	NE.	3	C. K.	10		Noon	NE.	3	C. K.	10		Noon	NW.	1	C. K.	4
	3	E.	4	C. K.	10		3	NE.	3	C. K.	10		3	NW.	1	C. K.	3
	6	NE.	3	C. K.	10		6	N.	3	C. K. S.	9		6	NW.	1	Clear	0
	9	NE.	3	C. K.	10		9	N.	2	C. K.	10		9	NW.	1	Clear	0
Apr. 13	0	NW.	3	C. K. S.	3	Apr. 14	0	SW.	1	C. K.	10	Apr. 15	0	S. SW.	1	C. K.	8
	3	NW.	3	C. K.	3		3	SW.	1	C. K.	8		3	W.	1	C. K.	7
	6	NW.	2	Clear	2		6	SW.	1	C. K.	8		6	NW.	1	Haze	
	9	NW.	2	C.	2		9	SW.	1	C. K.	4		9	NW.	1	Haze	
	Noon	W.	1	C. K.	1		Noon	S. SE.	1	C. K.	8		Noon	W. NW.	1	Haze	
	3	W. by N.	1	C. K.	1		3	S.	1	C. K.	7		3	W. NW.	1	Haze	
	6	W. NW.	1	C. K.	1		6	S.	1	C. K. S.	6		6	SE.	1	C. K.	8
	9	W.	1	C. K.	1		9	S. SW.	1	C. K.	10		9	NE.	3	C. K.	10
Apr. 16	0	NE.	3	C. K.	9	Apr. 17	0	E.	3	N.	10	Apr. 18	0	E.	1	C. K.	8
	3	NE.	2	C. K.	10		3	E.	3	N.	10		3	E. SE.	1	C. K.	10
	6	NE.	2	K.	10		6	NE.	2	N.	10		6	NE.	2	N.	10
	9	E. NE.	3	K.	10		9	NE.	1	K.	10		9	E.	2	N.	10
	Noon	E.	3	K.	10		Noon	E.	1	N.	10		Noon	E.	1	C. K.	10
	3	E. by S.	3	K.	10		3	W. NW.	1	C. K.	10		3	S. SE.	2	C. K.	10
	6	E.	3	Mist	10		6	NE.	1	C. K. S.	10		6	SE.	1	C. K.	7
	9	E.	3	N.	10		9	NE.	1	K.	10		9	S.	1	C. K.	4
Apr. 19	0	W.	1	C. K.	8	Apr. 20	0	W. SW.	1	C. K.	8	Apr. 21	0	SW.	1	K.	10
	3	NW.	1	C. K.	7		3	W. NW.	1	C. K.	10		3	W.	2	N.	10
	6	N.	1	C. K.	9		6	N.	1	C. K.	9		6	NW.	1	C. K.	9
	9	N.	1	C. K.	9		9	NE.	1	N.	10		9	W. SW.	1	C. K.	3
	Noon	N. by W.	1	C. K.	9		Noon	S.	1	C. K.	10		Noon	W. NW.	1	C. K.	8
	3	N. NW.	1	C. K.	9		3	S. SE.	1	N.	10		3	W.	1	C. K.	9
	6	N.	2	C. K.	8		6	S.	1	C. K.	9		6	NW.	1	C. K. S.	8
	9	NE.	1	C. K.	2		9	S.	1	K.	10		9	NW.	1	K.	10
Apr. 22	0	NW.	2	C. K.	6	Apr. 23	0	S.	1	C. K.	3	Apr. 24	0	NE.	1	C. S.	2
	3	NW.	2	Clear	0		3	NE.	1	C. K.	3		3	N.	1	C. S.	1
	6	NW.	1	Clear	0		6	E.	1	C. K.	8		6	NW.	1	Clear	0
	9	NW.	1	C. K.	8		9	NE.	1	C. K.	8		9	W.	1	Haze	
	Noon	S.	1	C. K.	9		Noon	N.	1	Haze			Noon	SE.	1	Clear	0
	3	S. by E.	1	C. K.	7		3	E.	1	Haze			3	S.	1	Clear	0
	6	S. SE.	1	C. K.	3		6	N. NE.	1	Haze			6	S.	1	Haze	
	9	SW.	1	C. K.	2		9	NE.	2	C. S.	2		9	SW.	1	S.	1

REMARKS.

April 11. Lunar halo at 7^h 30^m p. m.
16. Rain from 6^h p. m. to 2^h p. m. on the 17th. Amount, 1.154 inches.
18. Shower of rain at 6^h a. m. Amount, 0.184 inch.
19. Light showers during the day. Amount of rain, 0.028 inch.
21. A light shower at 2^h 35^m a. m. Amount, 0.036 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Apr. 25	0	SW.	1	Haze		1870. Apr. 26	0	N.	1	Clear	0	1870. Apr. 27	0	SW.	1	C.	2
	3	SW.	1	Haze			3	NW.	1	Fog			3	S. SW.	1	Haze	
	6	SW.	1	C. S.	4		6	W.	1	Clear	0		6	SW.	1	C. K.	10
	9	NW.	1	C. K.	10		9	SW.	2	Clear	0		9	S.	1	Haze	
	Noon	N.	3	C. K.	10		Noon	S. SE.	1	C. K. S.	1		Noon	S.	1	K.	10
	3	N.	3	C. K. S.	9		3	S. SE.	2	Clear	0		3	S.	1	Haze	
	6	N.	2	C.	1		6	S.	1	C. K.	3		6	S.	1	Haze	
	9	N.	1	Clear	0		9	SW.	1	Clear	0		9	S.	1	C.	2
Apr. 28	0	S.	1	C. K.	4	Apr. 29	0	W.	1	C. K.	10	Apr. 30	0	NW.	1	S.	1
	3	S.	1	C. K.	6		3	W.	1	C.	4		3	NW.	1	C.	2
	6	S.	1	C. K.	8		6	NE.	1	K.	10		6	NW.	1	Clear	0
	9	S. SW.	2	C. K.	10		9	NE.	2	N.	10		9	SW.	1	Haze	
	Noon	S. SW.	2	C. K.	10		Noon	NE.	2	N.	10		Noon	SW.	1	C. S.	1
	3	S. by W.	2	C. K.	10		3	NE.	2	N.	10		3	SW.	1	C. K.	3
	6	S. by W.	2	C. K.	10		6	NW.	1	N.	10		6	SW.	1	Haze	
	9	W.	1	K.	10		9	NW.	1	K.	10		9	SE.	1	Clear	0
May 1	0	SW.	1	Clear	0	May 2	0	NW.	2	Clear	0	May 3	0	SW.	1	Haze	
	3	W.	1	Fog			3	N.	2	C. K.	5		3	NW.	1	Haze	
	6	W.	1	Clear	0		6	NW.	2	C. K.	10		6	NW.	1	C. K.	7
	9	NW.	2	Clear	0		9	E.	1	C. K.	8		9	NE.	1	C. K.	9
	Noon	NW.	2	Clear	0		Noon	E.	1	C. K.	6		Noon	NE.	1	N.	10
	3	NW.	2	Clear	0		3	SE.	1	C. K.	9		3	N. NW.	1	C. K.	10
	6	N. NE.	1	C. K.	2		6	SE.	1	C. K.	10		6	N.	1	N.	10
	9	NW.	2	Clear	0		9	S.	1	Haze			9	NW.	1	N.	10
May 4	0	NW.	1	C. K.	6	May 5	0	S. SE.	1	C. K.	4	May 6	0	NW.	1	Clear	0
	3	W.	1	C. K.	5		3	SW.	1	C. K.	8		3	SW.	1	Clear	0
	6	SW.	1	C. K.	4		6	N.	1	C. K.	10		6	E. by S.	1	C. K.	4
	9	NW.	1	C. K.	9		9	E.	2	C. K.	10		9	S.	1	Haze	
	Noon	NW.	3	Haze			Noon	E.	2	C. K.	8		Noon	SE.	2	C. K.	8
	3	W.	3	C. K.	3		3	NE.	1	N.	10		3	S.	1	C. K.	9
	6	W.	2	C. K.	4		6	S.	1	K.	10		6	E.	2	C. K.	8
	9	W. NW.	2	C. K.	9		9	NE.	2	C. K.	9		9	W.	5	N.	10
May 7	0	W.	1	N.	10	May 8	0	NE.	1	C. K.	10	May 9	0	W.	2	C. K.	2
	3	W.	1	C. K.	6		3	N.	2	C. K.	7		3	W.	2	Clear	0
	6	W.	2	Clear	0		6	W. NW.	1	K.	10		6	W.	2	C. K.	5
	9	SW.	1	C. K.	2		9	NE.	1	C. K.	6		9	NW.	3	C. K.	5
	Noon	S. SE.	2	C. K.	4		Noon	NW.	2	C. K.	5		Noon	NW.	3	C. K.	5
	3	W. by N.	2	N.	10		3	NW.	3	N.	10		3	W. NW.	3	C. K.	6
	6	NE.	2	C. K.	8		6	W. NW.	3	C. K. S.	4		6	W.	1	C. K.	8
	9	NE.	1	C. K.	8		9	W.	2	C. K.	9		9	W.	2	Clear	0

REMARKS.

April 28. Lightning and thunder, with rain, at 7^h p. m. Amount of rain, 0.136 inch.
29. Lightning during the night. Raining at 8^h 50^m a. m. Amount, 0.220 inch.
May 3. Rain at 10^h 30^m a. m. Amount, 0.446 inch.
4. Lightning during the evening.
5. Rain at intervals during the 5th and 6th. Amount, 0.664 inch.
7. Rain at 2^h 40^m p. m., with thunder. Amount, 0.116 inch.
8. Light showers during the day. Amount of rain, 0.034 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. May 10	0	W.	1	C. K.	6	1870. May 11	0	NE.	1	N.	10	1870. May 12	0	W. SW.	1	Clear	0
	3	W. NW.	1	C. K.	6		3	N.	1	N.	10		3	S. SW.	1	Clear	0
	6	SW.	1	K.	10		6	NW.	1	N.	10		6	W. by S.	1	C.	1
	9	S. SW.	1	C. K.	9		9	W.	1	N.	10		9	SE.	1	C. K.	3
	Noon	S.	1	C. K.	8		Noon	W.	1	N.	10		Noon	S. SE.	1	C. K.	5
	3	W.	3	C. K.	9		3	W.	1	N.	10		3	SW.	2	C. K.	9
	6	W. NW.	1	C. K.	10		6	W.	1	C. K.	3		6	N.	1	K.	10
	9	W. NW.	1	N.	10		9	W.	1	Clear	0		9	NE.	2	C. K.	9
May 13	0	NW.	1	C. K.	10	May 14	0	NW.	1	C. K.	10	May 15	0	SW.	1	Clear	0
	3	NW.	1	C.	4		3	W. NW.	1	Clear	0		3	W.	1	Clear	0
	6	N.	1	C.	5		6	NW.	2	C.	6		6	W.	1	Clear	0
	9	NE.	2	C. K.	7		9	W. NW.	2	S.	1		9	NW.	2	Clear	0
	Noon	NE.	1	C. K.	8		Noon	W.	3	C.	3		Noon	W. NW.	2	Clear	0
	3	SW.	2	C. K.	8		3	N. NW.	2	C.	1		3	W. NW.	1	Clear	0
	6	W. NW.	1	C. K.	8		6	W. by N.	1	C.	3		6	Clear	0	Clear	0
	9	W.	1	C. K.	8		9	W.	1	S.	1		9	SW.	1	Clear	0
May 16	0	SW.	1	Clear	0	May 17	0	W.	2	C. K.	6	May 18	0	NE.	1	C. K.	8
	3	W.	1	Clear	0		3	W.	1	C. K.	4		3	NE.	1	C. K.	10
	6	W.	2	Clear	0		6	NW.	2	C. K.	7		6	NE.	2	K.	10
	9	NW.	1	Haze			9	NE.	2	Clear	0		9	SE.	2	K.	10
	Noon	W. SW.	1	C. K.	2		Noon	NE.	3	C. K.	6		Noon	S.	1	K.	10
	3	NW.	2	Haze			3	NE.	2	C. K.	4		3	SE.	2	C. K.	9
	6	W.	1	C. K.	3		6	NE.	3	C. K.	6		6	SW.	1	C. K.	8
	9	W.	2	C. K.	3		9	NE.	2	C. K.	10		9	SW.	1	C. K.	6
May 19	0	N.	1	S.	1	May 20	0	S.	1	Clear	0	May 21	0	W. SW.	1	C. K. S.	3
	3	E.	1	C. K.	10		3	SW.	1	Clear	0		3	SW.	1	Haze	
	6	S.	1	K.	10		6	NW.	2	C. K.	8		6	SW.	1	Fog	
	9	SW.	2	K.	10		9	SW.	1	C.	3		9	SE.	2	Haze	
	Noon	S.	2	C. K.	7		Noon	SW.	1	C.	3		Noon	S.	2	C. K.	6
	3	S.	2	C. K.	2		3	S. by W.	1	Haze			3	S.	3	C. K.	6
	6	S.	2	C. K.	2		6	SW.	1	C. K.	10		6	S. SW.	2	Haze	
	9	S.	2	Clear	0		9	SW.	1	C. K.	3		9	W.	2	N.	9
May 22	0	W.	2	N.	10	May 23	0	S.	2	Clear	0	May 24	0	NE.	1	K.	10
	3	NW.	1	C. S.	4		3	SE.	1	C. K.	10		3	SW.	1	K.	10
	6	N.	1	C. K.	8		6	SW.	1	K.	10		6	SW.	1	C. K.	10
	9	NE.	2	C. K.	7		9	S.	3	K.	10		9	SW.	2	C. K.	8
	Noon	N.	2	C. K.	6		Noon	S.	2	K.	10		Noon	SW.	1	C. K.	9
	3	E.	2	C. K.	5		3	SE.	2	K.	10		3	SW.	1	C. K.	9
	6	SE.	2	Haze			6	S.	2	C. K.	8		6	W.	1	K.	10
	9	SE.	2	Haze			9	S.	1	K.	10		9	W.	1	K.	10

REMARKS.

May 10. Rain from 9^h p. m. to 3^h p. m. on the 11th. Amount, 0.882 inch.
12. A heavy white frost this morning.
13. Rain at 2^h 35^m p. m. Amount, 0.104 inch.
19. Lightning and thunder from 6^h to 9^h p. m. A display of the aurora borealis from 11^h 30^m p. m. to 3^h a. m. on the 20th.
21. Rain, with lightning and thunder, at 8^h 40^m p. m. Amount, 0.190 inch.
23. Light showers. Amount, 0.015 inch.
24. Heavy shower at 8^h 20^m. Amount, 0.716 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. May 25	0	W.	1	C. K.	8	1870. May 26	0	N. NE.	1	C. K.	7	1870. May 27	0	NE.	3	K.	10
	3	W.	1	C. K.	6		3	NE.	2	C. K.	8		3	NE.	4	K.	10
	6	W.	1	K.	10		6	NE.	2	C. K.	6		6	NE.	5	K.	10
	9	NW.	2	C. K.	8		9	NE.	3	C. K.	10		9	NE.	4	N.	10
	Noon	W. by S.	2	C. K.	3		Noon	NE.	3	C. K.	10		Noon	NE.	3	N.	10
	3	W.	1	C. K.	4		3	NE.	3	N.	10		3	NE.	3	N.	10
	6	N.	1	C. K.	3		6	NE.	3	C. K.	10		6	NE.	3	N.	10
	9	NE.	1	C. K.	9		9	NE.	2	N.	10		9	NE.	3	N.	10
May 28	0	NE.	2	N.	10	May 29	0	NE.	1	N.	10	May 30	0	E.	1	K.	10
	3	N.	2	K.	10		3	NE.	1	N.	10		3	NE.	1	C. K.	10
	6	NW.	2	K.	10		6	NW.	1	N.	10		6	NW.	1	C. K. S.	9
	9	NW.	2	Mist	10		9	NW.	1	K.	10		9	E.	1	C. K.	9
	Noon	NE.	2	C. K.	10		Noon	W. NW.	1	K.	10		Noon	S.	1	C. K.	10
	3	N. by E.	1	N.	10		3	NW.	1	K.	10		3	S. SW.	1	C. K.	8
	6	NE.	1	N.	10		6	E.	1	C. K.	10		6	E.	1	C. K.	7
	9	NE.	1	N.	10		9	E.	1	K.	10		9	E.	1	K.	10
May 31	0	NE.	1	K.	10												
	3	NE.	1	N.	10												
	6	NE.	1	K.	10												
	9	E.	1	C. K.	10												
	Noon	E. SE.	1	C. K	8												
	3	SE.	1	C. K.	3												
	6	S.	1	N.	10												
	9	S.	2	C. K.	10												
June 1	0	SE.	1	N.	10	June 2	0	NE.	1	N.	10	June 3	0	NE.	1	N.	10
	3	W.	1	N.	10		3	NE.	1	N.	10		3	E.	1	N.	10
	6	W.	1	N.	10		6	NE.	1	K.	10		6	E.	1	N.	10
	9	SW.	1	N.	10		9	E. NE.	1	N.	10		9	NE.	1	N.	10
	Noon	S.	1	C. K.	9		Noon	E.	1	N.	10		Noon	S. SW.	1	C. K.	9
	3	S. SE.	1	C. K.	6		3	E.	1	N.	10		3	SE.	1	C. K.	10
	6	E.	2	N.	10		6	SE.	1	N.	10		6	E.	1	C. K.	9
	9	E.	2	K.	10		9	NE.	1	N.	10		9	E.	2	C. K.	10
June 4	0	E.	2	K.	10	June 5	0	NE.	1	K.	10	June 6	0	S.	1	C. S.	2
	3	E. NE.	2	K.	10		3	NE.	1	Mist	10		3	SE.	1	K.	10
	6	NE.	2	K.	10		6	E. SE.	1	Mist	10		6	SE.	1	N.	10
	9	NE.	2	K.	10		9	E.	1	K.	10		9	SW.	1	N.	10
	Noon	E.	2	C. K.	8		Noon	S.	1	C. K.	9		Noon	E. SE.	1	C. K.	8
	3	E.	3	N.	9		3	S.	1	C. K.	6		3	E.	1	C. K.	8
	6	E.	2	C. K.	6		6	S.	1	C. K. S.	5		6	W.	1	C. K.	6
	9	E. NE.	2	C. K.	4		9	S.	1	C. S.	2		9	SE.	1	C. K.	7

REMARKS.

May 25. Lightning during the night.
26. Rain at 8^h 30^m p. m. Amount, 0.050 inch.
27. Rain-squalls during the day. Amount, 0.430 inch.
28. Rain from 3 p. m. to noon on the 29th. Amount, 0.922 inch.
31. Rain from 9^h 50^m p. m. to noon on June 1. Amount, 0.355 inch.
June 2. Rain during the day, 0.270 inch.
3. Rain in the morning, 0.392 inch.
4. Light showers during the day.
6. Began to rain at 4^h 15^m a. m. Amount, 0.660 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. June 7	0	W.	1	C. K.	4	1870. June 8	0	NW.	1	C. K.	4	1870. June 9	0	S.	1	C. K.	7
	3	NW.	1	C. K.	2		3	NW.	1	C. K.	7		3	SE.	1	C. K.	8
	6	W.	1	Fog			6	NE.	1	C. K.	4		6	NE.	1	C. K.	9
	9	NE.	1	C. K.	2		9	N. NW.	2	C. K.	3		9	S.	1	C. K.	9
	Noon	S.	1	C. K.	4		Noon	S. SE.	1	C. K.	7		Noon	E. by S.	1	N.	10
	3	NE.	1	N.	10		3	E.	2	C. K.	4		3	S. SE.	1	C. K.	8
	6	NE.	1	C. K.	8		6	SE.	1	C. K.	7		6	E.	1	N.	10
	9	N.	1	C.	2		9	S.	1	C.	6		9	NE.	1	N.	10
June 10	0	E.	1	N.	10	June 11	0	W.	1	C. K.	4	June 12	0	SW.	2	C. K.	6
	3	SW.	1	C. K.	10		3	NW.	1	C. K.	5		3	W.	1	C. K.	8
	6	E.	1	C. K.	9		6	SW.	1	C. K.	10		6	SW.	1	C.	1
	9	SE.	2	C. K.	10		9	SE.	2	C. K.	2		9	S. SE.	1	C. K.	7
	Noon	SW.	1	C. K.	9		Noon	S.	3	C. K.	7		Noon	SE.	2	C. K.	7
	3	E.	2	C. K.	10		3	S.	3	C. K.	5		3	SE.	3	C. K.	10
	6	E.	2	C. K.	7		6	SW.	1	C. K.	9		6	SE.	4	C. K.	9
	9	S. SE.	1	C. K.	2		9	S.	1	C. S.	2		9	SE.	4	N.	10
June 13	0	SE.	2	C. K.	6	June 14	0	SW.	1	K.	10	June 15	0	S. SW.	2	Clear	0
	3	S.	3	N.	10		3	S. SW.	1	C. K.	9		3	S.	1	C. K.	4
	6	SW.	2	C. K.	9		6	SW.	1	C. K.	10		6	S.	1	C. K.	8
	9	SW.	3	C. K.	8		9	W. SW.	1	C. K.	7		9	SW.	2	C. K.	3
	Noon	S.	3	C. K.	9		Noon	S. SE.	2	C. K.	7		Noon	S.	2	C. K.	3
	3	S.	3	C. K.	6		3	S. SW.	2	C. K.	9		3	SW.	2	C. K.	3
	6	SW.	1	C. K.	10		6	SW.	1	C. K.	8		6	N. NE.	2	C. K.	9
	9	S. SW.	1	C. K.	10		9	SW.	1	S.	1		9	SE.	1	N.	10
June 16	0	SE.	2	N.	10	June 17	0	W.	1	C. K.	7	June 18	0	W.	1	C.	4
	3	W.	1	C. K.	9		3	NW.	1	C. K.	9		3	W.	1	Clear	0
	6	W.	1	C. K.	9		6	NW.	2	Clear	0		6	W.	1	C.	2
	9	SW.	1	C. K.	10		9	NW.	2	C. K.	2		9	W. NW.	1	C. K.	7
	Noon	W.	1	C. K.	8		Noon	W. NW.	2	C. K.	7		Noon	W.	1	C. K.	7
	3	S. SW.	2	N.	10		3	NW.	2	C. K.	5		3	W.	1	C. K.	7
	6	S. SW.	1	C. K.	9		6	W.	1	C. K.	7		6	W. NW.	1	C. K.	9
	9	SW.	1	C. K.	10		9	NW.	1	Clear	0		9	NW.	1	C. K.	2
June 19	0	NW.	1	C. K.	2	June 20	0	SW.	1	Clear	0	June 21	0	SW.	1	C. S.	3
	3	W. NW.	1	C. K.	9		3	SW.	1	Haze			3	W.	1	C.	2
	6	W. NW.	1	Haze			6	W. by S.	1	Haze			6	NW.	2	Clear	0
	9	W.	1	Haze			9	S.	1	Clear	0		9	NW.	3	Clear	0
	Noon	S. SE.	1	C. K.	8		Noon	S.	1	C. K.	2		Noon	NW.	3	Clear	0
	3	S.	1	Haze			3	S.	2	C. K.	3		3	N. NW.	3	C.	2
	6	S. by W.	1	Haze			6	S.	1	C.	4		6	N. NE.	2	C. K.	2
	9	SW.	1	Haze			9	S. by W.	1	S.	1		9	N. NW.	1	C. K.	2

REMARKS.

June 7. Lightning in the N. and E. during the evening.
9. A heavy shower, with lightning and thunder, at 11^h 15^m a. m. Amount, 1.588 inches.
10. Lightning in the N. during the evening. Light shower. Amount, 0.020 inch.
11. Heavy shower of rain at 5^h 15^m p. m. Amount, 0.260 inch.
12. A light shower at 8^h 45^m p. m.
13. Several showers in the morning. Amount of rain, 0.330 inch.
15. Several showers in the evening. Amount, 0.370 inch.
21. Lightning during the night.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. June 22	0	W. NW.	1	Clear	0	1870. June 23	0	NW.	1	C.	1	1870. June 24	0	NW.	1	Clear	0
	3	NW.	3	Clear	0		3	W.	1	Clear	0		3	W.	2	Clear	0
	6	N.	1	C. K.	5		6	W.	1	C.	8		6	W.	1	Clear	0
	9	W.	1	Clear	0		9	W.	1	C. K.	8		9	W.	1	Haze	
	Noon	W.	1	Clear	0		Noon	W.	1	C. K̄.	8		Noon	N. NW.	1	Haze	
	3	S.	1	Clear	0		3	W.	1	C. K.	7		3	NW.	1	Haze	
	6	W.	1	C.	5		6	W. NW.	1	C. S.	4		6	W. NW.	1	Haze	
	9	W.	1	C. S.	1		9	NW.	1	S.	2		9	NW.	1	Clear	0
June 25	0	NW.	1	Clear	0	June 26	0	W. NW.	1	Clear	0	June 27	0	NW.	2	Clear	0
	3	W.	1	Clear	0		3	W.	1	Clear	0		3	NW.	1	C. K.	2
	6	W.	1	Clear	0		6	W.	1	Clear	0		6	N. NE.	1	Haze	
	9	NW.	1	Haze			9	NW.	2	Clear	0		9	NE.	1	Haze	
	Noon	N.	2	C.	1		Noon	NW.	2	C. K.	2		Noon	SW.	1	C.	1
	3	NW.	1	Haze			3	NE.	1	C. K.	3		3	W.	1	Haze	
	6	W.	1	Clear	0		6	NW.	1	C. K.	2		6	SW.	1	C. K.	3
	9	W.	1	S.	1		9	NW.	1	C. K. S.	3		9	E.	1	C. K.	7
June 28	0	SW.	1	C. K.	2	June 29	0	W.	2	Clear	0	June 30	0	NW.	2	C. K.	6
	3	W. NW.	1	C. K.	4		3	W.	1	C.	3		3	W.	1	S.	1
	6	W. NW.	1	Haze			6	W.	1	Clear	0		6	W.	1	C. S.	5
	9	NW.	2	Haze			9	N. NW.	2	C. K.	2		9	W. NW.	2	C.	8
	Noon	NW.	2	C. K.	3		Noon	N.	2	C. K.	5		Noon	W.	2	C. K.	6
	3	W.	2	Haze			3	NW.	1	C. K.	9		3	W.	1	C. K.	5
	6	W.	1	C. K.	4		6	S.	1	C. K.	8		6	SW.	1	C.	2
	9	W.	1	C.	3		9	NW.	3	C. K.	10		9	SW.	1	C. S.	2
July 1	0	W.	1	Clear	0	July 2	0	NE.	2	N.	10	July 3	0	N.	1	K.	10
	3	W.	1	C. S.	4		3	NE.	2	K.	10		3	N.	1	K.	10
	6	W. SW.	1	C. K. S.	8		6	NE.	2	K.	10		6	N.	1	K.	10
	9	W. NW.	2	C. K.	6		9	NE.	2	N.	10		9	N. NW.	1	K.	10
	Noon	W.	2	C. K.	7		Noon	NE.	2	N.	10		Noon	W.	1	C. K.	9
	3	SW.	2	C. K.	7		3	NE.	1	N.	10		3	NE.	1	C. K.	10
	6	NE.	1	C. K.	9		6	NE.	2	K.	10		6	NE.	1	C. K.	10
	9	NE.	3	N.	10		9	NE.	2	K.	10		9	NE.	1	C. K.	8
July 4	0	N.	1	C. K.	4	July 5	0	SE.	1	C. K.	10	July 6	0	S.	1	C.	2
	3	N.	1	C. K.	8		3	S.	1	K.	10		3	S.	1	C.	5
	6	N.	1	C. K.	8		6	S.	1	C. K.	10		6	S.	1	C. K.	8
	9	SE.	1	C. K.	10		9	SW.	1	N.	10		9	S. SE.	1	C. K.	8
	Noon	W.	1	C. K.	8		Noon	S. SE.	2	C. K.	9		Noon	SW.	1	C. K.	9
	3	SE.	1	C. K.	10		3	S. SE.	2	C. K.	5		3	S. SE.	2	C. K.	9
	6	E.	2	C. K.	10		6	S.	1	C. K.	4		6	S.	1	. K.	7
	9	SE.	2	K.	10		9	S.	2	C.	2		9	SE.	2	. K.	10

REMARKS.

June 26. Lightning and thunder during the evening. A few drops of rain.
27. Lightning during the night.
29. Lightning during the evening.
July 1. Shower at 2^h p. m. Amount of rain, 0.080 inch.
2. Rain during the day. Amount, 0.500 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. July 7	0	SE.	2	C. K. S.	3	1870. July 8	0	SW.	2	N.	10	1870. July 9	0	NW.	2	Clear	0
	3	S.	1	K.	10		3	SW.	1	N.	10		3	NW.	2	Clear	0
	6	S.	2	K.	10		6	SW.	1	C. K.	9		6	NW.	1	Clear	0
	9	S.	2	C. K.	10		9	NW.	2	C. K.	2		9	W.	2	Clear	0
	Noon	S.	3	C. K.	8		Noon	W. SW.	3	C. K.	4		Noon	W. NW.	2	C. K.	2
	3	S. SW.	2	C. K.	6		3	W. NW.	2	C. K.	3		3	W.	1	C. K.	3
	6	S.	3	C.	10		6	W. NW.	2	C.	1		6	SW.	1	C. K.	4
	9	SW.	1	N.	10		9	NW.	2	Clear	0		9	S.	1	Haze	
July 10	0	S.	1	Haze		July 11	0	SW.	1	C. K.	6	July 12	0	S.	1	Clear	0
	3	SW.	1	Haze			3	SW.	1	C. K.	7		3	SE.	1	Clear	0
	6	SW.	1	C. K.	8		6	W.	1	C. K.	5		6	W.	1	C. K.	7
	9	S.	1	C. K.	8		9	S. SW.	1	C. K.	4		9	S.	1	C. K.	5
	Noon	S.	1	C. K.	9		Noon	SW.	2	C. K.	10		Noon	S.	2	C. K.	8
	3	S.	1	C. K.	10		3	SE.	1	C. K.	10		3	SW.	3	C. K.	8
	6	S.	2	C. K.	10		6	S.	1	C. K.	5		6	W. NW.	3	N.	10
	9	S.	1	C. K.	9		9	S.	1	Clear	0		9	SW.	1	C. K.	7
July 13	0	SW	1	C. K.	8	July 14	0	SW.	1	C	1	July 15	0	SW.	1	C. S.	4
	3	W.	2	C. K.	7		3	SW.	1	C.	4		3	W.	1	S.	2
	6	W. NW.	2	C. K.	6		6	SW.	1	C. K.	2		6	W.	1	Clear	0
	9	W. NW.	2	C.	2		9	SE.	1	Haze			9	NW.	1	Haze	
	Noon	SW.	1	C. S.	2		Noon	S. SE.	1	C. K.	4		Noon	S. SE.	1	C. K.	5
	3	W.	1	C.	1		3	SE.	1	C. K.	6		3	S.	1	C. K.	8
	6	S.	1	Clear	0		6	NE.	1	C.	3		6	S. SW.	1	C. K.	10
	9	SW.	1	C. K.	2		9	SW.	1	S.	2		9	SW.	1	C. K. S.	4
July 16	0	SW.	1	C.	1	July 17	0	S.	1	C. K.	2	July 18	0	W.	2	Clear	0
	3	SW.	1	Clear	0		3	S.	1	Clear	0		3	W.	3	Clear	0
	6	SW.	1	C.	10		6	SW.	1	Haze			6	W.	2	C.	1
	9	S. SW.	1	C. K.	6		9	NW.	1	C.	10		9	N. NW.	1	C. K.	2
	Noon	S.	1	C. K.	7		Noon	W.	2	C. K.	2		Noon	W.	1	C. K.	6
	3	S. SE.	2	C. K.	6		3	SW.	2	C. K.	4		3	N.	2	C. K.	7
	6	S.	1	C. K.	7		6	SW.	2	Clear	0		6	SW.	1	C. K.	7
	9	SW.	1	C. K.	2		9	SW.	1	S.	1		9	SW.	1	C. S.	2
July 19	0	SW.	2	C. . S.	4	July 20	0	NW.	1	C. K.	2	July 21	0	W.	1	C. K.	8
	3	SW.	1	C. K.	5		3	NW.	2	Clear	0		3	NW.	1	C. K.	10
	6	NW.	1	C. K. S.	7		6	N. NW.	1	Clear	0		6	W.	1	C. K.	8
	9	NW.	2	C.	4		9	E.	1	C. K.	3		9	NW.	1	C. K.	3
	Noon	W.	2	C. K.	6		Noon	S. SW.	1	C. K.	5		Noon	W. NW.	1	C. K. S.	3
	3	W.	2	C. K	4		3	S.	1	C. K.	7		3	W.	1	C. K.	7
	6	NW.	1	C. K.	4		6	SE.	1	C. K. S.	6		6	NW.	1	C. K.	10
	9	NW.	2	C. K.	2		9	W.	1	N.	10		9	N. NW.	2	C.	3

REMARKS.

July 7. Showers during the evening. Amount of rain, 0.544 inch.
10. Lunar halo at 10^{h} 17^{m} p. m.
12. Showers in the afternoon. Amount of rain, 0.460 inch.
17. Lightning in the north in the evening.
18. Rain, with lightning and thunder, at 2^{h} 10^{m} p. m. Amount of rain, 0.096 inch.
20. Rain, with lightning and thunder, at 7^{h} 10^{m} p. m. Amount of rain, 0.278 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. July 22	0	NW.	2	C. S.	4	1870. July 23	0	S.	1	C. K.	3	1870. July 24	0	S.	2	C.	2
	3	NW.	2	C. K.	3		3	S. SW.	1	C. K.	4		3	SW.	1	C.	3
	6	NE.	2	C. K.	7		6	SW.	1	C. K.	10		6	SW.	1	C. K.	6
	9	NE.	2	C. K.	4		9	SW.	1	C. K.	6		9	W.	2	C. K.	10
	Noon	SE.	1	C. K.	8		Noon	S.	2	C. K.	3		Noon	S.	3	C. K.	7
	3	SE.	1	C. K.	2		3	S.	1	C. K.	4		3	SW.	3	C. K.	7
	6	S.	2	C. K.	7		6	S.	1	C.	3		6	SW.	2	C. K.	3
	9	S.	1	C. K.	9		9	S.	3	Clear	0		9	SW.	1	C. K.	10
July 25	0	SW.	1	C. K.	10	July 26	0	SW.	2	C. K.	5	July 27	0	SW.	1	C. K.	8
	3	SW.	1	C. K.	10		3	SW.	1	C. K.	3		3	SW.	1	C. K.	10
	6	SW.	1	C. K.	6		6	W. SW.	1	C. K.	8		6	SW.	1	C. K. S.	6
	9	W.	2	C. K.	4		9	NW.	2	C. K.	7		9	W.	1	C. K.	9
	Noon	W.	2	C. S.	4		Noon	NW.	2	C. K.	7		Noon	W.	1	C. K.	8
	3	NW.	2	N.	9		3	W.	2	C. K.	8		3	W.	1	C. K.	8
	6	SW.	1	C. K.	7		6	W.	1	C. K.	5		6	NW.	3	N.	10
	9	SW.	1	C. K.	6		9	SW.	1	C. K.	4		9	N.	1	C. K. S.	9
July 28	0	NW.	2	C. K.	3	July 29	0	NE.	2	N.	10	July 30	0	NW.	2	K.	10
	3	NW.	1	C. K. S.	2		3	W.	1	C. K.	3		3	NW.	3	C. K.	10
	6	W. NW.	1	C. K.	4		6	W.	1	C. K.	4		6	NW.	2	C.	2
	9	W.	1	S.	1		9	W.	2	C. K.	3		9	NW.	2	C. K.	2
	Noon	W.	1	C.	2		Noon	W. NW.	3	C. K.	6		Noon	W.	2	C. K.	8
	3	SE.	2	C. K.	7		3	NW.	2	C. K.	7		3	W.	2	C. K.	5
	6	W.	2	N.	10		6	NW.	1	C. K.	8		6	NW.	1	C. K.	4
	9	W. NW.	2	C. K.	9		9	W.	1	K.	10		9	NW.	1	C. S.	1
July 31	0	NW.	1	C. S.	2												
	3	NW.	1	C. K. S.	3												
	6	NW.	1	C. K.	6												
	9	W. NW.	1	C. K.	8												
	Noon	S.	1	C. K.	6												
	3	W.	1	C.	4												
	6	W.	1	C. K.	4												
	9	W.	1	C. K.	4												
Aug. 1	0	W.	1	C. K.	6	Aug. 2	0	W.	1	Clear	0	Aug. 3	0	S. SW.	1	C. K.	3
	3	SW.	1	C. K.	8		3	W.	1	Clear	0		3	SW.	1	Clear	0
	6	NW.	1	C. K.	9		6	W.	1	C. S.	2		6	SW.	1	C.	2
	9	NW.	1	Haze			9	W. NW.	1	C. K.	2		9	SE.	1	C.	1
	Noon	W.	1	Haze			Noon	W.	1	C. K.	2		Noon	S. SE.	1	C. K.	6
	3	SW.	2	Haze			3	S.	1	C. K.	3		3	S.	1	C. K.	3
	6	W.	1	C. K.	7		6	S. SW.	1	C. K.	3		6	S.	1	C. K.	8
	9	W.	1	Clear	0		9	S. SW.	1	C. S.	4		9	S.	1	C. K.	3

REMARKS.

July 24. Lightning at 8h p. m.
25. Showers in the afternoon. Amount of rain, 0.122 inch.
26. Lightning during the night.
27. Heavy shower at 6h p. m. Amount, 0.660 inch.
28. Several showers, with intense lightning, during the night of the 28–29th. Amount of rain, 1.120 inches.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Aug. 4	0	SE.	1	C. K.	2	1870. Aug. 5	0	NW.	1	C. K.	4	1870. Aug. 6	0	W. NW.	1	S.	1
	3	SE.	1	C. K.	2		3	NW.	2	Clear	0		3	NW.	1	Clear	0
	6	SW.	1	C. K.	8		6	NW.	2	C.	1		6	W. NW.	1	C.	3
	9	S.	1	C. K.	7		9	N. NW.	2	C. K.	5		9	W.	1	Clear	0
	Noon	S. SW.	1	C. K.	7		Noon	NW.	1	C. K.	7		Noon	S.	1	C. K.	1
	3	NW.	2	C. K.	10		3	N. NW.	1	C. K.	4		3	S.	2	C. K.	2
	6	NW.	1	C. K.	4		6	SW.	1	C. K.	6		6	S.	1	C. K.	2
	9	NW.	1	C.	1		9	NW.	1	C. S.	1		9	S.	1	Clear	0
Aug. 7	0	SW.	1	Clear	0	Aug. 8	0	S. SE.	2	Clear	0	Aug. 9	0	SE.	2	C. K.	7
	3	SW.	1	Clear	0		3	S.	1	K.	10		3	S.	2	C. K.	8
	6	W. NW.	1	C.	4		6	S.	1	C. K.	10		6	S.	1	C. K.	10
	9	S.	1	Clear	0		9	S.	1	C. K.	7		9	S.	1	K.	10
	Noon	S.	1	C. K.	4		Noon	S.	2	C. K.	8		Noon	S. SE.	1	C. K.	8
	3	S. SE.	2	C. K.	6		3	SE.	2	C. K.	4		3	SE.	1	C. K.	6
	6	SE.	2	C. K.	4		6	SE.	2	C. K.	5		6	W.	1	C. K.	10
	9	SE.	1	C.	2		9	SE.	2	C. K.	2		9	W.	1	C. K. S.	10
Aug. 10	0	SW.	1	C. K.	8	Aug. 11	0	N. NE.	1	C. K.	9	Aug. 12	0	SW.	1	C. K.	9
	3	SW.	1	C. K.	9		3	N.	1	C. K.	9		3	SW.	1	C. K.	8
	6	SW.	1	N.	10		6	W.	1	K.	10		6	S.	1	C. K.	8
	9	S. SW.	1	C. K.	9		9	SW.	1	C. K.	10		9	Calm	0	Clear	0
	Noon	Calm	0	K. S.	10		Noon	S. SW.	1	C. K.	8		Noon	W.	1	C. K.	2
	3	S.	1	K.	10		3	S. SW.	1	C. K.	10		3	W.	1	K.	1
	6	E.	1	C. K.	9		6	W.	1	C. K.	10		6	NW.	1	C. K.	2
	9	N.	1	C. K.	9		9	SW.	1	C. K.	10		9	E.	1	C. K.	3
Aug. 13	0	S. SW.	1	C. K.	6	Aug. 14	0	NW.	1	N.	10	Aug. 15	0	W.	1	C. K.	8
	3	W.	1	C. K.	8		3	NW.	1	C. K.	9		3	W.	1	C. K.	10
	6	NW.	1	C. K. S.	7		6	NW.	1	C. K.	10		6	W.	1	C. K.	6
	9	W.	1	C. K.	9		9	NW.	1	N.	10		9	NW.	1	C. K.	8
	Noon	W.	1	C. K.	9		Noon	NW.	2	K.	10		Noon	W.	1	C. K.	10
	3	S.	1	C. K.	8		3	NW.	1	C. K.	10		3	NW.	1	C. K.	10
	6	SW.	1	C. K.	10		6	NW.	1	C. K.	5		6	SW.	1	C. K.	7
	9	SW.	1	C. K.	10		9	W.	1	Clear	0		9	W.	1	Clear	0
Aug. 16	0	NW.	1	Clear	0	Aug. 17	0	SW.	1	C. K.	10	Aug. 18	0	SW.	1	C. S.	4
	3	W.	1	C. K.	9		3	W.	1	C. K.	8		3	W.	1	C. K.	8
	6	NW.	1	C. K.	4		6	W.	1	C. K.	5		6	W.	1	Fog	
	9	SE.	1	C. K.	10		9	W.	1	C.	1		9	W. NW.	1	Clear	0
	Noon	SW.	1	C. K.	9		Noon	S. SE.	1	C. K.	3		Noon	W. SW.	1	C. K.	1
	3	SW.	1	C. K.	6		3	S.	1	C. K.	2		3	S.	1	C. K.	1
	6	E.	1	C. K.	8		6	S.	1	C. K. S.	4		6	S.	1	C.	1
	9	SE.	1	K.	10		9	SW.	1	S.	1		9	S.	1	S.	1

REMARKS.

August 4. A light shower at 1 p. m.
9. Rain at 0^h 20^m p. m., 0.380 inch.
10. Several showers during the day with heavy thunder. Amount of rain, 0.290 inch.
11. Showery during the day. Amount of rain, 0.134 inch.
12. Lightning in the east during the evening.
13. Lightning during the evening.
14. Heavy showers in the morning. Amount of rain, 1.020 inch.
16. Dew collected from the rain-gauge, 0.008 inch.
Light shower at 11^h 5^m p. m.
17. Dew, 0.008 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Aug. 19	0	SW.	1	C.	2	1870. Aug. 20	0	S.	2	C. K.	3	1870. Aug. 21	0	NW.	2	K.	10
	3	SW.	1	C.	1		3	SW.	1	C. K.	7		3	NW.	2	C. K.	6
	6	S. SW.	1	Clear	0		6	SW.	1	C. K.	7		6	NW.	1	C.	4
	9	S.	1	Clear	0		9	W.	2	C. K.	7		9	NW.	2	Haze	
	Noon	S.	2	C. K.	4		Noon	W. NW.	3	C. K.	6		Noon	NW.	2	Haze	
	3	S.	2	C.	2		3	NW.	3	C. K.	7		3	N.	2	Haze	
	6	S.	1	C. K.	3		6	NW.	2	C. K.	4		6	N. NW.	1	Haze	
	9	SW.	1	C. K.	8		9	NW.	2	S.	1		9	N.	1	Haze	
Aug. 22	0	N.	1	Haze		Aug. 23	0	NW.	1	Haze		Aug. 24	0	SE.	1	C. K.	4
	3	NW.	1	Haze			3	NW.	1	Haze			3	S.	1	C. K.	4
	6	NW.	1	Haze			6	NW.	1	Fog			6	SW.	1	C. K.	8
	9	NW.	1	Haze			9	W. NW.	1	Haze			9	NW.	1	N.	10
	Noon	NW.	1	Haze			Noon	S.	1	Haze			Noon	S. SW.	1	C. K.	9
	3	NE.	1	Haze			3	SW.	1	Haze			3	SE.	1	C. K.	7
	6	N. NW.	1	C. K.	6		6	SE.	1	C. K.	6		6	SE.	1	C. K.	8
	9	N. NW.	1	Haze			9	SE.	1	K.	10		9	S.	1	C.	1
Aug. 25	0	S.	1	C. K.	4	Aug. 26	0	W.	2	K.	10	Aug. 27	0	N.	1	Clear	0
	3	SW.	1	C. K.	6		3	NW.	2	C. K.	10		3	N.	1	Clear	0
	6	SW.	1	C.	2		6	NW.	1	C. K.	8		6	N.	1	C. K.	5
	9	S.	1	C.	2		9	N. NW.	3	C. K.	8		9	NE.	1	C. K.	8
	Noon	W.	1	C. K.	4		Noon	NW.	3	C. K. S.	1		Noon	E. NE.	1	C. K.	10
	3	S. SW.	1	C. K.	3		3	N.	3	Clear	0		3	NE.	1	C. K.	6
	6	SW.	1	C.	2		6	N. NW.	1	Clear	0		6	E.	1	C. K.	8
	9	W.	1	C. K.	10		9	N.	1	S.	1		9	S.	1	K.	10
Aug. 28	0	S.	1	K.	10	Aug. 29	0	SE.	1	Clear	0	Aug. 30	0	SW.	1	C. K.	8
	3	S.	1	K.	10		3	S.	1	C. K.	6		3	W.	1	C. K.	9
	6	S.	1	K.	10		6	S.	1	C. K.	8		6	NW.	2	C. K. S.	9
	9	S.	2	C. K.	9		9	S.	1	C. K.	2		9	W.	1	C. K.	10
	Noon	SW.	3	C. K.	9		Noon	S. SE.	1	C. K.	5		Noon	W.	1	C. S.	2
	3	W. SW.	3	C.	7		3	S.	1	C. K.	4		3	W. NW.	1	C. S.	2
	6	S.	2	C. K. S.	6		6	S.	3	C. K.	7		6	N.	1	C. K. S.	6
	9	S.	1	C.	2		9	NW.	3	C. K.	10		9	N. NW.	1	C. S.	2
Aug. 31	0	NW.	1	C.	1												
	3	W.	1	Haze													
	6	W. NW.	1	C. K. S.	7												
	9	NE.	1	C. K.	10												
	Noon	S.	1	C. K.	9												
	3	S.	1	C. K.	9												
	6	SE.	1	C. K.	8												
	9	SW.	1	C.	4												

REMARKS.

August 19. Lightning in the evening. A brilliant display of the aurora borealis commenced at 8^h 50^m p. m., and continued during the night.

24. Rain at 6^h 50^m a. m. Amount, 0.170 inch.

25. Shower at 9^h 10^m. Amount, 0.036 inch.

29. Rain, with lightning and thunder, at 9^h 10^m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Sept. 1	0	SW.	1	Clear	0	1870. Sept. 2	0	SW.	1	C. K.	3	1870. Sept. 3	0	E.	1	C. K.	10
	3	W.	1	Clear	0		3	W.	1	C. K.	7		3	E.	1	C. K.	10
	6	W.	1	C. K.	4		6	NW.	1	C. K. S.	4		6	NE.	1	C. K.	10
	9	SW.	1	C. K.	8		9	S.	1	C.	2		9	NE.	1	N.	10
	Noon	S. SE.	1	C. K.	7		Noon	S.	1	C. K.	6		Noon	W. NW.	2	C. K.	10
	3	SE.	1	C. K.	7		3	S.	1	C. K.	3		3	W.	1	C. K.	10
	6	E.	1	C. K.	3		6	E.	1	C. K. S.	9		6	W.	1	C. S.	2
	9	W.	1	C. K.	3		9	E.	2	C. K.	10		9	W.	1	C.	2
Sept. 4	0	W.	1	C. K.	9	Sept. 5	0	NW.	1	Clear	0	Sept. 6	0	W.	1	Clear	0
	3	SW.	1	C. S.	3		3	NW.	2	Clear	0		3	W.	1	Clear	0
	6	SW.	1	C. K.	10		6	NW.	1	Clear	0		6	W.	1	Clear	0
	9	NW.	2	C. K.	9		9	NW.	3	Clear	0		9	NW.	1	C. K.	2
	Noon	W. NW.	1	C. K.	2		Noon	N. NW.	2	C.	1		Noon	W.	2	C. K.	3
	3	W.	1	N.	10		3	N. NW.	1	C.	2		3	W.	1	C. K.	3
	6	W. NW.	2	C. K.	3		6	NW.	2	C. S.	1		6	W.	1	Clear	0
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	NW.	1	Clear	0
Sept. 7	0	NW.	1	Clear	0	Sept. 8	0	S.	1	C. K.	4	Sept. 9	0	S. SE.	2	Clear	0
	3	NW.	1	Clear	0		3	SW.	1	C. K.	8		3	E.	1	C. K.	5
	6	NW.	1	Clear	0		6	SW.	1	C. K.	9		6	E. SE.	1	C. K.	9
	9	NW.	1	Clear	0		9	S.	1	C. K.	6		9	S. SE.	1	C. K.	10
	Noon	SW.	1	C. K.	1		Noon	S.	1	C. K.	4		Noon	S.	1	C. K.	7
	3	S. SE.	1	C. K.	2		3	E.	1	C. K.	7		3	E.	1	C. K.	7
	6	SE.	2	C. K.	2		6	SE.	2	C. K. S.	8		6	SE.	1	C.	2
	9	E.	1	C. K.	10		9	S.	2	Clear	0		9	S.	1	Clear	0
Sept. 10	0	SW.	1	C. K.	7	Sept. 11	0	N.	3	C.	1	Sept. 12	0	NW.	2	Clear	0
	3	SW.	1	C. K.	8		3	N.	2	Clear	0		3	NW.	1	Clear	0
	6	SW.	1	C. K.	9		6	N.	2	C. K.	3		6	NW.	1	Clear	0
	9	SW.	2	C.	2		9	N.	2	C. S.	2		9	NE.	2	Clear	0
	Noon	SW.	1	C. K.	8		Noon	N.	2	C. S.	4		Noon	NW.	1	C. K. S.	2
	3	W. NW.	2	C. K.	7		3	N.	1	C. S.	5		3	NE.	2	C. K.	3
	6	N. NW.	2	C. K.	9		6	N. NW.	1	C. K. S.	6		6	NE.	1	C. S.	6
	9	N.	2	C. K.	10		9	NW.	1	Clear	0		9	W.	1	S.	1
Sept. 13	0	W.	1	C. S.	3	Sept. 14	0	W.	1	C. K.	4	Sept. 15	0	N.	1	Clear	0
	3	W.	1	C.	4		3	NW.	2	Clear	0		3	NW.	1	C. K.	5
	6	W.	1	Fog			6	NW.	1	Clear	0		6	W. NW.	1	C. K.	8
	9	W.	1	Haze			9	NE.	1	C. S.	4		9	N. NE.	1	C. K.	9
	Noon	SW.	1	C. K.	2		Noon	SE.	2	C. S.	3		Noon	S.	1	C. K.	9
	3	SW.	1	Clear	0		3	SE.	2	C. S.	4		3	S.	1	C. K.	5
	6	E.	1	C. K.	2		6	E. SE.	1	C. S.	2		6	SE.	1	C. K.	8
	9	SE.	1	C. K.	4		9	SE.	1	C. S.	1		9	SE.	1	C. K.	5

REMARKS.

September 3. A light drizzling rain during the morning. Amount of rain, 0.006 inch.
4. A light shower at $9^h 40^m$ a. m. Amount of rain, 0.018 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Sept. 16	0	SW.	1	C. K.	8	1870. Sept. 17	0	NE.	1	C. K.	8	1870. Sept. 18	0	N.	2	N.	10
	3	W.	1	C.	4		3	N.	1	C. K.	10		3	N.	2	N.	10
	6	W. NW.	1	Fog			6	NW.	2	N.	10		6	N. NW.	2	N.	10
	9	SW.	1	C. K.	3		9	N.	2	K.	10		9	NW.	2	N.	10
	Noon	E. SE.	2	C. K.	8		Noon	NE.	2	K.	10		Noon	NW.	2	N.	10
	3	SE.	2	C. K.	2		3	N.	2	K.	10		3	NW.	3	C. K.	10
	6	E.	1	C. K.	7		6	N.	2	K.	10		6	NW.	2	C. K.	9
	9	N. NE.	1	C. K.	2		9	N.	3	K.	10		9	NW.	2	Clear	0
Sept. 19	0	NW.	2	Clear	0	Sept. 20	0	N.	1	Clear	0	Sept. 21	0	NW.		Clear	0
	3	NW.	2	Clear	0		3	N.	1	Clear	0		3	NW.		Clear	0
	6	N. NW.	2	C. K. S.	6		6	W.	1	Fog			6	W. NW.		Fog	
	9	N. NE.	1	C. K.	2		9	W. NW.	1	Clear	0		9	N.		Clear	0
	Noon	W.	2	Clear	0		Noon	NE.	2	Clear	0		Noon	E.		C. K.	1
	3	NE.	1	Clear	0		3	E. SE.	1	Clear	0		3	SE.		Clear	0
	6	NE.	1	Clear	0		6	E.	1	Clear	0		6	NE.		Clear	0
	9	N.	1	Clear	0		9	NW.	1	Clear	0		9	NE.		Clear	0
Sept. 22	0	N.	1	Clear	0	Sept. 23	0	W.	1	Clear	0	Sept. 24	0	SW.	1	C. S.	2
	3	W.	1	Clear	0		3	W.	1	Clear	0		3	SW.	1	S.	2
	6	W.	1	Fog			6	W.	1	Fog			6	SW.	1	C. S.	4
	9	N. NE.	1	Fog			9	SW.	1	C. K.	3		9	SW.	1	C. K.	5
	Noon	W.	1	C. K.	3		Noon	SW.	1	C. K.	6		Noon	S.	1	C. K.	2
	3	SW.	1	C. K.	2		3	SE.	1	C. K.	7		3	S.	1	C. K.	4
	6	SE.	1	Clear	0		6	W.	1	C. S.	2		6	SW.	1	C. K.	4
	9	W.	1	Clear	0		9	SW.	1	C. S.	3		9	SW.	1	C. S.	2
Sept. 25	0	S.	1	Clear	0	Sept. 26	0	NW.	1	C. K.	2	Sept. 27	0	W.	1	C. K.	10
	3	SW.	1	Clear	0		3	NW.	1	C. K.	3		3	SE.	1	K.	10
	6	SW.	1	C. K. S.	6		6	N.	1	C. K.	8		6	NE.	1	N.	10
	9	S.	1	C.	4		9	NE.	1	C. K.	10		9	E.	2	K.	10
	Noon	S. SE.	1	C.	2		Noon	NE.	1	C. K.	10		Noon	S.	1	C. K.	10
	3	SE.	1	C.	2		3	E.	1	C. K.	9		3	W.	1	C. K.	9
	6	S.	1	C. S.	3		6	E.	1	C. K.	8		6	NE.	1	C. K. S.	4
	9	SW.	1	C. K.	2		9	E.	1	C. S.	3		9	NE.	1	C. K.	4
Sept. 28	0	N.	1	K.	10	Sept. 29	0	E.	1	K.	10	Sept. 30	0	NE.	2	N.	10
	3	NW.	1	K.	10		3	E.	1	K.	10		3	NE.	3	N.	10
	6	NW.	1	K.	10		6	E. NE.	2	N.	10		6	E.	3	N.	10
	9	N.	1	K.	10		9	NE.	1	N.	10		9	SE.	3	K.	10
	Noon	NE.	1	C. K.	10		Noon	E.	2	N.	10		Noon	SE.	2	C. K.	10
	3	E.	1	N.	10		3	E.	2	C. K.	10		3	S.	2	C. K.	9
	6	E.	1	N.	10		6	E.	2	N.	10		6	SW.	1	C. K. S.	9
	9	E.	1	N.	10		9	E.	3	K.	10		9	W.	1	K.	10

REMARKS.

September 18. Rain during the forenoon. Amount, 0.644 inch.
21. Brilliant display of the aurora borealis from 11^h 30^m p. m. to daylight on the 22d.
24. A bright auroral display at 4^h a. m.; also, from dark until midnight. In both cases the colors were very brilliant.
27. Light showers at intervals during the 27th and 28th. Amount of rain, 0.370 inch.
29. Rain at 6^h a. m., continuing twenty-four hours. Amount, 1.170 inches.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Oct. 1	0	NW.	1	Clear	0	1870. Oct. 2	0	N.	2	C. K.	9	1870. Oct. 3	0	NE.	2		10
	3	NW.	1	Clear	0		3	NE.	2	C. K.	9		3	N.	2	N.	10
	6	NW.	1	C. K.	9		6	NE.	2	C. K.	9		6	NW.	1	N.	10
	9	W.	1	C. K.	8		9	N. NE.	2	C. K.	10		9	NW.	1	K.	10
	Noon	W.	2	C. K.	6		Noon	NE.	2	N.	10		Noon	W.	2	K.	10
	3	W.	2	C. K.	9		3	NE.	2	N.	10		3	SE.	1	C. K.	6
	6	N.	1	C. K.	9		6	NE.	1	N.	10		6	N. NE.	2	C. K. S.	9
	9	N. NW.	1	C. K.	9		9	NE.	2	N.	10		9	SW.	1	C. K.	8
Oct. 4	0	NW.	1	C. K.	3	Oct. 5	0	W. SW.	1	C. .	3	Oct. 6	0	W.	1	Clear	0
	3	NW.	1	Fog			3	NW.	1	C. .	2		3	SW.	1	Clear	0
	6	W.	1	C. K.	1		6	NW.	1	Haze			6	W.	1	C. S.	4
	9	S. SE.	1	Clear	0		9	NW.	2	C. K.	2		9	NE.	1	K.	10
	Noon	W.	2	C. K.	4		Noon	SW.	1	C. K.	7		Noon	NE.	2	C. K.	9
	3	W.	2	C.	2		3	W. NW.	1	C. K.	10		3	E. NE.	2	C. K.	9
	6	NW.	2	Haze			6	NW.	1	C. K.	9		6	NE.	3	C. K.	10
	9	NW.	2	Haze			9	W. NW.	1	C. K.	8		9	N. NE.	3	K.	10
Oct. 7	0	N. NE.	2	C. K.	10	Oct. 8	0	NW.	1	C. K.	8	Oct. 9	0	NW.	1	Clear	0
	3	NW.	2	C. K. S.	2		3	NW.	1	C. K.	9		3	NW.	1	Clear	0
	6	N. NE.	2	C. K. S.	9		6	NW.	2	C. K.	10		6	NW.	1	Fog	
	9	NE.	2	C. K.	8		9	N.	1	C. K.	8		9	NW.	1	Clear	0
	Noon	N. NE.	3	C. K.	6		Noon	NW.	2	C. K.	3		Noon	N. NW.	1	Clear	0
	3	NE.	2	C. K.	10		3	N.	1	C. K.	2		3	W. NW.	1	Clear	0
	6	N.	1	C. K.	8		6	N.	1	Clear	0		6	W.	1	C. S.	2
	9	N. NW.	1	C. K.	10		9	NW.	1	Clear	0		9	W.	1	C. S.	1
Oct. 10	0	NW.	2	Fog		Oct. 11	0	S.	1	C. K.	3	Oct. 12	0	S.	1	N.	10
	3	NW.	1	Fog			3	S.	1	C. K.	10		3	W.	1	N.	10
	6	NW.	1	Fog			6	S.	1	C. K. S.	9		6	W. NW.	1	N.	10
	9	W.	1	Haze			9	S.	1	C. K.	10		9	W. NW.	1	C. K.	6
	Noon	S.	1	Clear	0		Noon	W. SW.	1	N.	10		Noon	NW.	2	C. K.	3
	3	S.	1	C. S.	3		3	S.	1	C. K.	10		3	NW.	2	C. K.	3
	6	S. SE.	1	C. K.	6		6	S.	1	K.	10		6	N. NW.	1	C. K. S.	2
	9	W. SW.	1	C. K.	3		9	S.	1	K.	10		9	NW.	1	C. K.	3
Oct. 13	0	NW.	2	C. K. S.	10	Oct. 14	0	W.	1	Clear	0	Oct. 15	0	SW.	1	C. K.	6
	3	NW.	1	N.	10		3	W. SW.	1	Clear	0		3	W.	1	Clear	0
	6	W.	1	N.	10		6	W. NW.	1	Clear	0		6	W.	1	Fog	
	9	W.	2	C.	1		9	NW.	2	Clear	0		9	SW.	1	Clear	0
	Noon	W.	3	C.	2		Noon	W. NW.	1	Clear	0		Noon	SE.	1	Clear	0
	3	W.	3	C. K.	4		3	W. NW.	1	C. K.	4		3	SE.	1	Clear	0
	6	W.	1	C. K.	2		6	SW.	1	C. S.	3		6	SW.	1	S.	1
	9	W.	2	Clear	0		9	SW.	1	C. S.	3		9	W.	1	Clear	0

REMARKS.

October 2. Rain during the afternoon. Amount, 0.772 inch.
3. Rain during the morning. Amount, 0.480 inch.
10. A light shower. Amount, 0.010 inch.
11. Rain at noon. Amount, 0.162 inch.
12. Heavy rain during the morning. Amount, 1.760 inches.
15. A brilliant aurora from $7^h\ 20^m$ to 9^h p. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Oct. 16	0	W.	1	Clear	0	1870. Oct. 17	0	SW.	1	Clear	0	1870. Oct. 18	0	S.	1	C. K.	10
	3	W.	1	Clear	0		3	W.	1	C. K.	9		3	S.	1	C. K.	10
	6	W.	1	Haze			6	W.	1	Fog			6	S.	1	C. K.	10
	9	SW.	1	Clear	0		9	SW.	1	Fog			9	SW.	2	C. K.	8
	Noon	S.	1	Clear	0		Noo	S.	1	C. K.	8		Noon	NW.	4	C. K.	9
	3	S.	2	Clear	0		3	S.	1	C. K.	8		3	NW.	3	C. K.	7
	6	SE.	1	Clear	0		6	S.	1	C. K.	8		6	W. NW.	2	C. K. S.	9
	9	SW.	1	Clear	0		9	S.	1	K.	10		9	NW.	2	Clear	0
Oct, 19	0	NW.	2	Clear	0	Oct. 20	0	E.	1	Mist	10	Oct. 21	0	NW.	1	C. S.	3
	3	NW.	2	Clear	0		3	E.	1	N.	10		3	NW.	2	C. K.	8
	6	NW.	1	Clear	0		6	NW.	1	K.	10		6	NW.	2	C. K.	9
	9	NE.	2	C.	2		9	SW.	1	N.	10		9	NW.	1	C. K.	9
	Noon	S.	1	C. K. S.	7		Noon	NW.	2	N.	10		Noon	W.	1	C. K.	8
	3	S.	1	C. K.	8		3	W. NW.	1	N.	10		3	S.	1	C. K.	3
	6	SE.	2	C. K.	9		6	NW.	3	C. K. S.	9		6	S. SW.	1	S.	1
	9	SE.	2	K.	10		9	NW.	2	C. S.	3		9	SW.	1	Clear	0
Oct. 22	0	NW.	2	Clear	0	Oct. 23	0	W.	1	Clear	0	Oct. 24	0	SW.	1	Clear	0
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	W.	1	Fog	
	6	NW.	1	Clear	0		6	W. NW.	1	C. K.	2		6	W.	1	Fog	
	9	NW.	1	C. K.	7		9	E.	1	Haze			9	W.	1	Fog	
	Noon	W.	2	C.	2		Noon	SE.	1	Haze			Noon	SW.	2	C.	1
	3	W.	2	C.	1		3	SE.	1	Haze			3	S. SW.	2	Clear	0
	6	W.	1	C. K.	2		6	S.	1	Clear	0		6	S.	1	Clear	0
	9	W. NW.	1	lear	0		9	S.	1	Clear	0		9	SW.	1	Clear	0
Oct. 25	0	W.	1	Clear	0	Oct. 26	0	SW.	1	S.	1	Oct. 27	0	N.	2	K.	10
	3	W.	1	Clear	0		3	W.	1	C. K.	8		3	NE.	2	K.	10
	6	SW.	1	C. S.	1		6	W. NW.	1	N.	10		6	E. NE.	2	K.	10
	9	SW.	1	Haze			9	W. NW.	1	C. K.	8		9	E.	1	K.	10
	Noon	S.	2	Clear			Noon	N.	2	K.	10		Noon	W.	1	K.	10
	3	S.	2	C.	3		3	N.	2	C. K.	4		3	S.	2	K.	10
	6	S.	1	C. K. S.	6		6	N.	1	C. K. S.	10		6	S.	1	C. K.	10
	9	SW.	1	S.	2		9	N.	1	K.	10		9	S.	1	K.	10
Oct. 28	0	SW.	2	C. S.	2	Oct. 29	0	NW.	2	C. K.	6	Oct. 30	0	NW.	1	C. K.	2
	3	SW.	1	C. K.	3		3	NW.	2	Clear	0		3	NW.	1	C. K.	10
	6	SW.	1	C. S.	1		6	NW.	1	C. K. S.	2		6	NE.	1	C. K. S.	9
	9	NW.	2	Clear	0		9	NW.	3	Clear	0		9	E.	1	C. K.	6
	Noon	NW.	3	C. S.	3		Noon	NW.	3	C. K.	6		Noon	E.	1	N.	10
	3	NW.	1	C. K.	7		3	NW.	3	C. K.	10		3	E.	1	K.	10
	6	NW.	1	C. K.	10		6	NW.	2	C. K. S.	8		6	S. SE.	2	N.	10
	9	NW.	2	N.	10		9	NW.	2	C. K.	4		9	SE.	2	K.	10

REMARKS.

October 19. A slight frost this morning.
20. A rainy day. Amount of rain, 0.906 inch.
24. A fine aurora from sunset until midnight.
25. An aurora visible during the evening.
26. A shower of rain at 6^h a. m. Amount, 0.024 inch.
28. Slight shower at 8^h 30^m p. m.
30. Light showers on the 30th and 31st. Amount, 0.050 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870.						1870.						1870.					
Oct. 31	0	SE.	2	N.	10												
	3	NE.	2	K.	10												
	6	NW.	3	C. K. S.	2												
	9	W.	5	C.	1												
	Noon	W.	5	C.	2												
	3	W.	5	Clear	0												
	6	NW.	2	Clear	0												
	9	NW.	2	Clear	0												
Nov. 1	0	NW.	2	Clear	0	Nov. 2	0	S. SW.	1	C.	1	Nov. 3	0	SW.	2	Clear	0
	3	NW.	1	Clear	0		3	SW.	1	C. K.	3		3	S.	1	Clear	0
	6	NW.	1	C. K.	9		6	W.	1	C. K.	6		6	S.	1	Clear	0
	9	NW.	1	C. K.	7		9	S.	1	C. K.	8		9	NW.	2	C. K.	5
	Noon	W.	1	C. K.	3		Noon	S.	2	C. K.	8		Noon	NW.	4	C. K.	1
	3	S.	2	C. K.	4		3	S.	2	C. K.	9		3	NW.	4	C. K.	1
	6	S.	1	C. S.	2		6	S.	1	C.	2		6	W.	2	Clear	0
	9	SW.	1	C. K.	2		9	S.	2	C.	1		9	W.	2	Clear	0
Nov. 4	0	NW.	2	Clear	0	Nov. 5	0	SW.	1	C. K.	6	Nov. 6	0	NW.	1	Clear	0
	3	NW.	2	Clear	0		3	SW.	1	C. K.	8		3	NW.	2	C. K.	6
	6	W. NW.	1	S.	1		6	S	1	C. K.	8		6	N. NW.	2	S.	1
	9	W.	1	C. K.	3		9	SW.	1	Haze			9	NE.	1	Clear	0
	Noon	W.	2	C. K. S.	4		Noon	W.	1	N.	10		Noon	E. NE.	1	C. K.	3
	3	SW.	1	C. K.	7		3	W. NW.	1	N.	10		3	E.	2	C. K.	3
	6	S.	1	C. S.	3		6	NW.	1	K.	10		6	N. NE.	1	C. K.	3
	9	S.	1	C. K.	4		9	NW.	1	Clear	0		9	N. NE.	1	C. K.	10
Nov. 7	0	NE.	1	C. K.	10	Nov. 8	0	NE.	1	C. S.	4	Nov. 9	0	S.	1	C.	1
	3	NE.	1	C. K.	6		3	NW.	1	C. K. S.	6		3	S.	2	Clear	0
	6	NW.	1	C. K.	4		6	NW.	1	C. S.	6		6	SW.	2	Clear	0
	9	NW.	1	C.	10		9	NW	1	Fog			9	SW.	3	C.	2
	Noon	NW.	1	Clear	0		Noon	S. SE.	2	C. K.	9		Noon	S.	3	C. K.	9
	3	W.	1	C. K.	6		3	S.	2	C. K.	8		3	NW.	2	N.	10
	6	W. NW.	1	C. K. S.	7		6	S.	1	C. S.	2		6	NW.	4	C. K.	2
	9	NE.	1	Clear	0		9	S.	1	C.	2		9	NW.	4	Clear	0
Nov. 10	0	NW.	4	Clear	0	Nov. 11	0	NW.	1	Clear	0	Nov. 12	0	NW.	1	C. K.	10
	3	NW.	3	Clear	0		3	NW.	1	Clear	0		3	NW.	1	C. K.	8
	6	NW.	2	C. K.	2		6	NW.	1	Clear	0		6	W. by N.	1	C. S.	1
	9	NW.	3	Clear	0		9	W. NW.	1	Clear	0		9	W.	1	C. K.	3
	Noon	N. NW.	3	Clear	0		Noon	NW.	1	C. K.	8		Noon	NW.	2	C.	2
	3	N. NW.	3	Clear	0		3	W.	1	C. K.	4		3	NW.	2	Clear	0
	6	NW.	1	Clear	0		6	NW.	1	C. K. S.	2		6	NW.	1	C. K.	2
	9	NW.	1	Clear	0		9	NW.	1	K.	10		9	NW.	1	C. K.	2

REMARKS.

November 3. Lightning in the N. from 0^h a. m. till daylight.
5. Light rain at 11^h 8^m a. m. Amount, 0.062 inch.
9. Rain at 1^h p. m. Amount, 0.423 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Nov. 13	0	NW.	1	Clear	0	1870. Nov. 14	0	W.	1	C. K.	8	1870. Nov. 15	0	NW.	2	C. K.	7
	3	NW.	1	Clear	0		3	N.	1	C. K.	10		3	NW.	3	C. K.	10
	6	W.	1	Clear	0		6	NE.	1	K.	10		6	NW.	2	C. K.	9
	9	W.	1	C. K.	2		9	NE.	1	C. K.	9		9	NW.	2	C. K. S.	7
	Noon	W.	2	C.	1		Noon	S. SE.	1	Haze			Noon	NW.	2	C. K.	9
	3	W.	2	C.	6		3	SW.	1	C. K.	8		3	N. NW.	2	C. K.	10
	6	W.	1	C. K.	7		6	NW.	4	C. K.	7		6	NW.	2	C. K.	5
	9	NW.	1	Clear	6		9	NW.	3	C. K.	2		9	NW.	1	Clear	0
Nov. 16	0	NW.	1	C. K.	2	Nov. 17	0	SW.	1	C. K.	9	Nov. 18	0	NW.	1	C. K.	1
	3	NW.	2	Clear	0		3	W.	1	C. K.	8		3	NW.	1	Haze	
	6	NW.	1	Clear	0		6	W.	1	Clear	0		6	NW.	1	K.	10
	9	W.	2	C. K. S.	2		9	W.	1	Haze			9	S.	1	C. K.	8
	Noon	NW.	1	C. K.	7		Noon	S.	1	C. K.	4		Noon	S.	1	C. K.	9
	3	W.	2	C. K.	3		3	W.	1	Clear	0		3	NW.	3	C. K.	8
	6	NW.	1	S.	1		6	W.	1	S.	1		6	NW.	3	S.	1
	9	NW.	1	Clear	0		9	W.	1	S.	1		9	NW.	3	C. K.	3
Nov. 19	0	W. SW.	1	C. K.	3	Nov. 20	0	NW.	1	Clear	0	Nov. 21	0	SW.	1	C. K.	6
	3	NW.	1	Clear	0		3	N.	1	Clear	0		3	S.	1	C. K.	3
	6	W. NW.	1	C. K.			6	N.	1	Clear	0		6	S.	1	C. K. S.	10
	9	W.	2	C. K. S.	8		9	S.	1	C. K.	2		9	SW.	1	C. K.	9
	Noon	NW.	4	C. K.	6		Noon	S. SW.	1	C. K.	5		Noon	NW.	1	C. K.	8
	3	NW.	4	C. K.	6		3	S.	1	C. K.	8		3	NW.	1	C. K.	10
	6	NW.	1	S.	1		6	S.	1	C. K. S.	10		6	NW.	1	K.	10
	9	NW.	1	Clear	0		9	W.	1	Clear	0		9	NW.	1	C. K.	5
Nov. 22	0	W.	1	K.	10	Nov. 23	0	S.	3	K.	10	Nov. 24	0	NW.	3	C. K. S.	3
	3	NE.	3	K.	10		3	SW.	3	C. S.	6		3	NW.	2	C. S.	2
	6	NE.	2	N.	10		6	SW.	2	S.	2		6	NW.	2	S.	1
	9	N. NE.	3	K.	10		9	SW.	2	C. K.	7		9	W.	2	C. S.	3
	Noon	N. NE.	3	N.	10		Noon	W. NW.	2	C. K.	8		Noon	W.	2	Clear	0
	3	N. NE.	3	N.	10		3	W. NW.	3	C. K.	9		3	W.	2	Clear	0
	6	NE.	3	N.	10		6	W.	2	C. K. S.	9		6	NW.	1	Clear	0
	9	E.	1	N.	10		9	NW.	2	K. S.	2		9	NW.	1	Clear	0
Nov. 25	0	NW.	1	Clear	0	Nov. 26	0	NW.	2	N.	10	Nov. 27	0	NW.	1	C. K.	3
	3	NW.	1	Clear	0		3	NW.	3	K.	10		3	W.	1	C. K. S.	5
	6	W. NW.	1	C K.	1		6	NW.	3	C. S.	4		6	W.	1	C. S.	1
	9	W.	1	C. K.	10		9	NW.	3	Clear	0		9	S.	1	C. S.	2
	Noon	N. NE.	1	C. K.	10		Noon	W.	3	C. K.	2		Noon				
	3	N.	1	C. K.	10		3	W.	1	Clear	0		3	S.	2	C.	2
	6	NE.	2	N.	10		6	W.	1	S.	1		6	W.	1	Clear	0
	9	E.	1	N.	10		9	W.	1	Clear	0		9	W.	1	Clear	0

REMARKS.

November 18. Light showers during the day. Amount of rain, 0.090 inch.
22. Heavy rain during the day. Amount, 0.460 inch.
25. Rain during the evening. Amount, 0.464 inch.
26. Light shower of snow at 0^h 20^m a. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Nov. 28	0	SW.	1	Clear	0	1870. Nov. 29	0	W.	1	Clear	0	1870. Nov. 30	0	W. NW.	2	C. K.	10
	3	W.	1	Clear	0		3	NW.	1	C. K.	6		3	NW.	2	K.	10
	6	NW.	1	Clear	0		6	NW.	1	S.	2		6	N. NW.	2	K.	10
	9	W.	1	Haze			9	W.	1	Haze			9	N. NW.	1	K.	10
	Noon	S. SW.	1	C. S.	1		Noon	S.	1	Haze			Noon	N.	1	C. K.	10
	3	S.	1	C. K.	4		3	W.	1	C. K.	2		3	NE.	1	C. K.	10
	6	S.	1	C. S.	2		6	W. SW.	1	C. K.	2		6	NW.	1	C. K.	8
	9	SW.	1	C.	3		9	SW.	1	C. K.	8		9	NW.	1	C. K.	2
Dec. 1	0	W. NW.	1	Clear	0	Dec. 2	0	SW.	1	C. S.	4	Dec. 3	0	W. SW.	1	Clear	0
	3	NW.	1	Clear	0		3	W.	1	C.	3		3	W.	1	Clear	0
	6	NW.	1	Clear	0		6	NW.	1	C. K.	9		6	W.	2	Clear	0
	9	W.	1	Haze			9	S.	1	Haze			9	W.	1	Clear	0
	Noon	S. SE.	1	Haze			Noon	W.	2	C.	1		Noon	W.	2	Clear	0
	3	SE.	1	C.	2		3	W.	1	C. K.	2		3	NW.	1	C. K. S.	5
	6	SE.	1	S.	1		6	W.	1	Clear	0		6	S.	1	C. K.	9
	9	SE.	1	Clear	0		9	W. NW.	1	Clear	0		9	S.	1	C. K.	7
Dec. 4	0	S.	1	C. K.	7	Dec. 5	0	W.	1	C. K.	6	Dec. 6	0	S. SW.	1	C. K.	9
	3	SW.	1	C. K.	3		3	W.	1	Clear	0		3	W.	2	C. K. S.	7
	6	NW.	1	Clear	0		6	W.	1	C. S.	4		6	NW.	3	C. K. S.	4
	9	SW.	1	C. K. S.	6		9	N.	1	C. K.	8		9	W. NW.	3	C. K.	7
	Noon	SE.	1	C. K.	3		Noon	SE.	1	C. K.	7		Noon	W. NW.	5	C. K.	10
	3	S. SW.	2	C. K.	4		3	S.	1	C. K.	3		3	W. NW.	3	C. K.	6
	6	S. SE.	1	C. S.	6		6	SW.	1	C.	2		6	NW.	3	C. K.	1
	9	S.	1	C. K. S.	8		9	S.	1	Clear	0		9	NW.	2	Clear	0
Dec. 7	0	W. NW.	2	C. K.	2	Dec. 8	0	NW.	2	C. K.	6	Dec. 9	0	NW.	3	Clear	0
	3	W.	1	C. K.	9		3	NW.	4	C. K.	8		3	NW.	3	C. K.	4
	6	NW.	1	C. K.	8		6	W.	2	C. K. S.	9		6	NW.	2	C. K.	9
	9	S. SE.	1	C. K.	9		9	NW.	3	C. K.	4		9	NW.	1	C. S.	2
	Noon	SE.	1	C. K.	10		Noon	NW.	3	C. K.	8		Noon	N.	2	C. S.	3
	3	S.	1	K.	10		3	W.	3	C. K.	7		3	NW.	1	C. S.	3
	6	S.	2	K.	10		6	NW.	3	C. K. S.	6		6	NW.	1	Clear	0
	9	SW.	1	C.	2		9	NW.	3	C.	1		9	NW.	1	Clear	0
Dec. 10	0	NW.	1	Clear	0	Dec. 11	0	W. NW.	1	C. K.	9	Dec. 12	0	NE.	4	N.	10
	3	NW.	1	C. K.	2		3	NW.	1	K.	10		3	NE.	2	N.	10
	6	NW.	1	C. K.	4		6	NW.	1	K.	10		6	NE.	2	N.	10
	9	NW.	2	C.	5		9	NE.	1	K.	10		9	N.	2	N.	10
	Noon	NW.	2	C. K.	6		Noon	NE.	1	Hail	10		Noon	NW.	4	C.	2
	3	W. NW.	1	C. K.	7		3	NE.	1	K.	10		3	W. NW.	3	C.	1
	6	NW.	1	C.	4		6	NE.	2	K.	10		6	NW.	1	Clear	0
	9	W. NW.	1	C.	4		9	NE.	2	K.	10		9	NW.	1	Clear	0

REMARKS.

December 8. A light shower of rain at 0h 35m a. m.
10. A lunar halo at 3h 50m a. m.
11. A lunar halo during the night.
12. Hail and rain during the morning. Amount, 0.586 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Dec. 13	0	NW.	1	C. K.	2	1870. Dec. 14	0	NW.	1	K.	10	1870. Dec. 15	0	NW.	4	C. K.	9
	3	NW.	1	C.	2		3	NW.	1	C. K.	10		3	NW.	2	C. K.	6
	6	NW.	1	C. K.	7		6	NW.	1	C.	4		6	NW.	2	C. K. S.	9
	9	W. NW.	1	C. K.	4		9	W.	2	C. K.	2		9	W.	3	C. K.	9
	Noon	NW.	2	C. K. S.	7		Noon	W. NW.	3	C. K.	7		Noon	W. NW.	4	C. K.	8
	3	NW.	1	C. K. S.	10		3	W. NW.	1	C. K.	9		3	W. NW.	4	C.	2
	6	NW.	1	K.	10		6	NW.	2	C. K. S.	4		6	W. NW.	3	C. K.	8
	9	NW.	1	K.	10		9	NW.	3	K.	10		9	W. NW.	3	C. K.	4
Dec. 16	0	W. NW.	4	C. K.	3	Dec. 17	0	NW.	1	C.	2	Dec. 18	0	SW.	1	K.	10
	3	NW.	3	Clear	0		3	NW.	1	Clear	0		3	SW.	1	C. K.	7
	6	NW.	3	Clear	0		6	NW.	1	Clear	0		6	W. SW.	1	S.	1
	9	NW.	2	C.	2		9	W. NW.	1	Haze			9	SW.	1	C. K.	9
	Noon	NW.	3	C. K.	8		Noon	W. NW.	2	C. K.	8		Noon	NW.	2	C. K	6
	3	NW.	2	C.	3		3	W.	1	C. K.	9		3	N. NW.	2	C. K.	7
	6	Calm	0	Clear	0		6	SW.	1	K.	10		6	NW.	1	C. K.	9
	9	NW.	1	C. K.	3		9	S. SE.	1	K.	10		9	SW.	1	K.	10
Dec. 19	0	NW.	1	C. K.	6	Dec. 20	0	NW.	1	N.	10	Dec. 21	0	NW.	1	C. S.	2
	3	NW.	1	C. K.	10		3	NW.	1	Clear	0		3	NW.	3	K. S.	2
	6	SW.	1	K.	10		6	NW.	1	C. S.	4		6	NW.	3	S.	1
	9	SW.	1	K.	10		9	W.	2	C. K.	2		9	NW.	3	Clear	0
	Noon	S.	1	K.	10		Noon	W. NW.	2	C. K.	6		Noon	NW.	3	S.	1
	3	S.	1	N.	10		3	N. NW.	2	C. K.	7		3	NW.	3	Clear	0
	6	SE.	1	K.	10		6	NW.	2	C. K.	10		6	NW.	3	Clear	0
	9	SE.	1	N.	10		9	NW.	1	K.	10		9	NW.	4	Clear	0
Dec. 22	0	NW.	3	Clear	0	Dec. 23	0	N.	1	C. K.	10	Dec. 24	0	NW.	4	Clear	0
	3	NW.	3	C. K.	4		3	N.	1	K.	10		3	NW.	5	Clear	0
	6	W.	1	C. K.	4		6	N.	1	K.	10		6	NW.	3	C. S.	2
	9	SW.	1	C. K.	9		9	NW.	2	C. K.	2		9	W. NW.	3	C.	2
	Noon	NW.	1	C. K.	5		Noon	NW.	2	C. K.	4		Noon	W.	5	Clear	0
	3	NW.	1	C. S.	1		3	NW.	2	C. K.	4		3	W. NW.	4	Clear	0
	6	NW.	1	C. K.	6		6	NW.	3	C, K. S.	6		6	W. NW.	4	Clear	0
	9	NW.	1	C. K.	8		9	NW.	4	C.	2		9	NW.	3	Clear	0
Dec. 25	0	NW.	4	Clear	0	Dec. 26	0	SE.	2	C. K.	8	Dec. 27	0	NW.	1	Clear	0
	3	NW.	4	Clear	0		3	SE.	2	K.	10		3	NW.	1	Clear	0
	6	NW.	3	Clear	0		6	SW.	2	K.	10		6	NW.	1	C. S.	4
	9	NW.	3	Clear	0		9	SW.	1	C. K.	10		9	SW.	1	C. K.	9
	Noon	NW.	1	Clear	0		Noon	SW.	1	C. K.	9		Noon	S. SW.	1	C. K.	6
	3	SE.	1	C.	2		3	W. SW.	1	C. K.	10		3	S. by W.	1	C. K.	10
	6	S. SW.	1	C. S.	3		6	NW.	1	C.	3		6	S. SW.	1	K.	10
	9	S.	2	C. K.	10		9	NW.	2	Clear	0		9	S.	1	K.	10

REMARKS.

December 17. Snowing lightly at 8^h p. m.
19. Rain and snow at 3^h p. m. Amount, 0.210 inch.
20. Light rain in the morning. Amount, 0.024 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1870. Dec. 28	0	S.	1	K.	10	1870. Dec. 29	0	N. NW.	2	Snow	10	1870. Dec. 30	0	NW.	3	Clear	0
	3	N. NE.	1	Snow	10		3	NW.	3	Snow	10		3	NW.	2	Clear	0
	6	SW.	1	Snow	10		6	NW.	3	K.	10		6	W.	1	Clear	0
	9	SW.	1	Snow	10		9	NW.	2	C. K. S.	8		9	S.	1	C. K.	6
	Noon	S. SW.	1	Snow	10		Noon	NW.	3	C. K. S.	8		Noon	S.	3	C. K.	9
	3	N.	1	N.	10		3	NW.	3	C. K. S.	7		3	S.	3	K.	10
	6	NE.	1	R'n&snow	10		6	NW.	3	Clear	0		6	S.	2	K.	10
	9	N. NE.	1	Snow	10		9	NW.	3	Clear	0		9	S.	2	C. K.	9
Dec. 31	0	S. SW.	1	C. K. S.	7												
	3	SW.	1	C. K. S.	3												
	6	SW.	1	C. K. S.	3												
	9	SW.	2	C. K.	7												
	Noon	W.	1	C. K.	9												
	3	NW.	2	C. K.	10												
	6	W. NW.	3	C.	10												
	9	W. NW.	3	C. K.	10												

REMARKS.

December 28. Snow and rain during the day. Amount of rain and melted snow, 0.230 inch.

METEOROLOGICAL OBSERVATIONS.

MEAN MONTHLY AND ANNUAL RESULTS.

1870.

TABLE I.

Monthly Means of Barometric Pressure.

Date.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	in.	in.	in.	in.	in.	in.	in.	in.
January . .	30.031	30.030	30.034	30.064	30.033	29.990	30.022	30.027
February . .	29.875	29.876	29.882	29.914	29.862	29.826	29.846	29.869
March . . .	29.884	29.876	29.890	29.917	29.891	29.851	29.872	29.899
April. . . .	29.877	29.859	29.874	29.893	29.875	29.848	29.847	29.878
May	29.868	29.858	29.878	29.894	29.879	29.841	29.834	29.867
June	29.885	29.877	29.891	29.911	29.890	29.853	29.842	29.870
July	29.886	29.883	29.907	29.921	29.914	29.875	29.867	29.898
August. . .	29.929	29.928	29.937	29.962	29.941	29.901	29.894	29.926
September .	30.029	30.030	30.044	30.065	30.014	29.997	29.994	30.023
October . .	30.004	29.994	30.010	30.040	30.014	29.983	30.001	30.017
November .	29.964	29.967	29.980	30.009	29.973	29.939	29.962	29.975
December .	29.960	29.960	29.962	29.994	29.963	29.930	29.956	29.963
Annual means.	29.933	29.928	29.941	29.965	29.937	29.903	29.911	29.934

TABLE II.

Monthly Means of Dry Thermometer.

Date.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
January . .	36.71	35.55	34.45	35.89	42.67	44.79	40.37	37.85
February . .	31.17	30.19	29.87	32.13	38.12	39.64	35.89	33.08
March . . .	35.33	33.68	32.01	36.47	42.29	45.41	42.67	37.83
April. . . .	47.85	46.22	45.16	52.14	57.34	59.46	56.81	51.43
May	58.02	55.63	55.77	63.46	69.57	70.47	66.99	61.02
June	67.95	66.48	66.40	73.10	79.63	81.79	77.64	71.36
July	72.90	71.05	70.91	78.64	84.32	85.45	81.08	75.08
August. . .	70.91	68.65	68.05	74.35	82.88	84.96	79.13	73.67
September .	62.68	60.38	59.74	67.11	77.88	79.85	72.21	65.85
October . .	53.65	51.83	50.69	56.10	65.51	66.25	58.80	54.80
November .	40.06	38.46	37.14	41.92	52.63	53.31	46.50	42.03
December .	31.41	30.20	29.06	31.46	38.96	39.43	35.28	33.10
Annual means.	50.72	49.03	48.27	53.56	60.98	62.57	57.78	53.09

TABLE III.

Monthly Means of Wet Thermometer.

Date.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
January . .	35.7	34.9	34.3	35.1	39.9	41.4	38.7	36.4
February . .	30.6	29.8	29.5	31.3	35.5	36.3	34.2	32.2
March . . .	33.9	32.6	31.5	34.5	38.2	39.9	38.1	35.4
April. . . .	46.2	45.2	44.3	48.7	51.8	53.2	51.3	48.9
May	56.9	55.0	55.2	60.2	63.8	64.2	62.4	58.9
June	67.2	66.1	65.9	70.4	73.4	74.4	76.0	69.5
July	71.7	70.2	70.1	73.6	76.8	77.7	73.0	72.9
August. . .	69.7	68.0	67.3	71.0	73.9	75.8	73.7	71.2
September .	61.5	59.9	59.2	64.3	68.9	69.4	66.2	63.5
October . .	52.3	51.4	50.4	54.2	58.6	58.8	55.5	53.2
November .	38.7	37.6	36.7	40.3	46.7	47.5	43.2	40.4
December .	31.2	29.4	28.3	30.2	35.5	35.9	33.7	32.6
Annual means.	49.6	48.3	47.7	51.2	55.2	56.2	53.8	51.2

TABLE IV.

Monthly Means of Sun Thermometer.

Date.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.	°	°	°	°	°	°	°	°
January . .	35.4	34.4	33.5	42.5	66.2	59.5	39.6	36.5
February . .	29.8	28.7	28.3	50.2	69.1	63.0	34.2	31.3
March . . .	33.5	32.4	30.7	63.7	78.4	78.6	45.1	37.0
April. . . .	48.1	46.0	45.2	82.9	95.8	97.2	87.7	56.9
May	57.0	54.4	57.4	98.2	117.8	119.2	109.6	70.1
June	68.1	65.2	68.2	113.8	134.0	130.2	126.4	88.9
July	72.4	69.6	72.3	119.5	138.3	142.0	129.3	91.7
August. . .	70.3	67.4	68.2	111.7	134.3	135.8	125.3	82.5
September .	61.6	58.6	58.7	100.4	123.5	126.9	116.1	69.3
October . .	51.9	50.5	49.6	84.5	109.7	110.1	86.1	55.0
November .	39.6	36.4	34.0	58.8	98.0	93.2	64.4	43.8
December .	30.5	28.9	26.7	41.2	79.4	73.1	46.9	32.8
Annual means.	49.0	47.7	47.7	80.6	103.7	102.4	84.2	58.0

TABLE V.

Amount of Rain and Snow in 1870.

Month.	Rain and Melted Snow.	Depth of Snow.
	in.	
January	2.872	0.25
February	2.342	1.50
March	4.247	3.60
April	3.690	
May	4.569	
June	4.245	
July	3.860	
August.	2.046	
September	2.208	
October	4.194	
November	1.499	
December	1.140	
Total.	36.912	5.35

TABLE VI.

Showing the number of times that the wind blew from the NORTH *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9.
1870.								
January . . .	3	3	4	7	1	0	1	1
February . . .	0	1	3	2	5	3	3	1
March . . .	1	1	3	2	2	2	4	1
April	3	2	5	3	6	4	5	2
May	2	4	3	0	1	3	4	1
June	0	1	4	2	3	2	1	4
July	2	2	3	2	0	1	0	2
August . . .	3	2	1	2	0	3	4	5
September . .	6	4	4	7	2	3	3	4
October . . .	3	1	1	2	3	2	6	4
November . .	0	2	2	2	4	4	1	1
December . .	2	2	1	2	1	3	0	1
Total . . .	25	25	34	33	28	30	32	27

Showing the number of times that the wind blew from the NORTHEAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.								
January . . .	2	2	3	2	4	4	5	4
February . . .	4	4	3	4	1	3	2	3
March . . .	2	2	3	3	0	0	3	2
April	3	4	8	8	4	2	3	7
May	8	6	4	6	6	4	5	7
June	3	2	4	4	0	2	3	1
July	2	1	2	2	1	2	4	3
August . . .	0	0	0	2	0	2	0	0
September . .	2	1	2	5	4	2	4	2
October . . .	1	3	2	3	2	2	2	1
November . .	2	2	2	2	0	1	2	1
December . .	1	1	1	1	1	1	2	1
Total . . .	30	28	34	42	23	25	35	32

Showing the number of times that the wind blew from the EAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.								
January . . .	3	3	1	0	1	2	3	3
February . . .	2	2	1	0	1	0	1	1
March . . .	4	3	1	5	5	5	4	4
April	3	4	1	2	2	3	1	2
May	1	1	1	4	3	0	3	2
June	2	2	3	2	4	5	5	4
July	0	0	0	1	0	0	1	0
August . . .	0	0	0	0	1	0	3	1
September . .	2	3	3	1	3	6	9	5
October . . .	1	1	1	3	1	2	0	0
November . .	0	0	0	0	1	1	0	2
December . .	0	0	0	0	0	0	0	0
Total . . .	18	19	12	18	22	24	30	24

Showing the number of times that the wind blew from the SOUTHEAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.								
January . . .	3	1	2	2	0	1	6	4
February . . .	0	0	2	1	1	1	4	5
March . . .	1	1	0	0	2	3	1	2
April	2	1	0	0	1	1	3	2
May	1	1	0	4	1	4	2	1
June	3	2	1	2	1	2	3	3
July	2	1	0	2	1	5	1	2
August . . .	4	1	0	2	0	3	5	3
September . .	0	1	0	1	2	6	5	3
October . . .	1	0	0	0	2	3	2	2
November . .	0	0	0	0	0	0	0	0
December . .	1	1	0	0	3	2	2	2
Total . . .	18	10	5	14	14	31	34	29

Showing the number of times that the wind blew from the SOUTH *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.								
January . . .	4	6	4	6	9	10	4	6
February . . .	3	4	4	5	5	6	4	0
March . . .	0	0	1	2	4	4	1	0
April	3	2	1	2	7	9	7	4
May	2	1	1	3	8	5	5	4
June	3	3	1	3	11	10	5	6
July	6	5	3	6	11	8	10	6
August . . .	6	5	6	9	13	13	8	7
September . .	3	0	0	4	8	6	1	2
October . . .	3	2	2	2	5	9	9	4
November . .	3	3	3	4	9	6	6	3
December . .	4	0	0	3	5	6	6	7
Total . . .	40	31	26	49	95	92	66	49

Showing the number of times that the wind blew from the SOUTHWEST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1870.								
January . . .	7	5	6	3	6	5	7	6
February . . .	4	0	1	1	5	3	3	3
March . . .	1	2	0	2	2	1	3	1
April	4	2	3	3	2	1	1	3
May	4	5	5	4	2	3	2	3
June	4	2	4	5	2	1	5	4
July	11	10	9	2	3	4	5	11
August . . .	7	8	6	1	2	3	4	6
September . .	5	5	5	5	4	2	1	3
October . . .	5	2	2	6	2	0	2	7
November . .	5	3	2	4	0	2	0	3
December . .	2	3	4	8	1	0	2	2
Total . . .	59	47	47	44	31	25	35	52

TABLE VI—Continued.

Showing the number of times that the wind blew from the WEST *at the hours of observation.*

Month.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.								
January . . .	3	3	2	3	2	4	1	1
February . . .	3	4	5	6	3	5	2	5
March . . .	5	3	4	3	3	4	4	4
April	4	6	2	4	3	6	2	3
May	8	10	8	3	6	7	9	11
June	7	12	13	9	6	5	8	3
July	3	5	10	9	14	9	5	4
August . . .	5	7	9	6	9	3	3	5
September . .	6	7	9	2	5	5	4	5
October . . .	6	8	11	8	10	9	4	4
November . .	5	3	9	11	7	10	8	5
December . .	6	5	6	9	9	10	4	4
Total . . .	61	73	88	73	77	77	54	54

Showing the number of times that the wind blew from the NORTHWEST *at the hours of observation.*

Month.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.								
January . . .	7	8	9	8	7	5	4	6
February . . .	12	13	9	8	8	7	9	10
March . . .	14	19	19	15	14	13	13	17
April	8	9	10	9	5	4	8	7
May	5	3	9	8	5	3	1	2
June	7	5	1	4	3	3	1	4
July	6	7	4	7	1	2	5	3
August . . .	6	7	9	7	5	4	4	4
September . .	6	9	7	5	2	1	2	6
October . . .	11	14	12	7	6	4	6	8
November . .	15	17	12	7	8	6	13	15
December . .	15	19	19	8	11	9	14	14
Total . . .	112	130	120	93	75	61	80	96

Showing the number of times that it was CALM *at the hours of observation.*

Month,	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.								
January . . .	0	0	0	0	0	0	0	0
February . . .	0	0	0	0	0	0	0	0
March . . .	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	1	0
June	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August . . .	0	0	0	1	1	0	0	0
September . .	0	0	0	0	0	0	0	0
October . . .	0	0	0	0	0	0	0	0
November . .	0	0	0	0	0	0	0	0
December . .	0	0	0	0	0	0	1	0
Total . . .	0	0	0	1	1	0	2	0

TABLE VII.

Showing the number of times that it was CLEAR *at the hours of observation.*

Month.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6^{h}.	9^{h}.
1870.								
January . . .	8	7	3	1	1	2	5	5
February . . .	7	8	6	3	2	1	1	4
March . . .	9	9	8	4	2	2	3	10
April	3	2	5	2	2	2	1	4
May	8	7	4	3	2	2	1	5
June	8	6	6	4	2	1	0	2
July	4	8	3	1	0	0	2	3
August . . .	6	7	1	5	0	1	1	4
September . .	13	13	5	5	2	4	5	11
October . . .	10	11	3	7	6	5	5	9
November . .	11	12	8	5	2	5	4	13
December . .	9	10	7	3	3	2	7	10
Total . . .	96	100	59	43	24	27	35	80

Showing the number of times that CIRRUS *clouds prevailed at the hours of observation.*

Month.	0^{h}.	3^{h}.	6^{h}.	9^{h}.	Noon.	3^{h}.	6.	9^{h}.
1870.								
January . . .	0	0	2	1	0	0	1	1
February . . .	2	1	0	2	2	5	0	0
March . . .	1	1	0	3	2	3	1	0
April	1	3	0	1	0	0	1	2
May	0	1	2	1	2	1	0	0
June	2	2	3	2	2	1	3	3
July	4	3	4	3	1	2	3	2
August . . .	2	1	6	3	0	2	2	5
September . .	1	2	0	3	2	2	0	1
October . . .	0	0	0	3	4	3	1	0
November . .	2	0	1	1	2	2	2	3
December . .	1	2	1	3	1	5	2	5
Total . . .	16	16	19	26	18	26	16	22

TABLE VII—Continued.

Showing the number of times that CIRRO-CUMULUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	4	9	3	17	24	23	10	10
February	8	12	12	8	14	10	7	6
March	11	8	12	16	23	19	16	9
April	13	12	9	13	14	13	16	9
May	11	13	13	16	20	17	21	12
June	10	13	9	15	23	19	19	11
July	14	14	20	22	27	27	21	14
August	15	19	17	16	24	21	25	10
September	10	8	12	13	21	19	14	9
October	10	11	10	11	12	17	16	7
November	13	11	9	16	20	19	10	9
December	13	14	9	16	19	16	10	7
Total	132	144	135	179	241	220	185	113

Showing the number of times that CIRRO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	4	3	5	1	0	0	5	3
February	0	0	1	2	0	0	6	1
March	2	2	2	0	1	0	4	0
April	1	1	2	0	1	1	2	1
May	1	1	0	0	0	0	0	0
June	3	1	1	0	0	0	2	4
July	6	1	1	0	2	0	0	3
August	1	0	1	0	1	1	0	3
September	2	1	1	2	2	2	7	4
October	3	0	5	0	1	1	4	5
November	1	3	4	2	1	0	6	0
December	2	0	5	1	1	3	3	0
Total	26	13	28	8	10	8	39	24

Showing the number of times that CUMULUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	11	8	8	3	3	4	5	5
February	6	4	4	6	6	3	8	11
March	4	7	4	4	1	1	1	4
April	3	2	3	3	4	3	1	6
May	4	3	9	4	3	2	3	4
June	4	2	2	1	0	0	0	1
July	2	4	3	1	0	0	1	4
August	3	2	2	1	1	2	0	3
September	1	3	1	3	1	1	1	3
October	2	2	2	3	3	2	1	5
November	2	3	3	1	0	0	2	1
December	3	3	5	2	1	4	7	7
Total	45	43	46	32	23	22	30	54

Showing the number of times that CUMULO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August	0	0	0	0	1	0	0	0
September	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	1
December	0	1	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	1

Showing the number of times that STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	1	0	3	0	1	0	1	3
February	0	0	1	0	0	0	1	1
March	0	1	1	0	0	1	2	2
April	1	0	2	0	0	0	0	1
May	2	0	0	1	0	0	0	1
June	0	1	0	0	0	0	0	4
July	0	1	0	1	0	0	0	2
August	1	0	0	0	0	0	0	4
September	0	1	0	0	0	0	0	1
October	1	0	0	0	0	0	2	1
November	0	0	5	0	0	0	5	1
December	0	0	2	0	1	0	1	0
Total	6	4	14	2	2	1	12	21

Showing the number of times that NIMBUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1870.								
January	3	3	5	2	1	0	2	2
February	1	2	3	3	1	3	2	2
March	3	1	1	1	1	0	2	3
April	5	5	6	5	4	4	3	4
May	5	3	2	2	3	7	4	7
June	4	4	3	4	2	4	3	4
July	3	1	0	2	1	2	3	3
August	1	0	1	2	0	0	0	0
September	3	2	5	4	2	2	2	1
October	2	4	4	1	4	2	2	2
November	1	0	1	0	2	3	2	2
December	2	1	1	1	0	2	0	1
Total	33	26	32	27	21	29	25	31

METEORS.

1870.

At the time of the usual August and November meteoric showers the weather was observations of miscellaneous meteors seen and noted during the year, although no E. indicates Professor Eastman; H_1, Professor Harkness; H_2, Mr. Horigan, and C.,

No.	Date.	Washington Mean Time.	Observer.	Magnitude.	Color.	Duration.	Appearance and Duration of Train.
	1870.	h. m.				s.	
1	Mar. 24	4 20, a. m.	E.	3	White.	0.4	No train.
2	25	9 45, p. m.	E.	4	do.	0.3	do.
3	April 19	8 35, p. m.	E.	3	do.	2.4	Short train.
4	19	8 37, p. m.	E.	4	do.	0.5	No train.
5	19	9 33, p. m.	C.	3	do.	0.5	do.
6	19	10 12, p. m.	C.	4	do.	0.5	do.
7	20	3 6, a. m.	C.	5	do.	0.5	do.
8	25	11 11, p. m.	C.	4	do.	0.5	do.
9	28	2 3, a. m.	H_2	4	do.	0.4	do.
10	June 19	10 12, p. m.	H_2.	5	Reddish.	0.3	do.
11	21	10 0, p. m.	H_2.	2	do.	2.0	Train lasted 3^m.
12	21	10 0, p. m.	H_2.	6	White.	0.4	No train.
13	24	10 35, p. m.	E.	1	Orange.	1.5	do.
14	25	9 23, p. m.	E.	2	White.	1.5	do.
15	26	0 36, a. m.	E.	Size of Jupiter.	Olive green.	2.5	Train lasted $0^s.8$.
16	26	0 36, a. m.	E.	6	White.	0.3	No train.
17	July 26	9 50, p. m.	H_1.	Size of Jupiter.	do.	0.2	do.
18	30	8 50, p. m.	E.	3	do.	0.2	do.
19	30	9 14, p. m.	E.	Size of Saturn.	do.	3.0	do.
20	30	9 20, p. m.	E.	3	do.	1.5	do.
21	30	9 40, p. m.	E.	4	do.	0.2	do.
22	30	9 50, p. m.	E.	2	do.	0.5	do.
23	Aug. 15	9 54, p. m.	H_2.	4	Orange.	0.5	Train lasted $0^s.6$.
24	Sept. 4	8 5, p. m.	H_2.	4	White.	0.4	No train.
25	24	8 15, p. m.	H_2.	5	do.	0.3	do.
26	24	8 30, p. m.	H_2.	3	do.	0.4	Train lasted $0^s.3$.
27	Oct. 15	8 10, p. m.	E.	3	do.	0.3	No train.
28	Nov. 3	11 29, p. m.	H_2.	3	do.	0.3	Train lasted $0^s.4$.
29	14	11 50, p. m.	H_2.	3	do.	0.5	Train lasted $0^s.3$.
30	15	7 18, p. m.	H_2.	1	do.	2.0	Train lasted $2^s.0$.
31	15	7 25, p. m.	H_2.	3	do.	0.5	No train.
32	Dec. 13	9 5, p. m.	C.	4	do.	2.0	do.
33	13	9 30, p. m.	C.	3	do.	0.2	Train lasted $0^s.3$.
34	14	0 15, a. m.	C.	3	do.	. .	. .
35	14	0 22, a. m.	C.	.	do.	. .	. .
36	14	0 55, a. m.	C.	.	do.	. .	. .
37	14	1 21, a. m.	C.	.	do.	. .	. .
38	14	1 22, a. m.	C.	.	do.	. .	. .
39	14	1 30, a. m.	C.	.	do.	. .	. .
40	14	1 32, a. m.	C.	.	do.	. .	. .
41	14	1 36, a. m.	C.	1	Orange.	3.0	Short train.
42	14	2 1, a. m.	C.	.	White.	. .	. .
43	14	2 2, a. m.	C.	.	do.	. .	. .
44	14	2 6, a. m.	C.	.	do.	. .	. .
45	14	2 57, a. m.	C.	.	do.	. .	. .
46	14	3 12, a. m.	C.	.	do.	. .	. .
47	14	4 25, a. m.	C.	.	do.	. .	. .

so cloudy that no observations could be made. The following table contains the systematic observations were attempted. In the the column headed "observer," Mr. Cahill.

No.	Length of Path. °	Course of Meteor among the Stars.
1	8	From δ Aquilæ north 20° east.
2	5	Across the sickle from south to north.
3	10	From a point on the meridian, 10° south, south 5° west.
4	4	Southwest across the southern portion of Canis Majoris.
5		Northerly from the east near the horizon.
6		Do. do. do.
7		Northerly from the east near the horizon. At $2^h\ 12^m$ a. m. three flashes of light were seen between the broken clouds in the north, lasting about three minutes.
8	10	Westerly across the Dipper.
9	10	Westerly about 10° south of the zenith.
10	8	Northwesterly from α Cygni. Sky hazy.
11	12	North from Arcturus.
12	35	From ζ Ursæ Majoris to a point 5° south of Arcturus.
13	10	From 40° altitude south through the Scorpion.
14	8	Easterly from a point midway between Spica and Antares at an angle of 70° to the horizon.
15	30	From β Cassiopeæ westerly.
16	4	From east to west exactly across Polaris.
17		From $+ 75°$ and 240° to $+ 75°$ and 195°.
18	6	Westerly from $+ 20°$ and 232°.
19	15	Westerly from $- 25°$ and 255°.
20	15	From 4° south of Saturn, westerly, parallel to the horizon.
21	6	South from α Aquilæ.
22	8	West from α Aquarii. Between 9^h and 10^h saw ten other small meteors, all moving westward.
23	10	Southwest from α Pegasi.
24	8	South from 10° north of Arcturus.
25	8	Across the Dipper from the west.
26	10	From Polaris toward the Dipper.
27	4	From $+ 60°$ and 292° toward Polaris.
28	5	Southwest from α Andromedæ.
29	8	From Orion toward Sirius.
30	25	Westerly from α Pegasi.
31	8	South from α Cygni.
32	4	
33	22	
34		
35		
36		
37		
38		
39		
40		
41	8	From 8° north of Jupiter, westerly.
42		
43		
44		
45		
46		
47		

LIST

OF

PUBLICATIONS PRESENTED TO THE LIBRARY

DURING

THE YEAR 1870.

LIST OF PUBLICATIONS PRESENTED TO THE LIBRARY IN 1870.

Date.	Publications.	From whom received.
Jan. 12	Tabulæ quantitatum Besselianarum pro annis 1750 ad 1840 computatæ. O. Struve. Petropoli, 1869.	O. Struve, Director of the Imperial Observatory, Pulkova.
	Ascensions droites moyennes des étoiles principales pour l'époque 1845.0. Saint-Pétersbourg, 1869.	The same.
	Observations de Poulkova, publiées par O. Struve, Directeur de l'Observatoire Central Nicolas. Tome I–II. 1869.	The same.
	Jahresbericht am 5. Juni 1869 dem Comité der Nicolai-Hauptsternwarte abgestattet vom Director der Sternwarte. St. Petersburg, 1869.	The same.
	Mémoires de l'académie impériale des sciences de Saint-Pétersbourg. VIII. série, tome X, No. 1; tome XII, Nos. 4, 5; tome XIII, No. 8.	The same.
	Jahrbücher der kaiserlich-königlichen Central-Anstalt für Meteorologie und Erdmagnetismus. C. Jelinek und C. Fritsch. Neue Folge. Band IV. Jahrgang 1867.	Dr. C. Jelinek, Vienna.
	Untersuchungen über die Winde der nördlichen Hemisphäre und ihre klimatologische Bedeutung. Jahn.	Dr. J. Jahn, Vienna.
	Sitzungsberichte der kaiserlichen Akademie der Wissenschaften, Wien. Mathematisch-naturwissenschaftliche Classe. LVIII. Band, I–V. Heft, LIX. Band, I–II. Heft, erste Abtheilung; LVIII. Band, II–V. Heft, LIX. Band, I–III. Heft, zweite Abtheilung.	Prof. A. Schrötter, General Secretary Imperial Academy, Vienna.
	Zur Theorie der Abbildung. Schwarz	Prof. H. A. Schwarz, Director, Zurich.
	Programm der eidgenossischen polytechnischen Schule zu Zürich. 1869–'70.	The same.
	Ueber eine Methode die Störungen eines Cometen vermittelst rasch convirgirenden Ausdrücke darzustellen. Gyldén.	Dr. H. Gyldén, St. Petersburg.
	Studien und Messungen an einem Zöllner'schen Astro-Photometer. Von Dr. P. G. Rosen.	Dr. P. G. Rosen, St. Petersburg.
	Fünfunddreissigster Jahresbericht des Mannheimer Vereins für Naturkunde.	Dr. E. Weber, Vice-President of the Society of Natural Sciences, Mannheim.
Feb. 16	Transactions of the Chicago Academy of Sciences. Vol. I, Part II	Secretary of Chicago Academy.
	Micrometric examination of stellar cluster in Perseus. Pihl	Prof. O. A. L. Pihl, Christiania.
	Norsk meteorologisk Åarbog fir 1868. 2d Åargang. Christiania, 1869.	Director of the Meteorological Institute of Norway, Christiania.
	Meteorologiske Meddelelser. Mohn	The same.
	Curvas que representan la marcha de los instrumentos meteorometricos durante el mes de Julio 1869. Osservatorio meteorologico del ateneo municipal de Manila.	The Director of the Meteorological Observatory of the City Athenæum of Manila.
	Détermination de la vitesse avec laquelle est entraînée un rayon lumineux traversant un milieu en mouvement.	M. Höek, Director of the Observatory, Utrecht.
	Détermination de la vitesse avec laquelle est entraînée une onde lumineuse traversant un milieu en mouvement.	The same.
	Emploi de l'armature externe du câble sous-marin pendant que l'armature interne, ou conducteur isolé, transmet la dépêche télégraphique. Zantedeschi.	Prof. C. F. Zantedeschi, Padua.
	Rapport fait au Bureau des Longitudes par la commission chargé d'examiner les questions relatives à l'observation du passage de Vénus sur le soleil du 8 décembre 1874.	M. Laugier, Paris.
	Occultations of stars and solar eclipses. F. C. Penrose, F. R. A. S.	F. C. Penrose, Esq., London.
	Ueber das Zurückbleiben der Alten in den Naturwissenschaften. C. Littrow.	Dr. Carl Littrow, Vienna.
	Transactions of the Cambridge Philosophical Society. Vol. XI, Parts I–II. Proceedings: Parts III–VI.	Prof. G. D. Liveing, M. A., Secretary, Cambridge, England.
	Report of the total eclipse of the sun of 1868	Warren De la Rue, Esq.
Mar. 16	Report of the Astronomer to the Marine Committee, Mersey Works, and Harbor Board, September, 1869. John Hartnup, Liverpool.	J. Hartnup, Esq., Astronomer, Liverpool.
	Alcuni resultati preliminari tratti dalle osservazioni di stelle cadenti pubblicate nelle effemeridi degli anni 1868–'69–'70. Schiaparelli.	G. V. Schiaparelli, Director of the Observatory, Brera.
	Mittlere Temperatur zu Krakau nach 40-jährigen Beobachtungen, 1826–'65. Karlinski.	Dr. F. Karlinski, Director of the Observatory, Cracow.
	Das Gesetz der Winde abgeleitet aus dem Auftreten derselben über Nordwest-Europa. Prestel.	Dr. M. F. N. Prestel, Emden.
	Vierundfünfzigster Jahresbericht der naturforschenden Gesellschaft im Emden.	The same.
18	Jahresbericht der norddeutschen Seewarte für das Jahr 1868–'69	W. von Freeden, Director, Hamburg.
	Mittheilungen aus der norddeutschen Seewarte. Nos. I–II	The same.
30	Meteors of November, 1869. H. A. Newton	Prof. H. A. Newton, New Haven.

Date.	Publications.	From whom received.
Mar. 30	Température de la mer entre l'Irlande, l'Écosse, et la Norvége. H. Mohn.	Prof. H. Mohn, Christiania.
	Preis-Courant der optischen und astronomischen Werkstätte. Steinheil.	C. A. Steinheil, München.
April 1	Astronomische Mittheilungen von der königlichen Sternwarte zu Göttingen. Erster Theil. Mittlere Oerter der in den Zonen —0° und — 1° der Bonner Durchmusterung enthaltenen Sterne.	Secretary of the Royal Society of Sciences, Göttingen.
8	Taboas auxiliares para o calculo das ephemerides astronomicos do observatorio da universidade de Coimbra. Sarmento.	Senhor Rodrigo R. de Sousa Pinto, Director of the Observatory of the University of Coimbra.
	Methodo facil para calcular as ascensões rectas e declinacões dos astros. Sarmento.	The same.
	Taboas da interpolação para $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ do intervallo e do calculo da passagen da lua pelo meridiano. Sarmento.	The same.
	Nota sobre a parallaxe equatorial do sol; e additamento	The same.
	Additamento ao calculodos eclipses	The same.
	Posição geografica do observatorio astronomico da universidade de Coimbra.	The same.
	American Ephemeris and Nautical Almanac for 1872	Prof. J. H. C. Coffin, U. S. N., Supt.
13	Delle oscillazioni calorifiche orarie, diurni, mensili, ed annuale del 1867. F. Zantedeschi.	Prof. F. Zantedeschi, Padua.
15	Discussion of the meteorological and magnetical observations made at the Flag-Staff Observatory, Melbourne, 1858–'63. Neumayer.	G. Neumayer, Ph. D., Director of the Flag-Staff Observatory, Melbourne.
	Report of the total eclipse of the sun of August 17, 1868, as observed at Guntoor, India. Major J. F. Tennant, R. E.	Warren De la Rue, Esq., F. R. A. S., London.
19	Résumé météorologique de l'année 1868, pour Genève et le Grand Saint-Bernard. E. Plantamour.	Prof. E. Plantamour, Geneva.
	Sitzungsberichte der Gesellschaft zur Beförderung der gesammten Naturwissenschaften in Marburg. 1866–'68.	Dr. O. Hensingen, Secretary, Marburg.
	Sitzungsberichte der königlich-bayerischen Akademie der Wissenschaften zu München. 1869. Band I, Heft 1–3; Band II, Heft 1–3.	C. Weidman, Secretary Royal Bavarian Academy, Munich.
	Verzeichniss von 6323 telescopischen Sternen zwischen + 3° und 9° Declinationen. Lamont.	Dr. F. Flügel, Leipsic.
	Transactions of the Royal Society of Edinburgh. Vol. XXV, Part II.	Secretary of the Royal Society of Edinburgh.
	Proceedings of the Royal Society of Edinburgh. 1868–'69	The same.
	Oversigt over det kongelige danske Videnskabernes Selskabs Forhandlinger og det Medlemmers Arbeider i Aaret 1868–'70.	Prof. J. Japetus Smith Steenstrup, Secretary of the Danish Academy of Copenhagen.
22	Tables of Harmonia, computed for the Nautical Almanac. Schubert.	Prof. J. H. C. Coffin, U. S. N., Supt.
	La meteorografia del globo studiata a diverse altitudini da terra. Zantedeschi.	Prof. C. F. Zantedeschi, Padua.
	Della camera lucida di Wollaston; applicata al cannocchiale per ottenere dei panorami dimenti in grande scala e della maggiore esatteza dei sig. F. Carlini, astronomo a Milano, 1818.	The same.
May 2	Observaciones magneticas y meteorólogicas hechas por los alumnos del colegio de Belen. Habana, 1869.	The Director of the Meteorological and Magnetic Observatory, Havana.
21	Norme per le osservazioni delle meteore luminose. Denza	P. F. Denza, Director of the Observatory, Moncalieri, Italy.
	Delle nebbie, nebbioni, pioggie con sabbie caligni, osservata nell' atmosfera d'Italia nel 1869, precipuamente.	Prof. C. F. Zantedeschi, Padua.
	Sugli spettri prismatici de corpi celesti. Memoria III, del P. Angelo Secchi.	P. A. Secchi, Director of the Observatory, Rome.
June 14	Planet- och Komet-Observationer Anställda Ai 1869, pä. Lunds Observatorium. Möller.	Prof. A. Möller, Lund.
27	Pioggia e neve frammiste a varie sostanze, cadutte nella notte dal 13 al 14 di febbrajo 1870 nella Liguria nel Piemonte ed in altre contrade d'Italia, coll' analisi qualitativa e quantitativa. Zantedeschi.	Prof. C. F. Zantedeschi, Padua.
	Second Radcliffe catalogue, containing 2386 stars, deduced from observations, 1854–1861. Oxford, 1870.	Rev. R. Main, Radcliffe Observatory, Oxford.
28	Bericht über die Verhandlungen der königlich-sächsischen Gesellschaft der Wissenschaften zu Leipzig. Mathematisch-physische Classe. III–IV, 1867; I–III, 1868; I. 1869.	E. H. Weber, Secretary Royal Saxon Academy of Sciences, Leipsic.
	Annalen der kaiserlichen Sternwarte bei München. Band XVIII	Dr. J. C. Lamont, Director of the Observatory, Munich.
	Verzeichniss von 4793 telescopischen Sternen zwischen — 3° und — 9° Declination welche in den Münchener Zonen-Beobachtungen vorkommen reducirt auf den Anfang des Jahres 1850, nebst Vergleichung mit den Beobachtungen von Lalande, Bessel, Rumker und Schjellerup. IX. Supplement-Band zu den Annalen der Münchener Sternwarte.	The same.
	Verzeichniss an der kaiserlichen Sternwarte bei München in den ersten 50 Jahren ihres Bestehens, d. h. in den Jahren 1820–'29, erschienenen Publicationen.	The same.
	Vorlesungen über Geschichte der Astronomie im Alterthum. Von J. F. Encke. Mitgetheilt aus dem schriftlichen Nachlasse. C. Bruhns.	Dr. C. Bruhns, Leipsic.

Date.	Publications.	From whom received.
June 28	Uebersicht der Resultate aus den meteorologischen Beobachtungen angestellt auf den königlich-sächsischen Stationen. Bruhns.	Dr. Bruhns, Leipsic.
	Meteorologische Beobachtungen, Leipziger Universitäts-Sternwarte, im Jahre 1868. Bruhns.	The same.
	Repertorium für Meteorologie. Herausgegeben von der kaiserlichen Akademie der Wissenschaften. Band I, Heft 1.	Dr. H. Wild, Director Central Physical Observatory, St. Petersburg.
	Vorschläge betreffend die Reorganization des meteorologischen Beobachtungs-Systems in Russland.	The same.
	Smithsonian Miscellaneous Collections. Vols. 8 and 9. Contributions. Vol. 17.	Prof. Joseph Henry, LL. D., Secretary of the Smithsonian Institution.
	Fortgesetzte geodätische Untersuchungen. Supplementen zur Abhandlung von der Methode der kleinsten Quadrate im Allgemeinen. 1868.	P. A. Hansen, Seeberg, Gotha.
July 18	Philosophical Transactions of the Royal Society of London for the year 1869. Vol. 159, Parts 1 and 2.	The Secretary of the Royal Society, London.
	Proceedings of the Royal Society. Vol. XVII, Nos. 110–113, inclusive. Vol. XVIII, Nos. 114–118, inclusive.	The same.
	List of Fellows of the Royal Society in 1870	G. B. Airy, Astronomer-Royal.
	Report of the Astronomer-Royal to the Board of Visitors. June, 1870.	The same.
	Denkschriften der kaiserlichen Akademie der Wissenschaften. Band XXIX. Wien, 1869.	Secretary of the Imperial Academy of Sciences, Vienna.
	Sitzungsberichte der kaiserlichen Akademie der Wissenschaften. LIX. Band, erste Abtheilung, IV–V. Heft, zweite Abtheilung, III–V. Heft; LX. Band, erste Abtheilung, I–II. Heft, zweite Abtheilung, I–II. Heft.	The same.
	On the distribution of temperature in the lower region of the atmosphere. Prof. Henry Hennessey.	Prof. Henry Hennessey, Dublin, Ireland.
	Nivellement de précision de la Suisse executé par la Commission Géodésique Fédérale sous la direction de A. Hirsch et E. Plantamour.	Prof. Hirsch and Prof. Plantamour, Geneva.
	Nuevos metodos astronomicos para determinar la hora, el azimut, la latitud y la longitud geograficas con entera independencia de medidas angulares absolutas. F. D. Covarrubias.	Prof. F. D. Covarrubias, Mexico.
23	Catalogue of maps of the British possessions in India and other parts of Asia. London, 1870.	Secretary of State for India, London.
	Alaska and adjoining territory. United States Coast Survey. 1863.	J. E. Hilgard, in charge of Coast Survey, United States.
	Observations of the planet Jupiter. By Alfred Mayer, Ph. D	A. Mayer, Ph. D., Lehigh University, Pennsylvania.
	Aurore boréale et autres phénomènes météorologiques observés en Piémont, 3 janvier 1870.	Prof. P. A. Denza, Moncalieri.
Aug. 4	Aurore polare observata in Piemonte nel 5 Aprile 1870	The same.
	Œuvres de La Grange. Vol. IV	The Minister of Public Instruction, Paris.
5	Anales del observatorio de marina de San Fernando. Don Cecilio Pujazon, director. Seccion 2d, observaciones meteorologicas año 1870.	Don Cecilio Pujazon, Director of Observatory, San Fernando, Spain.
11	Jahresbericht des physikalischen Central-Observatoriums für 1869. H. Wild, director.	Prof. H. Wild, Director of the Physical Observatory, St. Petersburg.
	Materyaly de Klimatografii Galicyi Zebrane przes Sekcye Meteorologiczna. Rok, 1869.	Prof. Dr. Karlinski, Cracow, Poland, Russia.
	Astronomische Beobachtungen auf der Sternwarte der königlichen rheinischen Friederich-Wilhelms-Universität zu Bonn. F. W. A. Argelander. Siebenter Band. Bonn, 1869.	Dr. F. W. A. Argelander, Director of the Observatory, Bonn.
31	Astronomical observations taken during the years 1865–'69 at the private observatory of Joseph Gurney Barclay, Esq., F. R. A. S., Leyton, Essex. Vol. 11. London, 1870.	C. G. Talmage, Director of the Observatory, Leyton, Essex.
Oct. 1	Report of the meteorological committee of the Royal Society. December 31, 1869.	R. H. Scott, Director of the Meteorological Office, London.
21	Nederlandsch meteorologisch Jaarbook voor 1869	M. Buys-Ballot, Director of the Royal Meteorological Institute, Utrecht.
	Results of the astronomical and meteorological observations made at the Radcliffe Observatory, Oxford, in the year 1867. Vol. 27.	Rev. R. Main, Radcliffe Observatory, Oxford.
	Physique sociale; ou, essai sur le développement des facultés de l'homme. Quetelet.	A. D. Quetelet, Director of the Observatory, Brussels.
	Annales de l'Observatoire royale de Bruxelles. Tome XIX	The same.
	Annuaire de l'Observatoire, 1870	The same.
	Observations des phénomènes périodiques pendant les années 1867–'68.	The same.
	Notice sur les aurores boréales, 15 avril, 15 mai, et 6 octobre 1869; les étoiles filantes du mois d'août 1869; et sur le bolide à Bruxelles, 13 mai.	The same.
	Notice sur le Congrès Statistique de Florence en 1867	The same.
	Congrès international de statistique des délégués des différens pays	The same.
29	Report of Committee of Trustees of Rensselaer Polytechnic Institute, 1870.	Lieut. C. E. Dutton, U. S. Army.
	Report of the Meteorological Reporter to the government of Bengal.	H. F. Blanford, Meteorological Reporter.
	Report of the progress of the U. S. Coast Survey for the year 1867	Prof. Benjamin Peirce, Superintendent.

Date.	Publications.	From whom received.
Oct. 31	The anvil protuberance of the total eclipse of August 7, 1869. Gilman.	W. S. Gilman, jr., New York.
Nov. 28	Ueber den jährlichen Gang der Temperatur zu Klangenfurt, Triest und Arvavaralja. Jelinek.	Dr. C. Jelinek, Vienna.
	Report of the Commissioner of Agriculture for 1869	Hon. Horace Capron, Commissioner.
Dec. 3	Reports of the United States Commissioners to the Paris Universal Exposition. 1867. 16 numbers.	Prof. W. P. Blake, Commissioner and Editor.
	Bestimmung der Längendifferenz zwischen Berlin and Lund	Dr. C. Bruhns, Leipzig.
	Bestamnig af Planeten (92) Undinas. Band. Anderson	Dr. F. Anderson, Lund.
13	Magnetische und meteorologische Beobachtungen auf der kaiserlich-königlichen Sternwarte zu Prag im Jahre 1869.	Dr. Carl Hornstein, Prague.
	Ueber die Bahn des Hinds'chen Cometen, 1847	The same.
	Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin. 1869. Vols. I–II.	Secretary of the Royal Academy of Sciences, Berlin.
	Rendiconti reale istituto di scienze e lettere, Milano. Serie II, vol. 2, fascie 14–15.	Secretary of the Royal Academy of Sciences, Milan.
	Memorie del reale istituto. Milan	The same.
	Sitzungsbericht der königlich-bayerischen Akademie der Wissenschaften zu München. 1869–'70.	Secretary of Munich Academy.
	Transactions of the Bombay Geological Society. Vols. X–XVII. Journal, 1840. Proceedings, 1840.	J. Burgess, Esq., Hon. Secretary, Bombay.
21	Transactions of the Connecticut Academy of Arts and Sciences. Vol. II, Part 1.	A. Van Name, Secretary, New Haven.
	THE FOLLOWING PUBLICATIONS HAVE ALSO BEEN RECEIVED AT INTERVALS DURING THE YEAR.	
	Mittheilungen aus Justus Perthes' geographischer Anstalt für 1869.	Justus Perthes, Gotha.
	Zeitschrift der österreichischen Gesellschaft für Meteorologie und Erdmagnetismus. Band IV–V.	Dr. Carl Jelinek, Vienna.
	Bulletin Mensuel de la Société Impériale Zoologique d'Acclimation. Tome VI.	A. Geoffroy St. Hilaire, Hon. Secretary, Paris.
	Bulletins de la Société de Géographie de Paris. 1869–'70	C. Maunoir, Secretary.
	Proceedings of the Royal Geographical Society. 1869–'70. Journal. Vol. 39.	C. R. Markham and R. H. Major, Secretaries.
	Bulletins Météorologiques de l'Observatoire de Montsouris. 1869–'70.	M. St. Claire Deville, Paris.
	Bolletinos meteorologicos dell' osservatorio del reale collegio Carlo Alberto. Moncalieri. Vol. IV.	Prof. F. Denza, Turin.
	Bolletinos meteorologico ed astronomico del regio osservatorio dell' universita di Torino. 1869.	Prof. A. Dorna, Director.
	Journal of the Scottish Meteorological Society. Nos. XXII–XXVI.	A. Buchan, Esq., F. R. S., Edinburgh.
	Weather-Reports of the Meteorological Office, London. 1869–'70.	R. H. Scott, Esq., Director, London.
	Monthly meteorological results, Provincial Magnetic Observatory, Toronto, and general meteorological register. 1869–'70.	G. T. Kingston, Esq., Director, Toronto, Canada.
	Bulletins Météorologiques Mensuels de l'Observatoire de l'Université d'Upsal. 1868–'69.	G. Svanberg, Director.
	Journal of the Statistical Society of London. 1870	F. Purdy, Esq., Editor, London.
	Vierteljahrsschrift der astronomischen Gesellschaft. 1870	Secretary of the Astronomical Society, Leipsic.
	Bulletin International de l'Observatoire Impériale de Paris. 1870.	C. Delaunay, Director.
	Meteorological observations taken at Brisbane and other stations in Australia. 1869.	E. MacDonnell, Government Meteorological Observer, Brisbane.
	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie und Erdmagnetismus. Telegraphische Witterungsberichte der Central-Anstalt.	Dr. C. Jelinek.
	Schweizerische meteorologische Beobachtungen. 1869–'70	Prof. Dr. R. Wolf, Zurich, Switzerland.
	Journal of the Franklin Institute of Philadelphia. 1870	Dr. W. H. Wohl, Editor.
	Bolletino della societa geographia Italiana. Firenze. 1870	Comm. Christoforo Negri, President Italian Geographical Society.
	Bulletin de l'Association Scientifique de France. Tome VIII	Président de l'Association Scientifique, Paris.

APPENDIX I.

REPORT

ON THE

DIFFERENCE OF LONGITUDE

BETWEEN

WASHINGTON AND ST. LOUIS.

BY

WILLIAM HARKNESS,

PROFESSOR OF MATHEMATICS, U. S. NAVY.

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REPORT

ON THE

DIFFERENCE OF LONGITUDE

BETWEEN

WASHINGTON AND ST. LOUIS.

UNITED STATES NAVAL OBSERVATORY,
Washington, November 14, 1872.

SIR: I have the honor to submit to you the following report on the determination of the difference of longitude between Washington and St. Louis, of which you directed me to take charge so far as this Observatory is concerned.

I.—INTRODUCTORY.

The operations described in this report were initiated by the United States Coast Survey, and the Observatory took part in them at the request of that institution, with the understanding that the observations at St. Louis should be made by Coast Survey officers, and those at Washington by Observatory officers; and that at the conclusion of the campaign complete copies of the observations and reductions should be exchanged for each other's use. The observations here were made by myself and Assistant Observer Edgar Frisby, and reduced entirely by me. The observations at St. Louis were made by Professor William Eimbeck, of the Coast Survey, and reduced by Professor R. Keith, of the Coast Survey; but, as the right ascensions which the latter gentleman adopted for some of the stars employed differed slightly from those used at this Observatory, before his work could be compared with my own it required a few small corrections, which have been introduced by Mr. Frisby and myself. The arrangements for the use of the Western Union Telegraph Company's lines between Washington and St. Louis were made by the officers of the Coast Survey, but I cannot refrain from expressing my thanks to Mr. M. Marean, the Western Union Company's electrical superintendent in this city, for his kindness in promptly making the necessary connections between the different wires at the main office here.

II.—DESCRIPTION OF OBSERVING-STATIONS.

The observing-station at Washington was the present site of the transit circle, which is 77.8 feet due west of the center of the dome of the Observatory. Its geographical position is:

Latitude, - - - - - - - - $+ 38^\circ\ 53'\ 38''.8$
Longitude, west of Greenwich, - $5^h\ 8^m\ 12^s.0$

The station at St. Louis was in a small observatory erected on St. Charles street, between Seventeenth and Eighteenth streets, in the southwest corner of the Washington University grounds. These grounds, rectangular in form, are bounded on the north by Washington avenue, and on the south by St. Charles street, occupying the whole space between these streets, which is 150 feet. They are bounded on the east by Seventeenth street, and extend 206 feet 10½ inches toward Eighteenth street. Washington avenue and St. Charles streets are parallel to each other, and run in the direction south 75° east. Seventeenth and Eighteenth streets are also parallel to each other and run in the direction south 15° west. The small observatory building measured eight feet from north to south, and ten feet from east to west. It contained two piers, the transit instrument being mounted on the eastern one and the zenith telescope on the western one. The following distances were measured from the station point on the transit pier, viz: to the western boundary of the university grounds, 13 feet 5 inches; to the line of curb-stones on the northern side of St. Charles street, 14 feet 4 inches; and to the produced western face of the Scientific Department building, 10 feet 4 inches. The approximate latitude of the station was + 38° 37′.

III.—INSTRUMENTS EMPLOYED AT WASHINGTON.

The Transit Circle, whose object-glass has a focal length of 145 inches, and a clear aperture of 8.52 inches, was used with an eye-piece which produced a magnifying-power of 186 diameters. Throughout the whole series of observations the clamp end of the axis was to the east. A description of this instrument is given in Appendix I to the Washington Observations for 1865.

The Kessels Sidereal Clock, No. 1324, which is the Observatory standard, was employed in connection with

A Chronograph, having a barrel 8.15 inches in diameter and 24.0 inches long, revolving once each minute. This chronograph will run continuously for four hours without requiring the paper to be changed. It has but a single pen, with which both the clock-signals and those made by the observer are recorded.

The Electro-magnetic Apparatus, which was used for sending and receiving the longitude-signals is entirely automatic. It would occupy too much space to explain it here, but a full description may be found in Appendix I to the Washington Observations for 1867.

IV.—INSTRUMENTS EMPLOYED AT ST. LOUIS.

United States Coast Survey Portable Transit Instrument No. 7, made by William Würdemann, of Washington. Its object-glass has a focal distance of 25¾ inches, and a clear aperture of 2.03 inches. A diagonal eye-piece was used, which produced a magnifying-power of 67 diameters. The length of the axis between the Y's is 14 inches, and the pivots are 0.71 of an inch in diameter. It is provided with two finding-circles, each 4 inches in diameter, graduated to every 20′, and reading by means of two verniers to single minutes.

A Sidereal Box Chronometer, Kessels and Dent No. 1287.

A Mean Time Box Chronometer, Dent No. 2748.

The Electro-magnetic Apparatus employed was the ordinary Morse receiving magnet, sounder, and key, together with a break-circuit key; all of which were in the Western Union Telegraph Office in the Merchant's Exchange, on First street, between Walnut and Market streets.

V.—METHOD OF REDUCING THE OBSERVATIONS FOR TIME.

Let

α = apparent right ascension of the star observed;

T' = observed clock or chronometer time of star's transit;

T_0 = time, by face of clock or chronometer, for which clock or chronometer correction is to be determined;

R = rate per hour of clock or chronometer;

ΔT_0 = correction of clock or chronometer at the instant when its face indicated the time T_0;

v = effect of errors of observation;

a, b, and c = respectively, the azimuth, level, and collimation constants;

A, B, and C = respectively, the azimuth, level, and collimation factors,

Then each star observed will furnish one equation of condition of the form

$$0 = \alpha - [T' + \Delta T_0 + R\,(T' - T_0) + Aa + Bb + Cc] - v$$

and from all the equations thus obtained the most probable values of the quantities considered as unknown can be found by the method of least squares.

When the observations have been made with a fixed instrument, the quantities sought are usually ΔT_0 and R; but if a portable instrument has been used they will generally be ΔT_0, R, and a. Sometimes it is convenient to make T_0 equal to the mean of the observed times of transit of all the stars in the group, and then R is found from the difference between the values of ΔT_0 given by two groups of stars separated by an interval of some hours. It is always advantageous to have the unknown quantities in the equations of condition quite small, and therefore, when possible, it is best to introduce closely approximate values of these quantities, and to solve only for small corrections to these approximate values. Thus, if R is large, and r is an approximate value of it, we write $R = \delta r + r$, and, substituting that value in the equations of condition, we determine δr. In the same manner, if ΔT_0 is large, and θ is an approximate value of it, we write $\Delta T_0 = \theta + \delta\theta$, and, substituting that value in the equations of condition, we determine $\delta\theta$.

The factors A, B, and C may be computed by means of the formulæ

$$A = \sin(\varphi - \delta)\sec\delta = \sin\varphi - \cos\varphi\tan\delta$$
$$B = \cos(\varphi - \delta)\sec\delta = \cos\varphi + \sin\varphi\tan\delta$$
$$C = \sec\delta$$

in which φ is the latitude of the place of observation, and δ the declination of the star observed. For a culmination below the pole, $180° - \delta$ must be substituted instead of δ. The following rules are sometimes convenient for determining the signs of these quantities.

A is positive, except for stars between the zenith and the pole.

B and C are positive, except for stars below the pole.

Table I gives the adopted mean places of all the stars employed in the longitude operations, together with the corresponding values of A, B, and C, both at Washington and St. Louis.

TABLE I.—*Adopted Mean Right Ascensions for* 1870.0 *of Stars used in the Determination of the Difference of Longitude between Washington and St. Louis; together with the Constants A, B, and C for Azimuth, Level, and Collimation at each Station.*

Name of Star.	Right Ascension.			Washington.			St. Louis.		
	h.	m.	s.	*A*	*B*	*C*	*A*	*B*	*C*
ε Hydræ	8	39	53.45	. .	. .	. .	+ 0.529	+ 0.857	+ 1.01
ι Ursæ Majoris	8	50	17.72	. .	. .	. .	− 0.247	+ 1.490	+ 1.52
κ Cancri	9	0	42.25	. .	. .	. .	+ 0.462	+ 0.918	+ 1.03
1 Draconis	9	18	20.13	. .	. .	. .	− 4.85	+ 5.15	+ 7.08
α Hydræ	9	21	11.96	. .	. .	. .	+ 0.734	+ 0.693	+ 1.01
β Cephei, S. P.	9	26	58.46	. .	. .	. .	+ 2.76	− 0.939	− 2.92
ε Leonis	9	38	28.10	. .	. .	. .	+ 0.267	+ 1.06	+ 1.10
μ Leonis	9	45	21.94	. .	. .	. .	+ 0.232	+ 1.09	+ 1.12
79 Draconis, S. P.	9	51	15.02	. .	. .	. .	+ 3.19	− 1.27	− 3.44
α Leonis	10	1	26.82	. .	. .	. .	+ 0.449	+ 0.920	+ 1.02
32 Ursæ Majoris	10	8	33.82	. .	. .	. .	− 1.11	+ 2.17	+ 2.44
γ¹ Leonis	10	12	48.14	. .	. .	. .	+ 0.331	+ 1.02	+ 1.07
9 Draconis	10	23	58.40	. .	. .	. .	− 2.60	+ 3.36	+ 4.25
l Leonis	10	42	25.37	. .	. .	. .	+ 0.469	+ 0.904	+ 1.02
ι Cephei, S. P.	10	45	3.53	. .	. .	. .	+ 2.34	− 0.589	− 2.41
α Ursæ Majoris	10	55	41.04	. .	. .	. .	− 0.875	+ 1.98	+ 2.16
δ Leonis	11	7	11.52	. .	. .	. .	+ 0.320	+ 1.02	+ 1.07
δ Crateris	11	12	50.58	. .	. .	. .	+ 0.820	+ 0.624	+ 1.03
τ Leonis	11	21	15.13	+ 0.579	+ 0.817	+ 1.00	+ 0.574	+ 0.820	+ 1.00
λ Draconis	11	23	39.55	. .	. .	. .	− 1.53	+ 2.50	+ 2.93
υ Leonis	11	30	17.60	+ 0.629	+ 0.777	+ 1.00			
β Leonis	11	42	25.66	+ 0.416	+ 0.949	+ 1.04	+ 0.411	+ 0.952	+ 1.04
γ Ursæ Majoris	11	46	58.98	. .	. .	. .	− 0.468	+ 1.65	+ 1.72
ο Virginis	11	58	35.22	+ 0.498	+ 0.883	+ 1.01	+ 0.493	+ 0.886	+ 1.01
4 Draconis	12	6	4.78	. .	. .	. .	− 3.16	+ 3.81	+ 4.95
η Virginis	12	13	15.35	+ 0.627	+ 0.779	+ 1.00	+ 0.622	+ 0.782	+ 1.00
β Corvi	12	27	33.74	+ 0.953	+ 0.515	+ 1.08			
κ Draconis	12	27	55.31	. .	. .	. .	− 1.58	+ 2.54	+ 3.00
12 Canum Venaticorum	12	49	56.63	− 0.002	+ 1.29	+ 1.29			
θ Virginis	13	3	13.27	+ 0.694	+ 0.725	+ 1.00			
Polaris, S. P.	13	11	17.34	+32.85	−25.22	− 41.42			
α Virginis	13	18	20.85	+ 0.772	+ 0.660	+ 1.02			
ζ Virginis	13	28	4.26	+ 0.626	+ 0.779	+ 1.00			
η Bootis	13	48	29.71	+ 0.360	+ 0.995	+ 1.06			
α Bootis	14	9	43.98	+ 0.347	+ 1.00	+ 1.06			

TABLE I.—*Adopted Mean Right Ascensions for* 1870.0, *&c.*—Continued.

Name of Star.	Right Ascension.			Washington.			St. Louis.		
				A	*B*	*C*	*A*	*B*	*C*
	h.	m.	s.						
ε Bootis	14	39	18.61	+ 0.219	+ 1.11	+ 1.13			
α^2 Libræ	14	43	41.42	+ 0.842	+ 0.606	+ 1.04	+ 0.838	+ 0.610	+ 1.04
β Ursæ Minoris	14	51	6.66	. .	. .	. .	− 2.13	+ 3.06	+ 3.79
β Bootis	14	57	2.89	− 0.046	+ 1.32	+ 1.32	− 0.052	+ 1.32	+ 1.32
β Libræ	15	10	0.87	+ 0.750	+ 0.679	+ 1.01	+ 0.746	+ 0.683	+ 1.01
μ^1 Bootis	15	19	34.84	+ 0.023	+ 1.27	+ 1.27	+ 0.017	+ 1.27	+ 1.27
γ^2 Ursæ Minoris	15	20	57.15	. .	. .	. .	− 1.82	+ 2.74	+ 3.29
α Coronæ Borealis	15	29	11.08	+ 0.229	+ 1.10	+ 1.12	+ 0.223	+ 1.10	+ 1.12
α Serpentis	15	37	51.99	+ 0.535	+ 0.853	+ 1.01	+ 0.530	+ 0.856	+ 1.01
ε Serpentis	15	44	20.27	+ 0.562	+ 0.832	+ 1.00	+ 0.557	+ 0.834	+ 1.00
ζ Ursæ Minoris	15	48	45.50	. .	. .	. .	− 3.12	+ 3.77	+ 4.89
ε Coronæ Borealis	15	52	12.44	. .	. .	. .	+ 0.222	+ 1.102	+ 1.12
β^1 Scorpii	15	57	52.89	. .	. .	. .	+ 0.899	+ 0.559	+ 1.06
Groombridge 2320	16	5	58.46	. .	. .	. .	− 1.33	+ 2.33	+ 2.69
δ Ophiuchi	16	7	32.12	. .	. .	. .	+ 0.676	+ 0.739	+ 1.00
τ Herculis	16	15	50.13	. .	. .	. .	− 0.189	+ 1.44	+ 1.46
η Draconis	16	22	14.18	. .	. .	. .	− 0.836	+ 1.94	+ 2.12
ζ Ophiuchi	16	30	0.16	. .	. .	. .	+ 0.764	+ 0.668	+ 1.02
η Herculis	16	38	26.43	− 0.005	+ 1.29	+ 1.29	− 0.011	+ 1.29	+ 1.29
κ Ophiuchi	16	51	30.97	+ 0.497	+ 0.884	+ 1.01	+ 0.492	+ 0.887	+ 1.01
d Herculis	16	56	48.28	+ 0.107	+ 1.20	+ 1.20	+ 0.101	+ 1.20	+ 1.20
ε Ursæ Minoris	16	59	22.74	− 5.09	+ 5.39	+ 7.42	− 5.12	+ 5.37	+ 7.42
a^1 Herculis	17	8	43.26	+ 0.426	+ 0.941	+ 1.03	+ 0.421	+ 0.944	+ 1.03
44 Ophiuchi	17	18	26.00	+ 0.974	+ 0.498	+ 1.09	+ 0.971	+ 0.502	+ 1.09
Groombridge 966, S. P.	17	22	21.68	. .	. .	. .	+ 3.53	− 1.54	− 3.85
α Ophiuchi	17	28	54.07	+ 0.453	+ 0.919	+ 1.02	+ 0.448	+ 0.922	+ 1.02
ω Draconis	17	37	42.96	. .	. .	. .	− 1.39	+ 2.39	+ 2.77
μ Herculis	17	41	22.32	+ 0.216	+ 1.11	+ 1.13			
γ Draconis	17	53	35.37	. .	. .	. .	− 3.60	+ 1.57	+ 1.61
γ^2 Sagittarii	17	57	27.50	+ 1.08	+ 0.413	+ 1.16			
μ^1 Sagittarii	18	5	59.38	+ 0.926	+ 0.538	+ 1.07	+ 0.923	+ 0.542	+ 1.07
δ Ursæ Minoris	18	14	16.33	−12.47	+11.35	+ 16.86	−12.52	+11.28	+ 16.86
η Serpentis	18	14	35.03	. .	. .	. .	+ 0.663	+ 0.749	+ 1.00
1 Aquilæ	18	28	8.00	+ 0.742	+ 0.686	+ 1.01			
α Lyræ	18	32	32.26	+ 0.006	+ 1.28	+ 1.28			
51 Cephei, S. P.	18	38	43.17	+16.73	−12.21	− 20.72	+16.86	−12.18	− 20.72
β Lyræ	18	45	16.87	+ 0.117	+ 1.19	+ 1.19			
ζ Aquilæ	18	59	26.14	+ 0.438	+ 0.930	+ 1.03	+ 0.433	+ 0.933	+ 1.03
d Sagittarii	19	10	1.68	. .	. .	. .	+ 0.894	+ 0.564	+ 1.06
δ Aquilæ	19	18	56.64	+ 0.589	+ 0.809	+ 1.00	+ 0.584	+ 0.812	+ 1.00

TABLE I.—*Adopted Mean Right Ascensions for* 1870.0, *&c.*—Continued.

Name of Star.	Right Ascension.	Washington.			St. Louis.		
		A	*B*	*C*	*A*	*B*	*C*
	h. m. s.						
κ Aquilæ	19 29 53.85	+ 0.728	+ 0.697	+ 1.01	+ 0.724	+ 0.701	+ 1.01
γ Aquilæ	19 40 4.79	+ 0.486	+ 0.892	+ 1.02	+ 0.481	+ 0.895	+ 1.02
α Aquilæ	19 44 26.46	+ 0.511	+ 0.872	+ 1.01	+ 0.506	+ 0.875	+ 1.01
β Aquilæ	19 48 55.68	+ 0.545	+ 0.845	+ 1.01	+ 0.540	+ 0.848	+ 1.01
λ Ursæ Minoris . . .	19 54 16.90	−40.52	+33.99	+ 52.89	−40.68	+33.78	+ 52.89
α² Capricorni	20 10 50.44	+ 0.806	+ 0.634	+ 1.03	+ 0.802	+ 0.638	+ 1.03
ε Delphini	20 27 0.17	+ 0.478	+ 0.898	+ 1.02	+ 0.473	+ 0.901	+ 1.02
α Cygni	20 37 0.07	. .	. .	. .	− 0.140	+ 1.40	+ 1.41
μ Aquarii	20 45 38.47	. .	. .	. .	+ 0.747	+ 0.674	+ 1.01
ν Cygni	20 52 19.70	. .	. .	. .	− 0.046	+ 1.32	+ 1.32
1 Pegasi	21 16 4.52	+ 0.357	+ 0.997	+ 1.06			
β Aquarii	21 24 42.90	+ 0.712	+ 0.710	+ 1.01			

Washington Observations.—The observations for time made at Washington are given in Table II. The first and second columns do not require any explanation. The column "*Observer*" contains the initials of the person who made the observations, as follows:

Ha. - - - - - - -	Professor William Harkness.
E. - - - - - - -	Professor John R. Eastman.
F. - - - - - - -	Assistant Observer Edgar Frisby.
S. - - - - - - -	Assistant Observer Ormond Stone.

The column "*No. of Wires*" gives the number of wires over which the transit of the star was observed. All time-stars were observed by the chronographic method, and, as a rule, over nine wires; but azimuth-star were observed by eye and ear, and generally over only five wires. The column "*Time of Transit over Mean of Wires*" contains the time of transit over an imaginary wire situated at the mean of the standard set of nine wires. For stars observed over all the wires of that set the mean of the observed times of transit is of course the time of transit over the mean wire, but for other stars the time of transit over the mean wire has been deduced from the observed times of transit by the application of the necessary corrections. The columns "*Cc,*" "*Bb,*" and "*Aa*" contain the corrections for collimation, level, and azimuth. The numbers in the column "*Correction for Instrument*" are the sums of the quantities in the three preceding columns. The column "*Corr. Transit*" contains the clock-time of transit over the meridian, obtained by adding together the quantities in the columns "*Time of Transit over Mean of Wires*" and "*Correction for Instrument.*" The column "*Adopted Right Ascension*" contains the adopted apparent right ascensions of the stars observed. The column "*Observed Clock Corr.*" contains the difference between the "*Corr. Transit*" and the

"*Adopted Right Ascension.*" The column v contains the difference between the observed and adopted clock corrections; or, in other words, the error of observation.

The values of the constants employed during each night are as follows:

Date.	c	b	a
	s.	s.	s.
April 12	− 0.02	− 0.15	+ 0.02
23	.01	.14	− 0.15
26	.02	.08	.07
30	− 0.02	− 0.11	− 0.16

The constant c was obtained from observations on a pair of opposing collimators. b was obtained from observations of the spirit-level, two readings being made with it in a direct, and two with it in a reversed position. a was computed from the observed transits of Polaris, using for that purpose a closely approximate value of the clock correction. Full details as to the methods of determining these constants are given on pages xxvi–xxviii of the Washington Observations for 1870.

TABLE II.—*Transits of Stars observed at Washington to determine the Corrections to the Kessels Sidereal Clock.*

Date.	Star.	Observer.	No. of Wires.	Time of Transit over Mean of Wires.	*Cc*	*Bb*	*Aa*	Correction for Instrument.	Corr. Transit.	Adopted Right Ascension.	Observed Clock Corr.	*v*
1870.				h. m. s.	s.	s.	s.	s.	s.	s.	s.	
April 12	τ Leonis . .	Ha.	9	11 21 18.11	−0.02	−0.12	+0.01	−0.13	17.98	16.00	−1.98	+.02
	υ Leonis . .	Ha.	9	30 20.54	.02	.12	.01	.13	20.41	18.51	1.90	−.06
	β Leonis . .	Ha.	9	42 28.72	.02	.14	.01	.15	28.57	26.57	2.00	+.04
	ο Virginis . .	Ha.	9	11 58 38.29	.02	.13	.01	.14	38.15	36.20	1.95	−.02
	η Virginis . .	Ha.	9	12 13 18.50	.02	.12	.01	.13	18.37	16.37	2.00	+.03
	θ Virginis . .	Ha.	9	13 3 16.48	− .02	−0.11	.01	−0.12	16.36	14.39	1.97	−.01
	Polaris, S.P. .	Ha.	5	13 10 29.50	+0.83	+3.78	+0.66	+5.27	34.77	32.75	−2.02	
April 23	υ Leonis . .	F.	9	11 30 24.28	−0.01	−0.11	−0.09	−0.21	24.07	18.45	−5.62	−.01
	β Leonis . .	F.	9	42 32.40	.01	.13	.06	.20	32.20	26.51	.69	+.05
	ο Virginis . .	F.	9	11 58 41.96	.01	.12	.07	.20	41.76	36.15	.61	−.04
	η Virginis . .	F.	9	12 13 22.21	.01	.11	− .09	.21	22.00	16.35	.65	−.01
	12 Canum Venat.	F.	9	12 49 3.76	− .01	−0.18	0.00	.19	3.57	57.88	.69	+.01
	Polaris, S.P. .	F.	5	13 10 42.10	+ .41	+3.53	−4.93	.99	41.11	35.27	.84	
	μ^1 Bootis. . .	F.	9	15 19 42.16	− .01	−0.18	0.00	.19	41.97	36.24	.73	−.03
	α Cor. Borealis.	F.	9	15 29 18.31	−0.01	−0.15	−0.03	−0.19	18.12	12.33	−5.79	+.03
April 26	τ Leonis . .	F.	5	11 21 23.19	−0.02	−0.07	−0.04	−0.13	23.06	15.90	−7.16	−.03
	υ Leonis . .	F.	9	30 25.83	.02	.06	.04	.12	25.71	18.43	.28	+.08
	ο Virginis . .	F.	9	11 58 43.43	.02	.07	− .04	.13	43.30	36.13	.17	−.05
	12 Canum Venat.	F.	9	12 50 5.20	.03	.10	.00	.13	5.07	57.87	.20	−.05
	θ Virginis . .	Ha.	9	13 3 21.70	− .02	−0.06	−0.05	− .13	21.57	14.41	.16	+.06
	Polaris, S.P. .	F.	5	10 42.68	+ .83	+2.02	−2.30	+ .55	43.23	35.95	.28	
	ζ Virginis . .	F.	9	28 12.88	− .02	−0.06	0.04	− .12	12.76	5.42	.34	+.06
	η Bootis. . .	Ha.	9	13 48 38.14	.02	.08	.03	.13	38.01	30.91	.10	−.03
	α Serpentis . .	F.	9	15 38 0.63	.02	.07	.04	.13	0.50	53.15	.35	−.02
	ε Serpentis . .	Ha.	9	15 44 28.79	−0.02	−0.07	−0.04	−0.13	28.66	21.44	−7.22	+.01
April 30	ο Virginis . .	Ha.	9	11 58 45.19	−0.02	−0.10	−0.08	−0.20	44.99	36.11	−8.88	−.01
	η Virginis . .	Ha.	9	12 13 25.43	.02	.09	.10	.21	25.22	16.32	.90	+.01
	β Corvi . . .	Ha.	9	12 27 44.11	− .02	−0.06	0.15	0.23	43.88	34.93	.95	+.05
	Polaris, S.P. .	Ha.	5	13 10 48.10	+ .83	+2.77	5.26	1.66	46.44	37.53	.91	
	α Virginis . .	Ha.	9	18 31.12	− .02	−0.07	0.12	0.21	30.91	22.06	.85	−.06
	ζ Virginis . .	Ha.	9	28 14.54	.02	.09	.10	.21	14.33	5.43	.90	−.01
	η Bootis. . .	Ha.	9	13 48 40.00	.02	.11	.06	.19	39.81	30.93	.88	−.03
	α Bootis. . .	Ha.	9	14 9 54.37	−0.02	−0.11	−0.06	−0.19	54.18	45.20	−8.98	+.06

Each of the quantities in the column "*Observed Clock Corr.*" is equal to

$$\alpha - [T' + Aa + Bb + Cc]$$

which, for brevity, we will represent by n. Then each star observed furnishes an equation of condition of the form

$$0 = -n + \Delta T_0 + R\,(T' - T_0) + v$$

and from all the equations thus obtained on any given night the values of ΔT_0 and R for that night have been found by the method of least squares. Assuming $T_0 = 11^{\mathrm{h}}\ 0^{\mathrm{m}}$ by the face of the Kessels clock, the equations of condition, normal equations, and resulting values of ΔT_0 and R, for each night, are as follows:

WASHINGTON, APRIL 12, 1870.

Equations of Condition.

$0 = +\overset{\mathrm{s.}}{1.98} + \Delta T_0 + \overset{\mathrm{h.}}{0.35}\,R$
$0 = +1.90 + \Delta T_0 + 0.50\,R$
$0 = +2.00 + \Delta T_0 + 0.71\,R$
$0 = +1.95 + \Delta T_0 + 0.98\,R$
$0 = +2.00 + \Delta T_0 + 1.22\,R$
$0 = +1.97 + \Delta T_0 + 2.05\,R$

Normal Equations.

$0 = +\overset{\mathrm{s.}}{11.80} + 6.00\,\Delta T_0 + 5.81\,R$
$0 = +11.45 + 5.81\,\Delta T_0 + 7.53\,R$

Hence

$\Delta T_0 = -\overset{\mathrm{s.}}{1.954} \pm \overset{\mathrm{s.}}{0.010}$
$R = -0.0133$

WASHINGTON, APRIL 23, 1870.

Equations of Condition.

$0 = +\overset{\mathrm{s.}}{5.62} + \Delta T_0'' + \overset{\mathrm{h.}}{0.51}\,R$
$0 = +5.69 + \Delta T_0'' + 0.71\,R$
$0 = +5.61 + \Delta T_0'' + 0.98\,R$
$0 = +5.65 + \Delta T_0'' + 1.22\,R$
$0 = +5.69 + \Delta T_0'' + 1.82\,R$
$0 = +5.73 + \Delta T_0'' + 4.33\,R$
$0 = +5.79 + \Delta T_0'' + 4.49\,R$

Normal Equations.

$0 = +\overset{\mathrm{s.}}{39.78} + 7.00\,\Delta T_0'' + 14.06\,R$
$0 = +80.46 + 14.06\,\Delta T_0'' + 45.43\,R$

Hence

$\Delta T_0'' = -\overset{\mathrm{s.}}{5.615} \pm \overset{\mathrm{s.}}{0.008}$
$R = -0.0335$

WASHINGTON, APRIL 26, 1870.

Equations of Condition.

$0 = +\overset{\mathrm{s.}}{7.16} + \Delta T_0'' + \overset{\mathrm{h.}}{0.36}\,R$
$0 = +7.28 + \Delta T_0'' + 0.51\,R$
$0 = +7.17 + \Delta T_0'' + 0.98\,R$
$0 = +7.20 + \Delta T_0'' + 1.83\,R$
$0 = +7.16 + \Delta T_0 + 2.06\,R$

$0 = +\overset{\mathrm{s.}}{7.34} + \Delta T_0'' + \overset{\mathrm{h.}}{2.47}\,R$
$0 = +7.10 + \Delta T_0 + 2.81\,R$
$0 = +7.35 + \Delta T_0'' + 4.63\,R$
$0 = +7.22 + \Delta T_0 + 4.74\,R$

Normal Equations.

$$
\begin{aligned}
0 &= +\overset{s.}{43.50} + 6.00\,\Delta T_0'' + 0.00\,\Delta T_0 + 10.78\,R \\
0 &= +21.48 + 0.00\,\Delta T_0'' + 3.00\,\Delta T_0 + 9.61\,R \\
0 &= +147.58 + 10.78\,\Delta T_0'' + 9.61\,\Delta T_0 + 66.84\,R
\end{aligned}
$$

Hence

$$
\begin{aligned}
\Delta T_0'' &= -\overset{s.}{7.176} \pm \overset{s.}{0.016} \\
\Delta T_0 &= -7.013 \pm 0.019 \\
R &= -0.0423
\end{aligned}
$$

WASHINGTON, APRIL 30, 1870.

Equations of Condition.

$$
\begin{aligned}
0 &= +\overset{s.}{8.88} + \Delta T_0 + \overset{h.}{0.98}\,R \\
0 &= +8.90 + \Delta T_0 + 1.22\,R \\
0 &= +8.95 + \Delta T_0 + 1.46\,R \\
0 &= +8.85 + \Delta T_0 + 2.31\,R \\
0 &= +8.90 + \Delta T_0 + 2.47\,R \\
0 &= +8.88 + \Delta T_0 + 2.81\,R \\
0 &= +8.98 + \Delta T_0 + 3.16\,R
\end{aligned}
$$

Normal Equations.

$$
\begin{aligned}
0 &= +\overset{s.}{62.34} + 7.00\,\Delta T_0 + 14.41\,R \\
0 &= +128.38 + 14.41\,\Delta T_0 + 33.90\,R
\end{aligned}
$$

Hence

$$
\begin{aligned}
\Delta T_0 &= -\overset{s.}{8.880} \pm \overset{s.}{0.011} \\
R &= -0.0121
\end{aligned}
$$

As will be shown farther on, Mr. Frisby observes the transit of an equatorial star $0^s.121$ later than I, and therefore we have

$$\Delta T_0 = \Delta T_0'' + 0^s.121$$

Hence, on April 23,

$$\Delta T_0 = -5^s.615 + 0^s.121 = -5^s.494 \pm 0^s.008$$

On April 26, Mr Frisby's observations give

$$\Delta T_0 = -7^s.176 + 0^s.121 = -7^s.055 \pm 0^s.016$$

and my own give

$$\Delta T_0 = -7^s.013 \pm 0^s.019$$

Taking the mean, we find

$$\Delta T_0 = -7^s.034 \pm 0^s.014$$

Collecting our results, we have the expressions given in Table III for the corrections which must be applied to the time indicated by the face of the Kessels clock, in order to reduce it to sidereal time determined by myself at the meridian of the transit circle. T' is the time indicated by the clock at the instant for which the correction is required, and the quantities after the sign ± are approximately the probable errors.

TABLE III.—*Corrections to the Kessels Clock.*

Date.		Correction.
		s. s. h. s.
April	12	$-1.954 - 0.0133\,(T' - 11.00) \pm 0.010$
	23	$-5.494 - 0.0335\,(T' - 11.00) \pm 0.008$
	26	$-7.034 - 0.0423\,(T' - 11.00) \pm 0.014$
	30	$-8.880 - 0.0121\,(T' - 11.00) \pm 0.011$

St. Louis Observations.—The observations for time at St. Louis were made by Professor William Eimbeck, and are given in Table IV. The first column contains the date. The column "*Lamp*" gives the position of the axis of the transit instrument; E. signifying that the lamp was to the east, W. that it was to the west. The column "*No. of Wires*" gives the number of wires over which the transit of the star was observed. The field of view of the instrument contained nine vertical wires, separated by intervals of about 15 seconds of time, but as a rule only the middle seven wires were used, and all observations were made by the eye and ear method. The column "*Star*" does not require any explanation. The column "*Time of Transit over Mean of Wires*" contains the time of transit over an imaginary wire situated at the mean of the standard set of seven wires. For stars not observed over all the wires of that set the time of transit over the mean wire has been deduced from the observed times of transit by the application of the necessary corrections. The column "b" contains the observed values of the level constant, each of them being derived from two readings of the spirit-level, one made with it in the direct, the other with it in the reversed position. The level is of the striding form, and each division of its scale is equal to $0^s.09$. The columns "Bb" and "Cc" contain the corrections for level and collimation. The column "r" contains the correction for rate of the chronometer. The column "*Corr. Transit*" contains the sum of the quantities in the columns "*Time of Transit over Mean of Wires*," "Bb," "Cc," and "r." The column "*Adopt'd Right Ascension*" contains the adopted apparent right ascensions of the stars observed. The column "*Obs'd Chron. Correction*" contains the difference between the "*Corr. Transit*" and the "*Adopt'd Right Ascension*." The column "v" contains the difference between the observed and adopted chronometer correction; or, in other words, the error of observation.

Throughout the whole series of time determinations the adopted value of B is $-0^s.086$; and the adopted value of c is $+0^s.24$ for lamp west. The latter constant was obtained from transits of circumpolar stars, each observation being made over one-half the wires with lamp west, and over the other half with lamp east.

TABLE IV.—*Transits of Stars observed at St. Louis to determine the Corrections to the Sidereal Chronometer Kessels and Dent No. 1287.*

Date.	Lamp.	No. of Wires.	Star.	Time of Transit over Mean of Wires.	*b*	*B b*	*C c*	*r*	Corr. Transit.	Adopt'd Right Ascension.	Obs'd Chron. Correction.	*v*
1870.				h. m. s.	s.	s.	s.	s.	m. s.	m. s.	m. s.	s.
April 12	E.	7	ε Hydræ . .	8 33 14.99	−0.09	−0.08	−0.24	−0.05	33 14.62	39 53.60	+6 38.98	−.02
	E.	7	ι Ursæ Maj. .	43 40.78	.13	.19	.36	.07	43 40.16	50 17.91	37.75	+.04
	E.	7	κ Cancri . .	8 54 4.01	.19	0.17	0.24	.08	54 3.52	0 42.51	38.99	−.13
	E.	4	1 Draconis .	9 11 54.42	. .	1.09	1.70	.11	11 51.52	18 22.27	30.75	+.06
	E.	7	α Hydræ . .	14 33.60	. .	−0.15	−0.24	.12	14 33.09	21 12.38	39.29	−.02
	E.	5	β Cephei, S.P.	20 14.21	.23	+ .22	+ .70	.12	20 15.01	26 57.21	42.20	+.14
	W.	7	ε Leonis . .	31 50.04	.25	− .27	.26	.13	31 49.90	38 28.54	38.64	−.05
	W.	7	μ Leonis . .	38 43.89	.17	.19	.27	.15	38 43.82	45 22.41	38.59	−.08
	W.	4	α Leonis . .	9 54 48.57	.09	.09	.24	.17	54 48.55	1 27.37	38.82	+.02
	W.	7	β Libræ . .	15 3 23.16	.20	.14	.24	.01	3 23.25	10 1.90	38.65	+.02
	W.	7	μ^1 Bootis . .	11 58.53	. .	.24	.30	.03	11 58.56	19 36.07	37.51	+.09
	W.	3	γ^2 Ursæ Min. .	14 25.43	.19	.52	.79	.03	14 25.67	21 0.50	34.83	+.10
	W.	5	α Coronæ Bor.	22 34.24	.17	.20	.27	.04	22 34.27	29 12.16	37.89	+.02
	W.	7	α Serpentis .	31 14.53	. .	.15	+ .24	.05	31 14 57	37 52.94	38.37	−.02
	E.	7	ε Serpentis .	37 43.21	. .	.15	−0.24	.06	37 42.76	44 21.21	38.45	−.06
	E.	5	ζ Ursæ Min. .	42 19.07	. .	.68	1.17	.06	42 17.16	48 50.29	33.13	−.09
	E.	6	β^1 Scorpii . .	15 51 15.33	−0.18	−0.10	−0.25	−0.07	51 14.91	57 53.86	+6 38.95	−.06
April 23	E.	5	1 Draconis .	9 11 53.62	+0.10	+0.52	−1.70	−0.03	11 52.41	18 20.82	+6 28.41	+.29
	E.	7	α Hydræ . .	14 46.81	. .	+ .05	−0.24	.03	14 46.59	21 12.22	25.63	−.06
	E.	6	β Cephei, S.P.	20 33.02	+ .04	− .04	+ .70	.03	20 33.65	26 57.90	24.25	+.28
	E.	7	ε Leonis . .	32 2.90	. .	.00	− .26	.05	32 2.59	38 28.38	25.79	+.05
	E.	7	μ Leonis . .	38 56.97	− .11	− .12	.27	.06	38 56.52	45 22.25	25.73	+.13
	E.	7	α Leonis . .	9 55 1.96	.16	.14	0.24	.08	55 1.50	1 27.23	25.73	.00
	E.	7	9 Draconis .	10 17 34.12	.18	.60	−1.02	.12	17 32.38	24 0.14	27.76	−.31
	W.	7	*l* Leonis . .	36 0.31	.25	.22	+0.24	.14	36 0.19	42 25.99	25.80	−.08
	W.	7	α Ursæ Maj. .	10 49 15.53	.20	.40	.52	.16	49 15.49	55 42.23	26.74	−.26
	W.	7	δ Leonis . .	11 0 46.54	. .	.18	.25	.17	0 46.44	7 12.25	25.81	.00
	W.	6	δ Crateris .	6 26.13	.17	.11	.24	.18	6 26.08	12 51.45	25.37	+.16
	W.	7	λ Draconis .	17 14.56	.15	.38	.70	.20	17 14.68	23 41.50	26.82	+.05
	W.	7	β Leonis . .	36 0.89	. .	.14	.24	.22	36 0.77	42 26.51	25.74	+.02
	W.	7	γ Ursæ Maj. .	40 33.90	.15	.24	0.41	.23	40 33.84	47 0.29	26.45	−.20
	W.	4	4 Draconis .	11 59 40.77	−0.15	−0.57	+1.19	−0.26	59 41.13	6 8.85	+6 27.72	−.06
April 26	W.	4	1 Draconis .	9 11 56.91	0.00	0.00	+1.70	−0.02	11 58.59	18 20.42	+6 21.83	+.65
	W.	7	α Hydræ . .	14 52.59	. .	.00	+0.24	.03	14 52.80	21 12.18	19.38	.00
	W.	7	β Cephei, S.P.	20 40.66	− .07	+ .07	− .70	.03	20 40.00	26 58.12	18.12	+.13
	W.	7	ε Leonis . .	32 8.46	.05	− .05	+ .26	.05	32 8.62	38 28.33	19.71	−.07
	W.	7	μ Leonis . .	39 2.47	.08	.09	.27	.06	39 2.59	45 22.20	19.61	+.05
	W.	7	α Leonis . .	9 55 7.49	.02	.02	.24	.08	55 7.63	1 27.17	19.54	.00
	W.	6	γ^1 Leonis . .	10 6 28.93	− .01	− .01	0.25	.10	6 29.07	12 48.56	19.49	+.11
	W.	5	9 Draconis .	17 36.82	+ .04	+ .13	+1.02	.12	17 37.85	23 59.94	22.09	−.86
	E.	4	α Ursæ Maj. .	10 49 22.66	0.00	0.00	−0.52	−0.16	49 21.98	55 42.15	+6 20.17	+.20

TABLE IV.—*Transits of Stars observed at St. Louis, &c.*—Continued.

Date.	Lamp.	No. of Wires.	Star.	Time of Transit over Mean of Wires.	*b*	*Bb*	*Cc*	*r*	Corr. Transit.	Adopt'd Right Ascension.	Obs'd Chron. Correction.	*v*
				h. m. s.	s.	s.	s.	s.	m. s.	m. s.	m. s.	s.
1870. April 26	E.	5	δ Leonis . .	11 0 53.07	−0.05	−0.05	−0.25	−0.17	0 52.60	7 12.23	+6 19.63	−.02
	E.	5	λ Draconis .	17 21.79	.06	.15	.70	.20	17 20.74	23 41.38	20.64	.00
	E.	7	β Leonis . .	36 7.57	. .	.09	.25	.22	36 7.01	42 26.49	19.48	+.08
	E.	7	γ Ursæ Maj. .	40 40.93	.09	.15	.41	.23	40 40.14	47 0.25	20.11	−.07
	E.	7	ο Virginis .	52 17.26	.12	.10	0.24	.24	52 16.68	58 36.13	19.45	+.06
	E.	6	4 Draconis .	11 59 48.90	.12	.46	1.19	− .26	59 46.99	6 8.69	21.70	−.16
	E.	7	α² Libræ . .	14 37 24.30	. .	.06	0.24	+ .02	37 24.02	43 42.74	18.72	+.02
	E.	7	β Ursæ Min. .	44 51.66	. .	.31	.91	+ .01	44 50.45	51 10.95	20.50	−.01
	E.	5	β Bootis . .	14 50 45.57	.10	.13	.31	.00	50 45.13	57 4.39	19.26	+.01
	E.	7	β Libræ . .	15 3 43.73	.15	.10	.24	− .01	3 43.38	10 2.11	18.73	+.07
	E.	7	μ¹ Bootis . .	13 17.57	.20	.25	.30	.02	13 17.00	19 36.27	19.27	−.04
	E.	7	α Coronæ Bor.	22 53.82	.21	.23	.27	.04	22 53.28	29 12.38	19.10	.00
	E.	7	α Serpentis .	31 34.80	.19	.17	−0.24	.05	31 34.34	37 53.17	18.83	+.09
	W.	5	ζ Ursæ Min. .	42 29.61	.21	.79	+1.17	.06	42 29.93	48 50.97	21.04	+.04
	W.	7	ε Coronæ Bor.	45 54.58	. .	.23	0.27	.07	45 54.55	52 13.70	19.15	−.03
	W.	4	β¹ Scorpii . .	51 35.39	.17	.10	.25	.08	51 35.46	57 54.15	18.69	+.01
	W.	5	Groom. 2320	15 59 41.16	. .	.28	.65	.09	59 41.44	6 1.40	19.96	+.06
	W.	7	τ Herculis .	16 9 32.17	.07	.10	.35	.11	9 32.31	15 51.70	19.39	−.02
	W.	5	η Draconis .	15 56.34	.06	.12	.51	.12	15 56.61	22 16.44	19.83	−.10
	W.	7	ζ Ophiuchi .	23 42.36	. .	.03	.24	.12	23 42.45	30 1.27	18.82	−.03
	W.	6	η Herculis .	16 36 8.33	−0.04	−0.05	+0.31	−0.13	36 8.46	38 27.76	+6 19.30	.00
April 30	W.	2	ι Draconis .	9 12 6.15	. .	0.00	+1.70	−0.02	12 7.83	18 19.87	+6 12.04	−.62
	W.	7	α Hydræ . .	14 59.36	. .	.00	+0.24	.03	14 59.57	21 12.12	12.55	+.07
	W.	5	β Cephei, S.P.	20 46.08	− .02	+ .02	− .70	.03	20 45.37	26 58.36	12.99	+.06
	W.	7	ε Leonis . .	32 15.66	.08	− .09	+ .26	.05	32 15.78	38 28.27	12.49	+.03
	W.	7	μ Leonis . .	39 9.56	.08	− .09	+ .27	.06	39 9.68	45 22.14	12.46	+.05
	W.	3	79 Drac., S. P.	45 2.00	. .	+ .11	− .83	.07	45 1.21	51 14.50	13.29	−.15
	W.	7	α Leonis . .	9 55 14.47	.11	− .10	+ .24	.08	55 14.53	1 27.14	12.61	−.05
	W.	4	32 Ursæ Maj. .	10 2 21.81	.08	.17	0.59	.09	2 22.14	8 34.35	12.21	+.01
	W.	7	9 Draconis .	17 46.74	− .02	− .07	1.02	.12	17 47.57	23 59.64	12.07	−.16
	W.	7	l Leonis . .	36 13.16	. .	.00	+0.24	.14	36 13.26	42 25.91	12.65	−.09
	W.	4	ι Cephei, S.P.	38 49.86	.00	.00	− .58	.15	38 49.13	45 2.49	13.36	−.40
	W.	7	α Ursæ Maj. .	10 49 29.29	+ .04	+ .08	+ .52	.16	49 29.73	55 42.01	12.28	−.10
	E.	7	δ Leonis . .	11 0 59.94	+ .02	+ .02	− .25	.17	0 59.54	7 12.18	12.64	−.11
	E.	5	δ Crateris .	6 39.22	. .	− .03	.24	.18	6 38.77	12 51.37	12.60	+.04
	E.	6	τ Leonis . .	15 3.83	. .	.06	.24	.19	15 3.34	21 15.87	12.53	+.05
	E.	4	λ Draconis .	17 30.35	− .11	.28	.70	.20	17 29.17	23 41.22	12.05	+.08
	E.	7	β Leonis . .	36 14.61	. .	.18	.25	.22	36 13.96	42 26.46	12.50	+.05
	E	7	γ Ursæ Maj. .	40 48.93	.23	.38	.41	.23	40 47.91	47 0.17	12.26	+.10
	E.	7	ο Virginis .	52 24.36	.29	0.26	0.24	.25	52 23.61	58 36.11	12.50	+.07
	E.	5	4 Draconis .	11 59 59.70	. .	1.10	1.19	.26	59 57.15	6 8.45	11.30	+.48
	E.	7	η Virginis .	12 7 4.55	−0.30	0.23	0.24	.26	7 3.82	13 16.31	12.49	+.10
	E.	6	κ Draconis .	12 21 47.81	. .	−0.76	−0.72	−0.29	21 46.04	27 57.78	+6 11.74	+.14

Each of the quantities in the column "*Obs'd Chron. Correction*" is equal to

$$\alpha - [T' + R\,(T' - T_0) + Bb + Cc]$$

which, for brevity, may be represented by n. Then we have

$$0 = -n + \varDelta T_0 + Aa + v$$

But as throughout this series of observations n is very large, we write

$$\varDelta T_0 = \theta + \delta\theta$$

and the equation just given becomes

$$0 = -n + \theta + \delta\theta + Aa + v$$

in which the absolute term, $-n + \theta$, may be made sufficiently small by choosing a suitable value of θ. Each star observed furnishes an equation of condition of this form, and from all the equations so obtained on any given night the values of $\delta\theta$ and a for that night have been found by the method of least squares.

The adopted values of T_0 and θ for each night, together with the equations of condition, normal equations, and resulting values of $\delta\theta$ and a, are as follows:

St. Louis, April 12, 1870.

Equations of Condition; 1st Group, 8^h to 10^h.

$$T_0 = 7^h\ 53^m\ 22^s \qquad \theta = +\,6^m\ 30^s.000$$

$$\begin{aligned}
&\text{s.}\\
0 &= -8.98 + \delta\theta + 0.529\,a\\
0 &= -7.75 + \delta\theta - 0.274\,a\\
0 &= -8.99 + \delta\theta + 0.462\,a\\
0 &= -0.75 + \delta\theta - 4.850\,a\\
0 &= -9.29 + \delta\theta + 0.734\,a
\end{aligned}$$

$$\begin{aligned}
&\text{s.}\\
0 &= -12.20 + \delta\theta + 2.760\,a\\
0 &= -8.64 + \delta\theta + 0.267\,a\\
0 &= -8.59 + \delta\theta + 0.232\,a\\
0 &= -8.82 + \delta\theta + 0.449\,a
\end{aligned}$$

Normal Equations.

$$\begin{aligned}
&\text{s.}\\
0 &= -74.01 + 9.00\,\delta\theta + 0.34\,a\\
0 &= -52.10 + 0.34\,\delta\theta + 32.56\,a
\end{aligned}$$

Hence

$$\begin{aligned}
& \quad\ \ \text{m.}\quad \text{s.}\\
\delta\theta &= +\ 0\quad 8.163\\
a &= +\ 0\quad 1.515\\
\varDelta T_0 &= +\ 6\quad 38.163 \pm 0^s.019
\end{aligned}$$

Equations of Condition; 2d Group, 15^h to 16^h.

$$T_0 = 14^h\ 53^m\ 22^s \qquad \theta = +\,6^m\ 30^s.000$$

$$\begin{aligned}
&\text{s.}\\
0 &= -8.65 + \delta\theta + 0.746\,a\\
0 &= -7.51 + \delta\theta + 0.017\,a\\
0 &= -4.83 + \delta\theta - 1.820\,a\\
0 &= -7.89 + \delta\theta + 0.223\,a
\end{aligned}$$

$$\begin{aligned}
&\text{s.}\\
0 &= -8.37 + \delta\theta + 0.530\,a\\
0 &= -8.45 + \delta\theta + 0.557\,a\\
0 &= -3.13 + \delta\theta - 3.120\,a\\
0 &= -8.95 + \delta\theta + 0.899\,a
\end{aligned}$$

Normal Equations.

$$\begin{aligned} 0 &= -\overset{\text{s.}}{57.78} + 8.00\,\delta\theta - 1.97\,a \\ 0 &= -6.97 - 1.97\,\delta\theta + 15.05\,a \end{aligned}$$

Hence

$$\begin{aligned} \delta\theta &= +\overset{\text{m.}}{0}\ \ \overset{\text{s.}}{7.582} \\ a &= +0\ \ 1.455 \\ \varDelta T_0 &= +6\ \ 37.582 \pm 0^{\text{s}}.018 \end{aligned}$$

ST. LOUIS, APRIL 23, 1870.

Equations of Condition.

$T_0 = 8^{\text{h}}\ 53^{\text{m}}\ 34^{\text{s}}$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{8.41} + \delta\theta - 4.850\,a \\ 0 &= -5.63 + \delta\theta + 0.734\,a \\ 0 &= -4.25 + \delta\theta + 2.760\,a \\ 0 &= -5.79 + \delta\theta + 0.267\,a \\ 0 &= -5.73 + \delta\theta + 0.232\,a \\ 0 &= -5.73 + \delta\theta + 0.449\,a \\ 0 &= -7.76 + \delta\theta - 2.600\,a \\ 0 &= -5.80 + \delta\theta + 0.469\,a \end{aligned}$$

$\theta = +6^{\text{m}}\ 20^{\text{s}}.000$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{6.74} + \delta\theta - 0.875\,a \\ 0 &= -5.81 + \delta\theta + 0.320\,a \\ 0 &= -5.37 + \delta\theta + 0.820\,a \\ 0 &= -6.82 + \delta\theta - 1.530\,a \\ 0 &= -5.74 + \delta\theta + 0.411\,a \\ 0 &= -6.45 + \delta\theta - 0.468\,a \\ 0 &= -7.72 + \delta\theta - 3.160\,a \end{aligned}$$

Normal Equations.

$$\begin{aligned} 0 &= -\overset{\text{s.}}{93.75} + 15.00\,\delta\theta - 7.02\,a \\ 0 &= +72.07 - 7.02\,\delta\theta + 53.24\,a \end{aligned}$$

Hence

$$\begin{aligned} \delta\theta &= +\overset{\text{m.}}{0}\ \ \overset{\text{s.}}{5.988} \\ a &= -0\ \ 0.564 \\ \varDelta T_0 &= +6\ \ 25.988 \pm 0^{\text{s}}.033 \end{aligned}$$

ST. LOUIS, APRIL 26, 1870.

Equations of Condition; 1st *Group,* 9^{h} *to* 12^{h}.

$T_0 = 8^{\text{h}}\ 53^{\text{m}}\ 40^{\text{s}}$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{3.83} + \delta\theta - 4.850\,a \\ 0 &= -1.38 + \delta\theta + 0.734\,a \\ 0 &= -0.12 + \delta\theta + 2.760\,a \\ 0 &= -1.71 + \delta\theta + 0.267\,a \\ 0 &= -1.61 + \delta\theta + 0.232\,a \\ 0 &= -1.54 + \delta\theta + 0.449\,a \\ 0 &= -1.49 + \delta\theta + 0.331\,a \\ 0 &= -4.09 + \delta\theta - 2.600\,a \end{aligned}$$

$\theta = +6^{\text{m}}\ 18^{\text{s}}.000$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{2.17} + \delta\theta - 0.875\,a \\ 0 &= -1.63 + \delta\theta + 0.320\,a \\ 0 &= -2.64 + \delta\theta - 1.530\,a \\ 0 &= -1.48 + \delta\theta + 0.411\,a \\ 0 &= -2.11 + \delta\theta - 0.468\,a \\ 0 &= -1.45 + \delta\theta + 0.493\,a \\ 0 &= -3.70 + \delta\theta - 3.160\,a \end{aligned}$$

Normal Equations.

$$\begin{aligned} 0 &= -\overset{\text{s.}}{30.95} + 15.00\,\delta\theta - 7.49\,a \\ 0 &= +42.64 - 7.49\,\delta\theta + 52.70\,a \end{aligned}$$

Hence

$$\begin{array}{rlll} & & \text{m.} & \text{s.} \\ \delta\theta & = + & 0 & 1.786 \\ a & = - & 0 & 0.555 \\ \varDelta T_0 & = + & 6 & 19.786 \pm 0^{\text{s}}.057 \end{array}$$

Equations of Condition; 2d Group, 14^{h} to 17^{h}.

$T_0 = 14^{\text{h}}\ 53^{\text{m}}\ 41^{\text{s}}$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{0.72} + \delta\theta + 0.838\,a \\ 0 &= -2.50 + \delta\theta - 2.130\,a \\ 0 &= -1.26 + \delta\theta - 0.052\,a \\ 0 &= -0.73 + \delta\theta + 0.746\,a \\ 0 &= -1.27 + \delta\theta + 0.017\,a \\ 0 &= -1.10 + \delta\theta + 0.223\,a \\ 0 &= -0.83 + \delta\theta + 0.530\,a \\ 0 &= -3.04 + \delta\theta - 3.120\,a \end{aligned}$$

$\theta = +6^{\text{m}}\ 18^{\text{s}}.000$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{1.15} + \delta\theta + 0.222\,a \\ 0 &= -0.69 + \delta\theta + 0.899\,a \\ 0 &= -1.96 + \delta\theta - 1.330\,a \\ 0 &= -1.39 + \delta\theta - 0.189\,a \\ 0 &= -1.83 + \delta\theta - 0.836\,a \\ 0 &= -0.82 + \delta\theta + 0.764\,a \\ 0 &= -1.30 + \delta\theta - 0.011\,a \end{aligned}$$

Normal Equations.

$$\begin{aligned} 0 &= -\overset{\text{s.}}{20.59} + 15.00\,\delta\theta - 3.43\,a \\ 0 &= +15.92 - 3.43\,\delta\theta + 19.81\,a \end{aligned}$$

Hence

$$\begin{array}{rlll} & & \text{m} & \text{s.} \\ \delta\theta & = + & 0 & 1.237 \\ a & = - & 0 & 0.590 \\ \varDelta T_0 & = + & 6 & 19.237 \pm 0^{\text{s}}.009 \end{array}$$

ST. LOUIS, APRIL 30, 1870.

Equations of Condition.

$T_0 = 8^{\text{h}}\ 53^{\text{m}}\ 48^{\text{s}}$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{0.04} + \delta\theta - 4.850\,a \\ 0 &= -0.55 + \delta\theta + 0.734\,a \\ 0 &= -0.99 + \delta\theta + 2.760\,a \\ 0 &= -0.49 + \delta\theta + 0.267\,a \\ 0 &= -0.46 + \delta\theta + 0.232\,a \\ 0 &= -1.29 + \delta\theta + 3.190\,a \\ 0 &= -0.61 + \delta\theta + 0.449\,a \\ 0 &= -0.21 + \delta\theta - 1.110\,a \\ 0 &= -0.07 + \delta\theta - 2.600\,a \\ 0 &= -0.65 + \delta\theta + 0.469\,a \\ 0 &= -1.36 + \delta\theta + 2.340\,a \end{aligned}$$

$\theta = +6^{\text{m}}\ 12^{\text{s}}.000$

$$\begin{aligned} 0 &= -\overset{\text{s.}}{0.28} + \delta\theta - 0.875\,a \\ 0 &= -0.64 + \delta\theta + 0.320\,a \\ 0 &= -0.60 + \delta\theta + 0.820\,a \\ 0 &= -0.53 + \delta\theta + 0.574\,a \\ 0 &= -0.05 + \delta\theta - 1.530\,a \\ 0 &= -0.50 + \delta\theta + 0.411\,a \\ 0 &= -0.26 + \delta\theta - 0.468\,a \\ 0 &= -0.50 + \delta\theta + 0.493\,a \\ 0 &= +0.70 + \delta\theta - 3.160\,a \\ 0 &= -0.49 + \delta\theta + 0.622\,a \\ 0 &= +0.26 + \delta\theta - 1.580\,a \end{aligned}$$

Normal Equations.

$$\begin{aligned} & \qquad \text{s.} \\ 0 &= -\ \ 9.61 + 22.00\,\delta\theta - \ 2.49\,a \\ 0 &= -14.56 - \ 2.49\,\delta\theta + 73.59\,a \end{aligned}$$

Hence

$$\begin{aligned} & \qquad \text{m.} \quad \text{s.} \\ \delta\theta &= +\ 0 \quad 0.461 \\ a &= +\ 0 \quad 0.214 \\ \varDelta T_0 &= +\ 6 \quad 12.461 \pm 0.^{s}031 \end{aligned}$$

These values of $\varDelta T_0$ apply to the sidereal chronometer Kessels and Dent No. 1287. But in the exchange of longitude signals the mean-time chronometer Dent No. 2748 was employed, and its corrections were determined every evening, both before carrying it to, and after bringing it back from, the telegraph-office, by comparing it with No. 1287 by the method of coincidence of beats. The comparisons on each night, together with the resulting expressions for the corrections of No. 2748, are as follows:

April 12.—When No. 1287 indicated $7^{h}\ 53^{m}\ 22^{s}$ its correction was $+\ 6^{m}38^{s}.163 \pm 0^{s}.019$, and when it indicated $14^{h}\ 53^{m}\ 22^{s}$ its correction was $+\ 6^{m}\ 37^{s}.582 \pm 0^{s}.018$. It was therefore gaining $0^{s}.0830$ per hour.

Chronometer Comparisons.

Before going to Telegraph-Office.		After returning from Telegraph-Office.	
No. 1287.	No. 2748.	No. 1287.	No. 2748.
h. m. s.	h. m. s.	h. m. s.	h. m. s.
10 11 14.0 =	8 53 36.0	14 39 32.0 =	13 21 10.0
14 20.5 =	56 42.0	42 39.0 =	24 16.5
17 25.0 =	59 46.0	45 43.0 =	27 20.0

Hence, if T is the sidereal time at the meridian of the transit instrument, and T' the time indicated by No. 2748, we have

$$T = T' + 1^{h}\ 24^{m}\ 36^{s}.575 + 9^{s}.783\,(T' - 11^{h}) \pm 0^{s}.018$$

April 23.—When No. 1287 indicated $8^{h}\ 53^{m}\ 34^{s}$ its correction was $+\ 6^{m}\ 25^{s}.988 \pm 0^{s}.033$; and when it indicated $8^{h}\ 53^{m}\ 40^{s}$ on April 26, its correction was $+\ 6^{m}\ 19^{s}.786 \pm 0^{s}.057$. It was therefore gaining $0^{s}.0861$ per hour.

Chronometer Comparisons.

Before going to Telegraph-Office.		After returning from Telegraph-Office.	
No. 1287.	No. 2748.	No. 1287.	No. 2748.
h. m. s.	h. m. s.	h. m. s.	h. m. s.
12 4 24.0 =	10 3 25.0	15 1 33.0 =	13 0 5.0
7 29.5 =	6 30.0	4 35.0 =	3 6.5
10 35.0 =	9 35.0	6 39.0 =	6 10.0

Hence

$$T = T' + 2^{h}\ 7^{m}\ 33^{s}.922 + 9^{s}.765\,(T' - 11^{h}) \pm 0^{s}.033$$

April 26.—When No. 1287 indicated $8^{\rm h}\ 53^{\rm m}\ 40^{\rm s}$ its correction was $+\ 6^{\rm m}\ 19^{\rm s}.786 \pm 0^{\rm s}.057$; and when it indicated $14^{\rm h}\ 53^{\rm m}\ 41^{\rm s}$ its correction was $+\ 6^{\rm m}\ 19^{\rm s}.237 \pm 0^{\rm s}.009$. It was therefore gaining $0^{\rm s}.0915$ per hour.

Chronometer Comparisons.

Before going to Telegraph-Office.						After returning from Telegraph-Office.					
No. 1287.			No. 2748.			No. 1287.			No. 2748.		
h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
12	9	31.0 =	9	56	45.0	14	22	33.0 =	12	9	25.0
	12	40.0 =	9	59	53.5		25	39.0 =		12	30.5
	15	42.0 =	10	2	55.0		28	39.0 =		15	30.0

Hence

$$T = T' + 2^{\rm h}\ 19^{\rm m}\ 15^{\rm s}.869 + 9^{\rm s}.862\ (T' - 11^{\rm h}) \pm 0^{\rm s}.030$$

April 30.—When No. 1287 indicated $8^{\rm h}\ 53^{\rm m}\ 40^{\rm s}$, on April 26, its correction was $+\ 6^{\rm m}\ 19^{\rm s}.786 \pm 0.^{\rm s}057$; and when it indicated $8^{\rm h}\ 53^{\rm m}\ 48^{\rm s}$, on April 30, its correction was $+\ 6^{\rm m}\ 12^{\rm s}.461 \pm 0.^{\rm s}031$. It was therefore gaining $0^{\rm s}.0763$ per hour.

Chronometer Comparisons.

Before going to Telegraph-Office.						After returning from Telegraph-Office.					
No. 1287.			No. 2748.			No. 1287.			No. 2748.		
h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
12	27	10.5 =	9	58	40.0	14	56	25.0 =	12	27	30.0
	30	16.0 =	10	1	45.0	14	59	30.0 =		30	34.5
	33	21.5 =		4	50.0	15	2	34.0 =		33	38.0

Hence

$$T = T' + 2^{\rm h}\ 34^{\rm m}\ 52^{\rm s}.701 + 9^{\rm s}.801\ (T' - 11^{\rm h}) \pm 0^{\rm s}.031$$

Collecting our results, we have the expressions given in Table V for the corrections which must be applied to the time indicated by the face of the mean-time chronometer Dent No. 2748 in order to reduce it to sidereal time at the meridian of the transit instrument. T' is the time indicated by the chronometer at the instant for which the correction is required, and the quantities after the sign ± are approximately the probable errors.

TABLE V.—*Corrections to the Chronometer Dent No.* 2748.

Date.		Correction.					
		h.	m.	s.	s.	h.	s.
April	12	+ 1	24	36.575	+ 9.783	(T' − 11.00)	± 0.018
	23	+ 2	7	33.922	+ 9.765	(T' − 11.00)	± 0.033
	26	+ 2	19	15.869	+ 9.862	(T' − 11.00)	± 0.030
	30	+ 2	34	52.701	+ 9.801	(T' − 11.00)	± 0.031

VI.—PERSONAL EQUATION.

In the beginning of August, 1870, Professor Eimbeck came to Washington, bringing with him his sidereal chronometer Kessels and Dent No. 1287, and his portable transit instrument C. S. No. 7. The latter was soon mounted on the collimator pier to the north of the transit circle and our relative personal equation was determined in the following manner: Professor Eimbeck and I made observations for time simultaneously, he using his own chronometer and portable transit instrument, and I using the transit circle, the Kessels clock, and chronograph. As far as possible we both employed the same stars. At the conclusion of each night's work he took my observing-key, and, by tapping upon it in coincidence with the beats of his chronometer, recorded upon the chronograph connected with the Kessels clock a series of signals similar to those which he sent from St. Louis when making telegraphic comparisons of time for difference of longitude. The correction necessary to reduce the local time determined by him to that determined by myself thus became known, and as his instrument and mine were in precisely the same meridian, this correction is evidently the required personal equation.

The observations for time made at Washington with the transit circle are given in Table VI, the arrangement of which is similar to that of Table II. The values of the constants employed during each night are as follows;

Date.	*c*	*b*	*a*
	s.	s.	s.
August 5	+ 0.04	− 0.21	− 0.02
8	+ .05	− .24	− .01
12	+ .05	− .23	− .03
15	0.00	− 0 27	− 0.24

TABLE VI.—*Transits of Stars Observed at Washington with the Transit Circle to determine the Corrections to the Kessels Sidereal Clock.*

Date.	Star.	Observer.	No. of Wires.	Time of Transit over Mean of Wires.	*Cc*	*Bb*	*Aa*	Correction for Instrument.	Corr. Transit.	Adopt'd Right Ascension.	Obs'd Clock Correction.	*v*
1870.				h. m. s.	s.	s.	s.	s.	s.	s.	s.	s.
Aug. 5	κ Ophiuchi . .	Ha.	9	16 52 15.60	+0.04	−0.19	−0.01	−0.16	15.44	32.49	−42.95	−.10
	d Herculis . .	Ha.	9	16 57 33.11	.05	.25	.00	.20	32.91	49.75	43.16	+.10
	μ^1 Sagittarii . .	Ha.	9	18 6 44.63	.04	0.11	− .02	0.09	44.54	1.49	43.05	.00
	δ Ursæ Minoris	Ha.	5	15 13.60	+ .67	−2.38	+ .25	−1.46	12.14	28.55	43.59	
	51 Cephei, S. P..	Ha.	5	18 39 8.75	− .83	+2.56	− .33	+1.40	10.15	27.94	42.21	
	γ Aquilæ . .	Ha.	9	19 40 50.04	+ .04	−0.19	.01	−0.16	49.88	6.91	42.97	−.08
	β Aquilæ . .	Ha.	9	49 41.06	0.04	0.18	− .01	0.15	40.91	57.82	43.09	+.05
	λ Ursæ Minoris	Ha.	4	19 55 55.55	2.11	7.14	+ .81	4.22	51.33	12.58	38.75	
	α^2 Capricorni .	Ha.	9	20 11 35.89	+0.04	−0.13	−0.02	−0.11	35.78	52.72	−43.06	+.02
Aug. 8	η Herculis . .	Ha.	9	16 39 11.42	+0.06	−0.31	0.00	−0.25	11.17	27.72	−43.45	−.03
	κ Ophiuchi . .	Ha.	9	16 52 16.10	.05	0.21	.00	.16	15.94	32.45	43.49	+.01
	ε Ursæ Minoris	Ha.	5	17 0 9.59	.37	1.29	+ .05	.87	8.72	25.49	43.23	
	α^1 Herculis . .	Ha.	9	9 28.43	.05	0.23	.00	.18	28.25	44.81	43.44	−.04
	44 Ophiuchi . .	Ha.	9	17 19 11.53	.05	0.12	− .01	0.08	11.45	27.94	43.51	+.03
	δ Ursæ Minoris	S.	7	18 15 11.70	+0.84	−2.72	+ .12	−1.76	9.94	27.54	42.40	
	51 Cephei, S. P..	S.	5	39 8.50	−1.03	+2.93	− .17	+1.73	10.23	29.17	41.06	
	β Lyræ . . .	S.	9	18 46 2.64	+0.06	−0.29	.00	−0.23	2.41	18.87	43.54	+.02
	κ Aquilæ . .	Ha.	9	19 30 39.67	.05	.17	− .01	.13	39.54	56.02	43.52	+.04
	γ Aquilæ . .	Ha.	9	40 50.52	.05	.21	.00	.16	50.36	6.91	43.45	−.03
	β Aquilæ . .	S.	9	49 41.48	0.05	0.20	— .01	0.16	41.32	57.82	43.50	−.02
	λ Ursæ Minoris	S.	4	19 55 58.82	+2.64	−8.16	+0.41	−5.11	53.71	10.65	−43.06	
Aug. 12	Polaris, S. P. .	S.	5	13 12 38.60	−2.07	+5.80	−0.98	+2.75	41.35	56.82	−44.53	
	α Virginis . .	F.	9	19 5.91	+0.05	−0.15	.02	−0.12	5.79	21.23	44.56	+.01
	ζ Virginis . .	F.	9	13 28 49.31	.05	.18	.02	.15	49.16	4.63	44.53	−.02
	ε Bootis. . .	F.	9	14 40 3.89	.06	.25	.01	.20	3.69	19.15	44.54	.01
	α^2 Libræ . . .	F.	9	44 26.97	.05	.14	− .03	.12	26.85	42.31	44.54	−.01
	β Bootis. . .	F.	9	14 57 48.23	.07	.30	.00	.23	48.00	3.37	44.63	+.08
	β Libræ . . .	F.	9	15 10 46.53	.05	.16	− .02	.13	46.40	1.87	44.53	−.02
	α^1 Herculis . .	Ha.	9	17 9 29.46	.05	.22	.01	.18	29.28	44.76	44.52	+.05
	α Ophiuchi . .	Ha.	9	29 40.32	.05	.21	.01	.17	40.15	55.68	44.47	.00
	μ Herculis . .	Ha.	9	17 42 8.61	.06	.26	.01	.21	8.40	23.93	44.47	.00
	μ^1 Sagittarii . .	Ha.	9	18 6 46.07	.05	0.12	− .03	0.10	45.97	1.44	44.53	+.06
	δ Ursæ Minoris	Ha.	5	15 11.60	.84	2.60	+ .37	1.39	10.21	26.22	43.99	
	ι Aquilæ . .	Ha.	9	28 54.62	.05	0.16	− .02	0.13	54.49	10.00	44.49	+.02
	α Lyræ . . .	Ha.	9	33 18.79	+0.06	−0.29	.00	−0.23	18.56	34.20	44.36	−.11
	51 Cephei, S. P..	S.	5	18 39 13.22	−1.05	+2.81	− .50	+1.27	14.49	30.77	43.72	
	δ Aquilæ . .	S.	9	19 19 43.36	+0.05	−0.19	.02	−0.16	43.20	58.73	44.47	−.08
	κ Aquilæ . .	S.	9	30 40.76	.05	.16	.02	.13	40.63	56.02	44.61	+.06
	γ Aquilæ . .	S.	9	40 51.61	0.05	0.21	−0.01	0.17	51.44	6.90	44.54	−.01
	λ Ursæ Minoris	S.	5	19 55 56.26	2.64	7.82	+1.22	3.96	52.30	7.82	44.48	
	ε Delphini . .	S.	9	20 27 47.08	0.05	0.21	−0.01	0.17	46.91	2.36	44.55	.00
	ι Pegasi . .	S.	9	21 16 51.49	.05	.23	.01	.19	51.30	6.79	44.51	−.04
	β Aquarii . .	S.	9	21 25 29.87	+0.05	−0.16	−0.02	−0.13	29.74	45.16	−44.58	+.03

TABLE VI.—*Transits of Stars Observed at Washington, &c.*—Continued.

Date.	Star.	Observer.	No. of Wires.	Time of Transit over Mean of Wires.	Cc	Bb	Aa	Correction for Instrument.	Corr. Transit.	Adopt'd Right Ascension.	Obs'd Clock Correction.	v
				h. m. s.	s.	s.	s.	s.	s.	s.	s.	s.
1870. Aug. 15	α Ophiuchi . .	E.	9	17 29 41.47	0.00	−0.25	−0.11	−0.36	41.11	55.63	−45.48	+.03
	μ Herculis . .	Ha.	9	42 9.52	.00	.30	.05	.35	9.17	23.88	45.29	−.06
	γ^2 Sagittarii . .	E.	9	17 58 15.44	.00	.11	.26	.37	15.07	29.67	45.40	−.04
	μ^1 Sagittarii . .	Ha.	9	18 6 47.19	.00	0.15	−0.22	.37	46.82	1.41	45.41	+.07
	δ Ursæ Minoris	H.&E.	11	15 10.91	.00	3.06	+3.00	.06	10.85	25.30	45.55	
	1 Aquilæ . .	Ha.	9	28 55.69	.00	0.19	−0.18	.37	55.32	9.98	45.34	.00
	α Lyræ . . .	E.	9	33 19.88	.00	−0.35	0.00	.35	19.53	34.15	45.38	−.05
	51 Cephei, S. P..	H.&E.	11	39 18.31	.00	+3.29	−4.01	.72	17.59	31.82	45.77	
	β Lyræ . . .	Ha.	9	18 46 4.49	.00	−0.32	0.03	.35	4.14	18.79	45.35	+.02
	ζ Aquilæ . .	E.	9	19 0 13.90	.00	.25	.11	.36	13.54	28.09	45.45	.02
	δ Aquilæ . .	Ha.	9	19 44.41	.00	.22	.14	.36	44.05	58.71	45.34	.01
	κ Aquilæ . .	E.	9	30 41.83	.00	.19	.17	.36	41.47	56.01	45.46	+.04
	γ Aquilæ . .	Ha.	9	40 52.53	.00	.24	.12	.36	52.17	6.89	45.28	−.04
	α Aquilæ . .	E.	9	19 45 14.37	0.00	−0.24	−0.12	−0.36	14.01	28.60	−45.41	−.01

Assuming $T_0 = 16^h\ 0^m$ by face of the Kessels clock, and $\theta = -\ 40^s.000$, the equations of condition, normal equations, and resulting values of $\delta\theta$ and R for each night are as follows:

WASHINGTON, AUGUST 5, 1870.

Equations of Condition.

$$
\begin{aligned}
& \qquad \text{s.} \\
0 &= +\,2.95 + \delta\theta + 0.87\,R \\
0 &= +\,3.16 + \delta\theta + 0.96\,R \\
0 &= +\,3.05 + \delta\theta + 2.11\,R \\
0 &= +\,2.97 + \delta\theta + 3.68\,R \\
0 &= +\,3.09 + \delta\theta + 3.83\,R \\
0 &= +\,3.06 + \delta\theta + 4.19\,R
\end{aligned}
$$

Normal Equations.

$$
\begin{aligned}
0 &= +\,18.28 + 6.00\,\delta\theta + 15.64\,R \\
0 &= +\,47.62 + 15.64\,\delta\theta + 51.90\,R
\end{aligned}
$$

Hence

$$
\begin{aligned}
& \qquad \text{s.} \\
\delta\theta &= -\,3.046 \\
R &= +\,0.0004 \\
\varDelta T_0 &= -\,43.046 \pm 0^s.022
\end{aligned}
$$

WASHINGTON, AUGUST 8, 1870.

On this evening observations were made by two persons, and therefore two values of $\varDelta T_0$ have been introduced in the equations.

Equations of Condition.

$$\begin{array}{l}
0 = +\overset{\text{s.}}{3.45} + \delta\theta + 0 + 0.65\,R \\
0 = +3.49 + \delta\theta + 0 + 0.87\,R \\
0 = +3.44 + \delta\theta + 0 + 1.16\,R \\
0 = +3.51 + \delta\theta + 0 + 1.32\,R \\
0 = +3.54 + 0 + \delta\theta''' + 2.77\,R \\
0 = +3.52 + \delta\theta + 0 + 3.51\,R \\
0 = +3.45 + \delta\theta + 0 + 3.68\,R \\
0 = +3.50 + 0 + \delta\theta''' + 3.83\,R
\end{array}$$

Normal Equations.

$$\begin{array}{l}
0 = +20.86 + 6.00\,\delta\theta + 0.00\,\delta\theta''' + 11.19\,R \\
0 = +7.04 + 0.00\,\delta\theta + 2.00\,\delta\theta''' + 6.60\,R \\
0 = +62.16 + 11.19\,\delta\theta + 6.60\,\delta\theta''' + 52.47\,R
\end{array}$$

Hence

$$\begin{array}{rl}
\delta\theta = & -\overset{\text{s.}}{3.475} \\
\delta\theta''' = & -3.518 \\
R = & -0.0011 \\
\varDelta T_0 = & -43.475 \pm \overset{\text{s.}}{0.010} \\
\varDelta T_0''' = & -43.518 \pm 0.014
\end{array}$$

WASHINGTON, AUGUST 12, 1870.

On this evening observations were made by three persons, and therefore three values of the clock correction have been introduced in the equations.

Equations of Condition.

$$\begin{array}{l}
0 = +\overset{\text{s.}}{4.56} + \delta\theta'' + 0 + 0 - 2.68\,R \\
0 = +4.53 + \delta\theta'' + 0 + 0 - 2.52\,R \\
0 = +4.54 + \delta\theta'' + 0 + 0 - 1.33\,R \\
0 = +4.54 + \delta\theta'' + 0 + 0 - 1.26\,R \\
0 = +4.63 + \delta\theta'' + 0 + 0 - 1.03\,R \\
0 = +4.53 + \delta\theta'' + 0 + 0 - 0.82\,R \\
0 = +4.52 + 0 + \delta\theta + 0 + 1.16\,R \\
0 = +4.47 + 0 + \delta\theta + 0 + 1.49\,R \\
0 = +4.47 + 0 + \delta\theta + 0 + 1.70\,R \\
0 = +4.53 + 0 + \delta\theta + 0 + 2.11\,R \\
0 = +4.49 + 0 + \delta\theta + 0 + 2.48\,R \\
0 = +4.36 + 0 + \delta\theta + 0 + 2.56\,R \\
0 = +4.47 + 0 + 0 + \delta\theta''' + 3.33\,R \\
0 = +4.61 + 0 + 0 + \delta\theta''' + 3.51\,R \\
0 = +4.54 + 0 + 0 + \delta\theta''' + 3.68\,R \\
0 = +4.55 + 0 + 0 + \delta\theta''' + 4.46\,R \\
0 = +4.51 + 0 + 0 + \delta\theta''' + 5.28\,R \\
0 = +4.58 + 0 + 0 + \delta\theta''' + 5.42\,R
\end{array}$$

Normal Equations.

$$\begin{array}{l}
0 = +\ 27.33 + 6.00\,\delta\theta'' + 0.00\,\delta\theta + 0.00\,\delta\theta''' - 9.64\,R \\
0 = +\ 26.84 \quad 0.00\,\delta\theta'' + 6.00\,\delta\theta + 0.00\,\delta\theta''' + 11.50\,R \\
0 = +\ 27.26 \quad 0.00\,\delta\theta'' + 0.00\,\delta\theta + 6.00\,\delta\theta''' + 25.68\,R \\
0 = +\ 124.18 - 9.64\,\delta\theta'' + 11.50\,\delta\theta + 25.68\,\delta\theta''' + 156.33\,R
\end{array}$$

Hence

$$\begin{array}{ll}
\delta\theta'' & = -\overset{\text{s.}}{4.554} \\
\delta\theta & = -4.474 \\
\delta\theta''' & = -4.545 \\
R & = +0.0005 \\
\Delta T_0'' & = -44.554 \pm \overset{\text{s.}}{0.011} \\
\Delta T_0 & = -44.474 \pm 0.017 \\
\Delta T_0''' & = -44.545 \pm 0.014
\end{array}$$

WASHINGTON, AUGUST 15, 1870.

On this evening observations were made by two persons, and therefore two values of the clock correction have been introduced in the equations.

Equations of Condition.

$$\begin{array}{l}
0 = +\overset{\text{s.}}{5.48} + \delta\theta' + 0 + 1.50\,R \\
0 = +5.29 + 0 + \delta\theta + 1.70\,R \\
0 = +5.40 + \delta\theta' + 0 + 1.97\,R \\
0 = +5.41 + 0 + \delta\theta + 2.11\,R \\
0 = +5.34 + 0 + \delta\theta + 2.48\,R \\
0 = +5.38 + \delta\theta' + 0 + 2.56\,R \\
0 = +5.35 + 0 + \delta\theta + 2.77\,R \\
0 = +5.45 + \delta\theta' + 0 + 3.00\,R \\
0 = +5.34 + 0 + \delta\theta + 3.33\,R \\
0 = +5.46 + \delta\theta' + 0 + 3.51\,R \\
0 = +5.28 + 0 + \delta\theta + 3.68\,R \\
0 = +5.41 + \delta\theta' + 0 + 3.75\,R
\end{array}$$

Normal Equations.

$$\begin{array}{l}
0 = +\ 32.58 + 6.00\,\delta\theta' + 0.00\,\delta\theta + 16.29\,R \\
0 = +\ 32.01 + 0.00\,\delta\theta' + 6.00\,\delta\theta + 16.07\,R \\
0 = +\ 174.11 + 16.29\,\delta\theta' + 16.07\,\delta\theta + 93.86\,R
\end{array}$$

Hence

$$\begin{array}{ll}
\delta\theta' & = -\ \overset{\text{s.}}{5.465} \\
\delta\theta & = -\ 5.370 \\
R & = +\ 0.0129 \\
\Delta T_0' & = -45.465 \pm \overset{\text{s.}}{0.010} \\
\Delta T_0 & = -45.370 \pm 0.013
\end{array}$$

The observations for time made at Washington by Professor Eimbeck with the portable transit instrument C. S. No. 7 are given in Table VII, the arrangement of which is similar to that of Table IV. These observations were reduced by Professor Keith of the Coast Survey, who adopted, throughout the whole series, $R = - 0^s.032$, and $c = + 0^s.547$ with lamp west. The latter constant was determined from measures made with the right-ascension micrometer of the transit circle; that instrument being used as a collimator to the portable transit instrument. As already explained, some of the right ascensions employed by Professor Keith differed slightly from those used at this Observatory, and on that account a few small changes have been made in his reductions by Mr. Frisby and myself.

TABLE VII.—*Transits of Stars Observed at Washington by Professor William Eimbeck with the Portable Transit Instrument C. S. No. 7, to determine the Corrections to the Sidereal Chronometer Kessels and Dent No. 1287.*

Date.	Lamp.	No. of Wires.	Star.	Time of Transit over Mean of Wires.	*b*	*Bb*	*Cc*	*r*	Corr. Transit.	Adop'd Right Ascension.	Obs'd Chron. Correction.	*v*
1870.				h. m. s.	s.	s.	s.	s.	m. s.	m. s.	m. s.	s.
Aug. 5	E.	3	ε Ursæ Min. .	16 4 13.32	+0.09	+0.48	− 4.08	+0.03	4 9.75	59 25.97	+55 16.22	+0.76
	E.	7	44 Ophiuchi .	23 10.53	.06	.03	0.60	.02	23 9.98	18 27.97	17.99	.02
	E.	6	ω Draconis .	42 29.12	.07	.17	1.52	+ .01	42 27.78	37 45.31	17.53	+ .08
	E.	7	γ Draconis .	16 58 20.28	.04	.06	0.89	.00	58 19.45	53 37.33	17.88	− .65
	E.	5	μ^1 Sagittarii .	17 10 43.62	. .	0.04	0.59	.00	10 43.07	6 1.50	18.43	− .43
	E.	4	δ Ursæ Min. .	19 21.20	.11	+1.25	− 9.30	.00	19 13.15	14 28.44	15.29	+ .44
	E.	5	51 Cephei, S.P.	17 42 57.81	.11	−1.34	+11.40	− .02	43 7.85	38 28.06	20.21	+ .44
	E.	5	δ Aquilæ . .	18 23 41.14	. .	+0.09	− 0.55	.04	23 40.64	18 58.74	18.10	− .16
	E.	7	κ Aquilæ . .	34 38.39	.11	.08	.55	.04	34 37.88	29 56.03	18.15	.18
	E.	6	γ Aquilæ . .	44 49.43	. .	.10	.56	.05	44 48.92	40 6.92	18.00	.07
	E.	7	α Aquilæ . .	18 49 11.02	. .	.10	.55	.05	49 10.52	44 28.61	18.09	.16
	E.?	7	α^2 Capricorni.	19 15 35.19	+0.11	+0.07	− 0.57	−0.06	15 34.63	10 52.72	+55 18.09	−0.11
Aug. 8	E.	7	β^1 Scorpii . .	15 2 38.51	. .	+0.01	− 0.58	+0.06	2 38.00	57 54.34	+55 16.34	+0.10
	E.	6	τ Herculis .	20 36.03	+0.02	.03	.80	.05	20 35.31	15 51.24	15.93	− .08
	E.	7	ζ Ophiuchi .	34 45.89	+ .03	.02	.56	.04	34 45.39	30 1.69	16.30	+ .08
	E.	7	η Herculis .	43 12.50	. .	+ .02	.71	.04	43 11.85	38 27.72	15.87	.07
	E.	7	κ Ophiuchi .	15 56 16.83	. .	.00	.56	.04	56 16.31	51 32.45	16.14	.09
	E.	6	*d* Herculis .	16 1 34.50	. .	− .03	0.66	.03	1 33.84	56 49.70	15.86	.14
	E.	4	ε Ursæ Min. .	4 17.18	− .07	.38	4.05	.03	4 12.79	59 25.50	12.71	+ .46
	E.	7	α^1 Herculis .	12 29.16	.08	.08	0.56	.03	12 28.55	8 44.81	16.26	− .08
	E.	7	44 Ophiuchi .	23 11.96	. .	− .04	− 0.60	.03	23 11.35	18 27.94	16.59	.11
	E.	3	Gr'm.966, S.P.	27 0.51	. .	+ .11	+ 2.10	.02	27 2.74	22 21.15	18.41	.54
	E.	6	α Ophiuchi .	33 40.08	.06	− .05	− 0.56	.02	33 39.49	28 55.72	16.23	− .04
	E.	6	ω Draconis .	42 31.92	.11	.26	− 1.52	+ .01	42 30.15	37 45.16	15.01	+0.18
	W.	7	γ Draconis .	16 58 20.79	.09	.14	+ 0.88	.00	58 21.53	53 37.25	15.72	−1.72
	W.	7	μ^1 Sagittarii .	17 10 44.36	. .	.03	0.59	.00	10 44.92	6 1.48	16.56	−0.11
	W.	3	δ Ursæ Min. .	19 10.24	.01	− .11	+ 9.24	.00	19 19.37	14 27.43	8.04	+1.10
	W.	4	51 Cephei, S.P.	17 43 15.74	− .04	+ .48	−11.34	− .01	43 4.87	38 29.28	24.41	+0.70
	W.	7	ζ Aquilæ . .	18 4 11.40	+ .01	.01	+ 0.56	.03	4 11.94	59 28.14	16.20	− .01
	W.	7	*d* Sagittarii .	14 46.86	. .	.01	.58	.03	14 47.42	10 3.95	16.53	+ .10
	W.	7	δ Aquilæ . .	23 41.88	.03	.02	.55	.04	23 42.41	18 58.74	16.33	− .06
	W.	7	κ Aquilæ . .	34 39.23	. .	.01	.55	.04	34 39.75	29 56.03	16.28	+ .12
	W.	7	γ Aquilæ . .	44 50.15	. .	.02	.56	.05	44 50.68	40 6.91	16.23	− .02
	W.	7	α Aquilæ . .	18 49 11.77	+0.02	+0.02	+ 0.55	−0.06	49 12.28	44 28.61	+55 16.33	−0.10
Aug. 12	E.	7	δ Ophiuchi .	15 12 20.33	−0.04	−0.03	− 0.55	+0.06	12 19.81	7 33.40	+55 13.59	+0.12
	E.	7	η Draconis .	27 3.49	− .01	− .02	1.16	.05	27 2.36	22 15.14	12.78	− .16
	E.	7	ζ Ophiuchi .	15 34 48.44	. .	.00	0.56	.05	34 47.93	30 1.61	13.68	−0.17
	E.	3	ε Ursæ Min. .	16 4 19.65	. .	+ .05	4.05	.03	59 15.68	59 24.86	9.18	+1.04
	E.	7	α^1 Herculis .	16 13 31.96	+0.03	+0.03	− 0.56	+0.03	13 34.46	8 44.75	+55 13.29	+0.03

TABLE VII.—*Transits of Stars Observed at Washington, &c.*—Continued.

Date.	Lamp.	No. of Wires.	Star.	Time of Transit over Mean of Wires.	*b*	*B b*	*C c*	*r*	Corr. Transit.	Adop'd Right Ascension.	Obs'd Chron. Correction.	*v*
1870.				h. m. s.	s.	s.	s.	s.	m. s.	m. s.	m. s.	s.
Aug. 12	E.	7	44 Ophiuchi	16 23 14.74	+0.02	+0.01	− 0.61	+0.03	23 14.17	18 27.89	+55 13.72	−0.09
	E.	7	α Ophiuchi	33 42.86	+ .03	+ .03	0.56	.02	33 42.35	28 55.68	13.33	+ .01
	E.	6	ω Draconis	42 34.22	− .04	− .10	1.52	+ .01	42 32.61	37 44.96	12.35	−0.04
	E.	7	γ Draconis	16 58 25.01	− .02	− .03	0.88	.00	58 24.10	53 37.15	13.05	−1.98
	E.	7	μ^1 Sagittarii	17 10 48.43	. .	+ .01	0.59	.00	10 47.85	6 1.44	13.59	+0.01
	E.	3	δ Ursæ Min.	19 29.99	+ .05	+ .57	− 9.24	.00	19 21.32	14 26.11	4.79	+1.30
	E.	2	51 Cephei, S.P.	42 56.32	+ .01	− .12	+11.34	− .02	43 7.52	38 30.78	23.26	−0.75
	E.	2	51 Cephei, S.P.	17 43 20.54	− .06	+ .73	−11.34	.02	43 9.91	38 30.78	20.87	+1.64
	W.	7	ζ Aquilæ	18 4 14.27	− .02	− .02	+ 0.56	.03	4 14.78	59 28.11	13.33	−0.08
	W.	7	δ Aquilæ	23 44.78	.00	.00	.55	.03	23 45.30	18 58.72	13.42	.01
	W.	7	κ Aquilæ	34 42.00	.00	.00	.55	.04	34 42.51	29 56.02	13.51	.02
	W,	7	γ Aquilæ	44 52.83	. .	.00	.56	.05	44 53.34	40 6.90	13.56	.20
	W.	7	α Aquilæ	49 14.50	. .	− .01	.55	.05	49 15.00	44 28.60	13.60	.23
	W.	7	β Aquilæ	18 53 43.83	. .	.01	.55	.05	53 44.32	48 57.81	13.49	.10
	W.	7	ε Delphini	19 31 48.44	− .02	.02	.56	.07	31 48.91	27 2.36	13.45	.10
	W.	6	α Cygni	19 41 48.88	−0.02	−0.03	+ 0.77	−0.08	41 49.54	37 2.62	+55 13.08	−0.07
Aug. 15	W.	7	η Herculis	15 43 16.34	−0.01	−0.01	+ 0.71	+0.04	43 17.08	38 27.58	+55 10.50	−0.10
	W.	7	κ Ophiuchi	15 56 21.03	. .	+ .03	0.56	.03	56 21.65	51 32.35	10.70	− .09
	W.	3	ε Ursæ Min.	16 4 12.34	+ .05	.26	4.05	.03	4 16.68	59 24.35	7.67	+ .28
	W.	7	44 Ophiuchi	23 16.26	. .	.04	0.60	.03	23 16.93	18 27.85	10.92	+ .05
	W.	7	α Ophiuchi	33 44.18	.14	.12	0.56	.02	33 44.88	28 55.61	10.73	− .08
	W.	7	ω Draconis	42 33.24	.09	.22	1.52	+ .02	42 35.00	37 44.79	9.79	0.07
	W.	7	γ Draconis	16 58 25.80	.08	.12	0.88	.00	58 26.80	53 37.07	10.27	2.00
	W.	7	μ^1 Sagittarii	17 10 49.97	. .	.05	.59	.00	10 50.61	6 1.41	10.80	0.14
	W.	7	η Serpentis	19 25.41	.11	+0.08	+ 0.55	.00	19 26.04	14 36.87	10.83	− .05
	W.	4	51 Cephei, S.P.	43 26.07	.12	−1.46	−11.34	− .01	43 13.26	38 31.84	18.58	+0.27
	E.	3	51 Cephei, S.P.	17 43 1.48	.20	−2.44	+11.34	.02	43 10.36	38 31.84	21.48	1.06
	E.	7	ζ Aquilæ	18 4 18.09	.25	+0.23	− 0.56	.02	4 17.74	59 28.09	10.35	0.08
	E.	7	*d* Sagittarii	14 53.79	.25	.14	.58	.03	14 53.32	10 3.93	10.61	.08
	E.	7	δ Aquilæ	23 48.66	. .	.19	.55	.03	23 48.27	18 58.71	10.44	.08
	E.	7	κ Aquilæ	34 45.99	.22	.15	.55	.04	34 45.55	29 56.01	10.46	.20
	E.	7	γ Aquilæ	44 56.86	. .	.10	.56	.04	44 56.45	40 6.89	10.44	+ .10
	E.	7	α Aquilæ	49 18.52	. .	.10	.55	.05	49 18.09	44 28.59	10.50	− .02
	E.	7	β Aquilæ	18 53 47.92	.19	0.10	0.55	.05	53 47.47	48 57.80	55 10.33	+ .17
	E.	2	λ Ursæ Min.	19 0 51.84	.10	3.41	29.05	.06	0 26.14	55 6.05	54 39.91	.58
	E.	7	μ Aquarii	50 30.75	. .	0.08	0.56	.08	50 30.19	45 40.78	55 10.59	.03
	E.	7	ν Cygni	19 57 12.74	+0.12	+0.16	− 0.72	−0.09	57 12.09	52 22.19	+55 10.10	+0.01

The adopted values of T_0 and θ for each night, together with the equations of condition, normal equations, and resulting values of $\delta\theta$ and a, are as follows:

WASHINGTON, AUGUST 5, 1870.

Equations of Condition.

$$
\begin{array}{l|l}
T_0 = 17^{\mathrm{h}}\ 4^{\mathrm{m}}\ 42^{\mathrm{s}} & \theta = +\ 55^{\mathrm{m}}\ 18^{\mathrm{s}}.000 \\
0 = +\ \overset{\mathrm{s.}}{1.78} + \delta\theta - 5.120\ a & 0 = -\ \overset{\mathrm{s.}}{2.21} + \delta\theta + 16.860\ a \\
0 = +\ 0.01 + \delta\theta + 0.971\ a & 0 = -\ 0.10 + \delta\theta + 0.584\ a \\
0 = +\ 0.47 + \delta\theta - 1.390\ a & 0 = -\ 0.15 + \delta\theta + 0.724\ a \\
0 = +\ 0.12 + \delta\theta - 3.600\ a & 0 = \quad 0.00 + \delta\theta + 0.481\ a \\
0 = -\ 0.43 + \delta\theta + 0.923\ a & 0 = -\ 0.09 + \delta\theta + 0.506\ a \\
0 = +\ 2.71 + \delta\theta - 12.520\ a & 0 = -\ 0.09 + \delta\theta + 0.802\ a
\end{array}
$$

Normal Equations.

$$
\begin{aligned}
0 &= +\ 2.02 + 12.00\ \delta\theta - 0.78\ a \\
0 &= -\ 82.06 - 0.78\ \delta\theta + 485.89\ a
\end{aligned}
$$

Hence

$$
\begin{aligned}
\delta\theta &= -\ \overset{\mathrm{m.}}{0}\ \ \overset{\mathrm{s.}}{0.158} \\
a &= +\ 0\ \ 0.169 \\
\varDelta T_0 &= +\ 55\ \ 17.842 \pm 0^{\mathrm{s}}.080
\end{aligned}
$$

WASHINGTON, AUGUST 8, 1870.

Equations of Condition.

$$
\begin{array}{l|l}
T_0 = 17^{\mathrm{h}}\ 4^{\mathrm{m}}\ 44^{\mathrm{s}} & \theta = +\ 55^{\mathrm{m}}\ 16^{\mathrm{s}}.000 \\
0 = -\ \overset{\mathrm{s.}}{0.34} + \delta\theta + 0.899\ a & 0 = +\ \overset{\mathrm{s.}}{0.99} + \delta\theta - 1.390\ a \\
0 = +\ 0.07 + \delta\theta - 0.189\ a & 0 = +\ 0.28 + \delta\theta - 3.600\ a \\
0 = -\ 0.30 + \delta\theta + 0.764\ a & 0 = -\ 0.56 + \delta\theta + 0.923\ a \\
0 = +\ 0.13 + \delta\theta - 0.011\ a & 0 = +\ 7.96 + \delta\theta - 12.520\ a \\
0 = -\ 0.14 + \delta\theta + 0.492\ a & 0 = -\ 8.41 + \delta\theta + 16.860\ a \\
0 = +\ 0.14 + \delta\theta + 0.101\ a & 0 = -\ 0.20 + \delta\theta + 0.433\ a \\
0 = +\ 3.29 + \delta\theta - 5.120\ a & 0 = -\ 0.53 + \delta\theta + 0.894\ a \\
0 = -\ 0.26 + \delta\theta + 0.421\ a & 0 = -\ 0.33 + \delta\theta + 0.584\ a \\
0 = -\ 0.59 + \delta\theta + 0.971\ a & 0 = -\ 0.28 + \delta\theta + 0.724\ a \\
0 = -\ 2.41 + \delta\theta + 3.530\ a & 0 = -\ 0.23 + \delta\theta + 0.481\ a \\
0 = -\ 0.23 + \delta\theta + 0.448\ a & 0 = -\ 0.33 + \delta\theta + 0.506\ a
\end{array}
$$

Normal Equations.

$$
\begin{aligned}
0 &= -\ 2.28 + 22.00\ \delta\theta + 6.20\ a \\
0 &= -\ 272.33 + 6.20\ \delta\theta + 500.77\ a
\end{aligned}
$$

Hence

$$
\begin{aligned}
\delta\theta &= -\ \overset{\mathrm{m.}}{0}\ \ \overset{\mathrm{s.}}{0.050} \\
a &= +\ 0\ \ 0.543 \\
\varDelta T_0 &= +\ 55\ \ 15.950 \pm \overset{\mathrm{s.}}{0.071}
\end{aligned}
$$

WASHINGTON, AUGUST 12, 1870.

Equations of Condition.

$T_0 = 17^{\mathrm{h}}\ 4^{\mathrm{m}}\ 47^{\mathrm{s}}$	$\theta = +\ 55^{\mathrm{m}}\ 13^{\mathrm{s}}.000$
s.	s.
$0 = -0.59 + \delta\theta + 0.676\,a$	$0 = -10.26 + \delta\theta + 16.860\,a$
$0 = +0.22 + \delta\theta - 0.836\,a$	$0 = -7.87 + \delta\theta + 16.860\,a$
$0 = -0.68 + \delta\theta + 0.764\,a$	$0 = -0.33 + \delta\theta + 0.433\,a$
$0 = +3.82 + \delta\theta - 5.120\,a$	$0 = -0.42 + \delta\theta + 0.584\,a$
$0 = -0.29 + \delta\theta + 0.421\,a$	$0 = -0.51 + \delta\theta + 0.724\,a$
$0 = -0.72 + \delta\theta + 0.971\,a$	$0 = -0.56 + \delta\theta + 0.481\,a$
$0 = -0.33 + \delta\theta + 0.448\,a$	$0 = -0.60 + \delta\theta + 0.506\,a$
$0 = +0.65 + \delta\theta - 1.390\,a$	$0 = -0.49 + \delta\theta + 0.540\,a$
$0 = -0.05 + \delta\theta - 3.600\,a$	$0 = -0.45 + \delta\theta + 0.473\,a$
$0 = -0.59 + \delta\theta + 0.923\,a$	$0 = -0.08 + \delta\theta - 0.140\,a$
$0 = +8.21 + \delta\theta - 12.520\,a$	

Normal Equations.

$$0 = -\ 11.92 + 21.00\,\delta\theta + 18.06\,a$$
$$0 = -433.16 + 18.06\,\delta\theta + 772.36\,a$$

Hence

$$\begin{array}{rl} & \text{m.}\quad \text{s.} \\ \delta\theta = & +\ 0\quad 0.087 \\ a = & +\ 0\quad 0.559 \\ \Delta T_0 = & +\ 55\quad 13.087 \pm 0^{\mathrm{s}}.109 \end{array}$$

WASHINGTON, AUGUST 15, 1870.

A preliminary reduction of the observations showed that there was something wrong about the adopted value of the collimation constant, and therefore a term involving a correction to it has been introduced in the equations of condition.

Equations of Condition.

$T_0 = 17^{\mathrm{h}}\ 4^{\mathrm{m}}\ 50^{\mathrm{s}}$	$\theta = +\ 55^{\mathrm{m}}\ 10^{\mathrm{s}}.000$
s.	s.
$0 = -0.50 + \delta\theta + 1.29\,\delta c - 0.011\,a$	$0 = -0.35 + \delta\theta - 1.03\,\delta c + 0.433\,a$
$0 = -0.70 + \delta\theta + 1.01\,\delta c + 0.492\,a$	$0 = -0.61 + \delta\theta - 1.06\,\delta c + 0.894\,a$
$0 = +2.33 + \delta\theta + 7.42\,\delta c - 5.120\,a$	$0 = -0.44 + \delta\theta - 1.00\,\delta c + 0.584\,a$
$0 = -0.92 + \delta\theta + 1.09\,\delta c + 0.971\,a$	$0 = -0.46 + \delta\theta - 1.01\,\delta c + 0.724\,a$
$0 = -0.73 + \delta\theta + 1.02\,\delta c + 0.448\,a$	$0 = -0.44 + \delta\theta - 1.02\,\delta c + 0.481\,a$
$0 = +0.21 + \delta\theta + 2.77\,\delta c - 1.390\,a$	$0 = -0.50 + \delta\theta - 1.01\,\delta c + 0.506\,a$
$0 = -0.27 + \delta\theta + 1.61\,\delta c - 3.600\,a$	$0 = -0.33 + \delta\theta - 1.01\,\delta c + 0.540\,a$
$0 = -0.80 + \delta\theta + 1.07\,\delta c + 0.923\,a$	$0 = +30.09 + \delta\theta - 52.89\,\delta c - 40.680\,a$
$0 = -0.83 + \delta\theta + 1.00\,\delta c + 0.663\,a$	$0 = -0.59 + \delta\theta - 1.01\,\delta c + 0.747\,a$
$0 = -8.58 + \delta\theta - 20.72\,\delta c + 16.860\,a$	$0 = -0.10 + \delta\theta - 1.32\,\delta c - 0.046\,a$
$0 = -11.48 + \delta\theta + 20.72\,\delta c + 16.860\,a$	

Normal Equations.

$$
\begin{aligned}
0 &= + 4.00 + 21.00\,\delta\theta - 44.08\,\delta c - 8.72\,a \\
0 &= - 1634.97 - 44.08\,\delta\theta + 3738.42\,\delta c + 2102.63\,a \\
0 &= - 1578.74 - 8.72\,\delta\theta + 2102.63\,\delta c + 2270.36\,a
\end{aligned}
$$

Hence

$$
\begin{array}{rcrl}
 & & \text{m.} & \text{s.} \\
\delta\theta &=& +0 & 0.274 \\
\delta c &=& +0 & 0.102 \\
a &=& +0 & 0.602 \\
\Delta T_0 &=& +\ 55 & 10.274 \pm 0^{s}.085 \\
c &=& +0 & 0.649
\end{array}
$$

Relative Personal Equation of Mr. Frisby and Professor Harkness.—If ΔT_0 represents the correction to the Kessels clock at any given instant, as determined by me; and $\Delta T_0''$, the same correction as determined by Mr. Frisby; then the observations of April 26 give,

$$\Delta T_0 = \Delta T_0'' + 0.^{s}163$$

and those of August 12 give,

$$\Delta T_0 = \Delta T_0'' + 0^{s}.080$$

The mean is,

$$\Delta T_0 = \Delta T_0'' + 0^{s}.121$$

which I adopt.

Relative Personal Equation of Professors Eimbeck and Harkness.—In any case in which it is desired to determine personal equation, suppose that a comparison of the time-pieces of the senior and junior observers shows that when the face of the former indicates the time T_s, the face of the latter indicates the time T_j; and let ΔT_s be the correction to the time-piece of the senior observer, as determined from his observations; ΔT_j, the correction to the time-piece of the junior observer, as determined from his observations; and m, the interval by which the junior observer notes the transit of an equatorial star later than the senior observer. Then, if ΔT_s and ΔT_j have been determined at the same meridian,

$$T_s + \Delta T_s = T_j + \Delta T_j + m$$

and hence

$$m = T_s - T_j + \Delta T_s - \Delta T_j$$

In the case of a single time-piece, if at any given instant its correction is $\Delta T_s'$ from the observations of the senior observer, and $\Delta T_j'$ from the observations of the junior observer, then

$$\Delta T_s' = \Delta T_j' + m$$

Considering all differences of longitude as essentially positive, if the senior observer occupies the $\left\{\begin{matrix}\text{western}\\ \text{eastern}\end{matrix}\right\}$ station, m, taken with regard to its proper sign, must be $\left\{\begin{matrix}\text{added to}\\ \text{subtracted from}\end{matrix}\right\}$ the observed difference of longitude in order to free it from the effects of personal equation.

Designating by T_s the time indicated by the Kessels clock, and by T_j the time indicated by the chronometer Kessels and Dent No. 1287; the comparisons of time-pieces, and the computation of m from the observations given above are as follows:

Comparisons of Time-Pieces to determine Personal Equation.

Date.	No. of Signals.	T_s		T_j	$T_s - T_j$
1870.		h. m. s.		h. m. s.	m. s.
August 5	37	21 10 12.45	=	20 14 11.66	+ 56 0.79
8	37	20 10 11.04	=	19 14 11.66	55 59.38
12	37	21 2 9.25	=	20 6 11.66	55 57.59
15	37	20 4 7.30	=	19 8 11.66	+ 55 55.64

Each line in the column "*No. of Signals*" gives the number of signals read from the chronograph-sheet, the mean of which furnished the comparison recorded on the same line.

Computation of the Value of m.

Date.	ΔT_s	ΔT_j	$\Delta T_s - \Delta T_j$	$T_s - T_j$	m
1870.	m. s.	m. s.	m. s.	m. s.	s.
August 5	− 0 43.04	+ 55 17.76	− 56 0.80	+ 56 0.79	− 0.01
8	0 43.48	55 15.88	55 59.36	55 59.38	+ 0.02
12	0 44.47	55 12.99	55 57.46	55 57.59	0.13
15	− 0 45.32	+ 55 10.21	− 55 55.53	+ 55 55.64	+ 0.11

The values of m apparently divide themselves into two groups—the results of the first two nights agreeing with each other, and the results of the last two nights agreeing with each other. However, as there is no reason for supposing that the observations on one night are better than those on another, I have adopted the general mean, which is

$$m = +0^s.062 \pm 0^s.025$$

As Professor Eimbeck occupied the western station during the exchange of longitude signals, this quantity must be subtracted from the observed difference of longitude in order to free it from personal equation.

VII.—EXCHANGE OF TIME-SIGNALS, AND RESULTING DIFFERENCE OF LONGITUDE.

The telegraph-line between Washington and St. Louis is made up entirely of wire stretched in the air, but, as it is 990 miles long, it cannot be worked in a single circuit. It was therefore divided into three circuits, and the signals were transmitted from each circuit to the next following by means of automatic repeaters, which were placed at Grafton and Cincinnati. The number of statute-miles of wire, exclusive of that on the magnets, and the amount of battery, in each circuit, were as follows:

Washington to Grafton, 335 miles: at Washington, 60 modified Grove cells coupled up for quantity in two parallel series of 30 cells each; at Grafton, 50 Grove cells.

Grafton to Cincinnati, 310 miles: 50 Grove cells at Grafton; 64 Grove cells at Cincinnati.

Cincinnati to St. Louis, 345 miles: 62 Grove cells at Cincinnati; 60 Grove cells at St. Louis.

The signals employed in determining the difference of longitude were made by breaking a closed galvanic circuit; a method which seems best because the magnets used in telegraphing are much more certain to open promptly when the circuit is broken than to close promptly when it is re-established. This is true of a circuit including only a single magnet, but it applies with far greater force when, as in the present case, the signals are transmitted through several circuits by means of repeaters.

As the observer at St. Louis had neither a clock, a break circuit chronometer, nor a chronograph, it was necessary to employ other means in making the telegraphic comparisons of time-pieces there. The plan adopted is fully explained in the

PROGRAMME FOR THE EXCHANGE OF LONGITUDE-SIGNALS.

1. Local sidereal time will be determined at each station by observing transits of stars in the usual manner.

As the telegraph-wires do not extend to the observing-station at St. Louis, whenever signals are to be exchanged it will be necessary for the observer there to go to the telegraph-office in the Merchant's Exchange, carrying with him a *mean-time* box-chronometer beating half-seconds. The distance between the observing-station and the telegraph-office is about one and a half miles, and to avoid the chance of undetected tripping of the chronometer while being carried, it must be compared with the standard sidereal chronometer each evening immediately before starting from, and immediately after returning to, the observing-station.

2. Every afternoon the observer at St. Louis will notify the observer at Washington as to the state of the weather, and if it is clear at both places arrangements will be made to exchange signals in the evening. The hour of making the exchange will necessarily depend very much upon the convenience of the telegraph company, but it will usually be practicable to obtain the use of the wires some time between 10 p. m. and midnight.

3. The telegraph-office in the Merchant's Exchange at St. Louis, and the United States Naval Observatory at Washington, having been put in communication, the observer at the former will ask the observer at the latter if he is ready to receive signals, and, upon getting an affirmative reply, the St. Louis observer will wait until his *mean-time* chronometer indicates 50 seconds, and then he will send a rattle by means of his break-circuit key. This rattle will consist of ten or fifteen dots made at the rate of about five per second. At the beginning of the next minute he will commence sending his first series of signals. This will consist of thirteen taps on his key, made in exact coincidence with the beats of his chronometer at 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, and 0 seconds; a pause of five seconds, and a rattle. At the beginning of the next minute he will commence sending his second series of signals. This will consist of eleven taps on his key, made in coincidence with the beats of his chronometer at 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 seconds; a pause of five seconds, and a rattle. At the beginning of the next minute he will commence sending his third series of signals. This will consist of thirteen taps on his key, made in coincidence with the beats of his chronometer at 0, 10, 20, 30, 40, 50, 0, 10, 20, 30, 40, 50, and 0 seconds; a pause of five seconds, and a rattle. The three series of signals, from the beginning of the first rattle to the end of the last rattle, will occupy about four minutes and twenty seconds; and immediately upon their

completion the observer at Washington will notify the observer at St. Louis whether or not they have been properly received. If they have not been, they will be repeated; if they have been, the observer at St. Louis will telegraph to the observer at Washington the hour and minute indicated by the chronometer at the beginning of the first series. The observer at St. Louis will of course preserve a record of the hour and minute indicated by the chronometer at the commencement of *each* of the series of signals.

These signals will all be transmitted to Washington, where they will record themselves upon the chronograph-sheet along with the beats of the Washington clock, and, as the probable error of a single signal is only about ± $0^s.034$, they will furnish a very accurate comparison of time-pieces.

4. As soon as the observer at Washington has been notified of the hour and minute corresponding to the beginning of the first series of signals from St. Louis, he will ask the observer there if he is ready to receive signals from Washington, and upon receiving an affirmative reply he will connect the Washington *sidereal* clock with the telegraph-line in such a manner that its pendulum will break the circuit for somewhat less than one-tenth of a second every time it passes the central point of its arc, thus making a break once every second. In addition, the beginning of each minute will be marked by a double break—that is, by a break interpolated midway between the break corresponding to 0 seconds and that corresponding to 1 second.

These signals will be transmitted to St. Louis and there rendered audible by means of a sounder so adjusted that its *back* stroke is much louder than its forward one. Sitting beside this sounder, and keeping his eye upon his mean-time chronometer, the observer at St. Louis will wait until the *back* stroke[1] of the sounder coincides with the beat of the chronometer; and when this occurs he will note the time indicated by the latter, and also the time of arrival of the *next following* double break. Three such coincidences will be recorded, and, as they occur at intervals of about three minutes, the time required for so doing will not generally exceed twelve minutes. As soon as the double break following the third coincidence has been received, the observer at St. Louis will open the circuit and ask the observer at Washington what hour and minute of his clock corresponded to the break in question. The observer at Washington having furnished the desired information, the two stations will bid each other "good night," and this will close the exchanges for the evening.

N. B.—Although there will generally be an uncertainty of three or four seconds as to the exact instant when the beat of the sounder coincides with that of the chronometer, still special care must always be taken to note whether the coincidence occurs at a whole or at a half-second beat of the chronometer.

The record of signals received at St. Louis, from Washington, on the evening of April 12, together with their reduction, is appended in order to show how the comparison of time-pieces is deduced from the coincidences of beats observed in the manner just described.

Coincidence of breaks with beats of chronometer. h.	m.	s.	Next following double break. s.
12	17	45.0	32.0
	20	44.5	31.5
	23	40.0	31.0 = $14^h\ 42^m\ 0^s.0$ Wash. Clock.

As the double break corresponds to 0 seconds of the Washington clock, if from the seconds of the time of coincidence of beats, (increased by 60 when necessary,) the seconds of the time of the next following double break are subtracted, the remainder will be the seconds indicated by the face of the Washington clock at the time of the coincidence of beats. Thus, for the first coincidence recorded above,

$$45^s.0 - 32^s.0 = 13^s.0$$

---

[1] The back stroke is used because it corresponds to the break. The forward stroke corresponds to the subsequent closing of the circuit.

The last recorded coincidence and double break give, not only the seconds of the Washington clock, but the hour and minute also; thus furnishing the means of supplying the hour and minute to each of the other coincidences. Applying this process to the record given above, we obtain:

Kessels Clock. h.	m.	s.		Chronometer Dent No. 2748. h.	m.	s.
14	35	13.0	=	12	17	45.0
	38	13.0	=		20	44.5
	41	9.0	=		23	40.0

If we let

$\varDelta\lambda$ = difference of longitude between two stations; west longitudes being taken as positive;

T_e = time by face of eastern clock when it sends a signal, and

T_w = time by face of western clock when that signal is received at the western station;

T'_w = time by face of western clock when it sends a signal, and

T'_e = time by face of eastern clock when that signal is received at the eastern station;

t = time occupied in the passage of a signal from one station to the other;

$\varDelta T_e$, $\varDelta T_w$, $\varDelta T'_e$, $\varDelta T'_w$ = respectively, the corrections necessary to reduce the times indicated by the faces of the eastern and western clocks to true local time at the instants T_e, T_w, T'_e, T'_w, then, neglecting personal equation, when the eastern clock sends and the signals are received at the western station, we have

$$\varDelta\lambda - t = (T_e - T_w) + (\varDelta T_e - \varDelta T_w)$$

and when the western clock sends, and the signals are received at the eastern station, we have

$$\varDelta\lambda + t = (T'_e - T'_w) + (\varDelta T'_e - \varDelta T'_w)$$

Hence

$$\varDelta\lambda = \frac{(T_e - T_w) + (T'_e - T'_w)}{2} + \frac{(\varDelta T_e - \varDelta T_w) + (\varDelta T'_e - \varDelta T'_w)}{2}$$

$$t = \frac{(T'_e - T'_w) - (T_e - T_w)}{2} + \frac{(\varDelta T'_e - \varDelta T'_w) - (\varDelta T_e - \varDelta T_w)}{2}$$

If the rates of the clocks are small, the second term in the expression for the value of t may usually be neglected.

The following are the results of the telegraphic comparisons of time-pieces, both at Washington and St. Louis, together with their reduction by means of the formulæ just given, used in connection with the data contained in the preceding pages. By way of explanation it is only necessary to remark that each line in the column headed "*No. of Signals*" gives the number of signals read off from the chronograph-sheet, the mean of which furnished the comparison recorded on the same line.

Comparisons of Time-Pieces obtained by reading off the Washington Chronograph-Sheets.

Date.	No. of Signals.	Kessels Clock at Washington.			Dent 2748 at St. Louis.			Means.						$T'_e - T''_w$		
1870.		h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
April 12	13	14	3	53.22 =	11	46	30.00									
	11		5	27.94 =		48	4.50	14	5	35.00 =	11	48	11.50	+ 2	17	23.50
	13		7	23.83 =		50	0.00									
April 23	13	14	36	52.50 =	11	36	30.00									
	11		38	27.79 =		38	5.00	14	38	34.45 =	11	38	11.67	+ 3	0	22.78
	13		40	23.06 =		40	0.00									
April 26	13	14	37	34.28 =	11	25	30.00									
	11		39	9.62 =		27	5.00	14	39	16.26 =	11	27	11.67	+ 3	12	4.59
	13		41	4.88 =		29	0.00									
April 30	13	14	59	13.83 =	11	31	30.00									
	11	15	0	49.12 =		33	5.00	15	0	55.78 =	11	33	11.67	+ 3	27	44.11
	13		2	44.39 =		35	0.00									

Comparisons of Time-Pieces obtained by observing Coincidences of Beats at St. Louis.

Date.	No. of Coinci-dences.	Kessels Clock at Washington.			Dent 2748 at St. Louis.			Means.						$T_e - T_w$		
1870.		h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
April 12	1	14	35	13.00 =	12	17	45.00									
	1		38	13.00 =		20	44.50	14	38	11.67 =	12	20	43.17	+ 2	17	28.50
	1		41	9.00 =		23	40.00									
April 23	1	14	47	39.00 =	11	47	15.00									
	1		50	45.00 =		50	20.50	14	50	44.67 =	11	50	20.17	+ 3	0	24.50
	1		53	50.00 =		53	25.00									
April 26	1	14	22	22.00 =	11	10	20.50									
	1		25	27.00 =		13	25.00	14	25	27.33 =	11	13	25.33	+ 3	12	2.00
	1		28	33.00 =		16	30.50									
April 30	1	14	44	11.00 =	11	16	30.00									
	1		47	17.00 =		19	35.50	14	47	15.00 =	11	19	33.50	+ 3	27	41.50
	1		50	17.00 =		22	35.00									

Clock and Chronometer Corrections at the Times of the Exchange of Signals, computed by means of the Formulæ contained in Tables III and V.

Date.	Kessels Clock at Washington.	Dent 2748 at St. Louis.	$\Delta T'_e - \Delta T'_w$	$\Delta T_e - \Delta T_w$
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
1870. April 12	− 0 0 1.995	+ 1 24 44.431	− 1 24 46.426	
	2.002	49.735		− 1 24 51.737
April 23	− 0 0 5.616	+ 2 7 40.138	− 2 7 45.754	
	5.623	42.114		− 2 7 47.737
April 26	− 0 0 7.188	+ 2 19 20.338	− 2 19 27.526	
	7.179	18.075		− 2 19 25.254
April 30	− 0 0 8.929	+ 2 34 58.122	− 2 35 7.051	
	8.926	55.896		− 2 35 4.822

Observed Values of the Difference of Longitude between Washington and St. Louis, and of the Time occupied in the passage of a Galvanic Signal between those Cities.

Date.	$\frac{1}{2}(T'_e - T'_w)$	$\frac{1}{2}(T_e - T_w)$	$\frac{1}{2}(\Delta T'_e - \Delta T'_w)$	$\frac{1}{2}(\Delta T_e - \Delta T_w)$	$\Delta\lambda$	t
1870.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	s.
April 12	+ 1 8 41.750	+ 1 8 44.250	− 0 42 23.213	− 0 42 25.868	+ 0 52 36.919	+ 0.155
23	1 30 11.390	1 30 12.250	1 3 52.877	1 3 53.868	36.895	.131
26	1 36 2.295	1 36 1.000	1 9 43.763	1 9 42.627	36.905	.159
30	+ 1 43 52.055	+ 1 43 50.750	− 1 17 33.526	− 1 17 32.411	+ 0 52 36.868	+ 0.190

The time occupied in the passage of a signal between the two cities seems to have varied considerably on different nights; probably owing to slight changes in the adjustments of the repeaters connecting the several circuits. Of course these observations give no clew to the speed of a galvanic wave propagated in a continuous conductor.

Taking the mean of the values of λ, we find that the observing-station at St. Louis is

$$0^h\ 52^m\ 36^s.897 \pm 0^s.007$$

west of the transit circle at Washington. This result requires two small corrections: 1st, for personal equation, Professor Eimbeck observing the transit of an equatorial star $0^s.062 \pm 0^s.025$ later than myself; and, 2d, to refer the difference of longitude to the center of the dome of this Observatory, that point being 77.8 feet $= 0^s.066$ east of the transit circle. Making these corrections, and having regard to the probable error of the personal equation, our final result is that

The Observing-Station at St. Louis, in the Washington University grounds, on St. Charles street, between Seventeenth and Eighteenth streets, is west of the center of the Dome of the United States Naval Observatory at Washington

$$0^h\ 52^m\ 36^s.90 \pm 0^s.026$$

Very respectfully,
WM. HARKNESS,
Professor of Mathematics, U. S. Navy.

Rear-Admiral B. F. SANDS, U. S. N.,
Superintendent U. S. Naval Observatory, Washington, D. C.

⁂

APPENDIX II.

REPORTS

ON

OBSERVATIONS OF ENCKE'S COMET

DURING ITS RETURN IN 1871.

BY

ASAPH HALL AND WM. HARKNESS,

PROFESSORS OF MATHEMATICS, U. S. NAVY.

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Encke's Comet as seen in the 9½-inch Equatorial on the nights of October 17, November 17, December 1, and December 2.

REPORT

OF

PROFESSOR ASAPH HALL, U. S. N.

REPORT OF PROFESSOR HALL, U. S. N.

UNITED STATES NAVAL OBSERVATORY,
Washington, January 15, 1872.

SIR: The motion of Encke's comet around the sun has given rise to many interesting investigations, and the results obtained are such as will doubtless lead, sooner or later, to a new and complete discussion of the observations, together with a new investigation of the theory of the comet. The following observations were made during the favorable return of the comet in 1871. They are divided into two parts. The first part consists of determinations of position, and in order to give a clear idea of the degree of accuracy attained, these observations are given in detail. The second part comprises the notes on the appearance of the comet in the telescope, and to these are added four drawings, made from sketches of the comet on October 17, November 17, and December 1 and 2. These drawings are intended to illustrate the changes of form that the comet underwent as it approached the sun.

§ 1.

The following observations of the position of the comet were made with the filar micrometer of the Equatorial of the Naval Observatory. The reticule of this micrometer consists of three parallel wires, with equatorial intervals of $12^s.4$, for observations of the difference of right ascension; and perpendicular to these are five parallel wires used for measuring differences of declination. The differences of right ascension were observed by means of a chronograph, the pen of which is worked by a sidereal clock. This clock is situated on the first floor of the Observatory, and for the sake of convenience, the time of the observation was taken from a sidereal chronometer, the second of which was compared with the clock on the chronograph-sheet, at the beginning and end of each observation. No attention is paid to the clock further than to keep its rate so small that the effect of the rate on the observed difference of right ascension is always insensible. In reading off the chronograph-sheet, the zero is assumed to be at the second of the clock nearest the zero second of the chronometer. This assumption introduces an error into the determination of the time of the observation, which will vary from $0^s.0$ to $0^s.5$; and, in the case of a comet or swiftly-moving body, a correction for the error of the zero is combined with the correction of the chronometer. The chronometer was compared on each night with the Kessels clock, the standard clock of the Observatory.

In what follows $\Delta\alpha$ and $\Delta\delta$ are the observed differences of right ascension and declination at the corresponding chronometer-time. The value of $\Delta\alpha$ is generally the mean of three wires, except in cases when the star and comet were so situated that it was inconvenient to observe all the wires, when only two wires were used. The value of $\Delta\delta$ is the result of a single bisection with the micrometer wire. The quantities under the head *Red.* are the reductions of the observed $\Delta\alpha$ and $\Delta\delta$ to the assumed chronometer-time of the observation, which is designated by *c*. These reductions have been computed from the ephemeris of the comet given by S. von Glasenapp, Astronomische Nachrichten, No. 1854, after the ephemeris had been corrected so as to represent very nearly the apparent motion of the comet. $\Delta_0\alpha$ and $\Delta_0\delta$ are the valuse of $\Delta\alpha$ and $\Delta\delta$ reduced to the chronometer time *c*; Δc is the correction of the chronometer on sidereal time; and $\Delta\rho$ is the correction for differential refraction. $r(\alpha)$ denotes the probable error of a difference of right ascension depending on an observation over a single wire, and $r(\delta)$ the probable error of a single bisection in declination. In the statement of the number of comparisons, the first number indicates the number of wires observed in right ascension, and the last the number of bisections in declination.

The positions of the stars of comparison are those which have been computed from the catalogues, no "systematic corrections" having been applied. The positions have been brought forward to 1871.0 by means of Peter's value of the constant of precession, and the reductions of the stars to apparent place have been computed from the quantities given in the American Ephemeris. These reductions are given for each date below the adopted mean position of the star.

It should be stated that in a few of the earlier observations, or until November 17, the point observed was the center of the figure of the comet, while in the later observations the nucleus of the comet was observed.

The objective of the Equatorial has an aperture of 9.6 inches, and a magnifying power of 132 was used in all the observations.

NOVEMBER 2.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
21 53 40.8	− 0 48.75	− 1.30	50.05	22 2 48.0	− 167.2	+ 7.2	− 160.0
55 18.7	− 0 48.75	− 0.63	49.38	4 50.0	− 181.3	+ 9.7	− 171.6
56 55.6	− 0 51.10	+ 0.03	51.07	6 27.0	− 189.4	+ 11.6	− 177.8
58 25.0	− 0 51.20	+ 0.64	50.56	8 9.0	− 188.2	+ 13.7	− 174.5
59 57.2	− 0 51.45	+ 1.27	50.18	9 55.0	− 189.4	+ 15.8	− 173.6

No. of Comparisons, (10.5.)

h. m. s. m. s. s. ′ ″ ″
$c = 21\ 56\ 51.5$ $\Delta_0\alpha = -\ 0\ 50.25 \pm 0.19$ $\Delta_0\delta = -\ 2\ 51.5 \pm 2.1$
$\Delta c = -\ 4\ 28.3$ $\Delta\rho = 0.00$ $\Delta\rho = -\ 0.0$
$r(\alpha) = \pm\ 0^s.61$ $r(\delta) = \pm\ 4''.6$

Star of Comparison, a.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	22 37 4.28	+ 37 7 41.1
Washington observations, (2) .	4.06	41.3
Adopted	22 37 4.13	+ 37 7 41.2
Reduction	+ 1.95	+ 23.9

NOVEMBER 6.

Chron. Time.	Δα	Red.	$\Delta_0 \alpha$	Chron. Time.	Δδ	Red.	$\Delta_0 \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 34 8.4	+ 0 49.73	− 6.56	43.17	23 43 46.0	− 442.4	− 11.7	− 454.1
36 10.6	+ 0 50.67	− 5.71	44.96	46 0.0	− 443.1	− 7.4	− 450.5
37 59.4	+ 0 50.23	− 4.96	45.27	48 15.0	− 459.6	− 3.1	− 462.7
39 41.0	+ 0 49.33	− 4.25	45.08	50 27.0	− 454.6	+ 1.2	− 453.4
41 28.7	+ 0 48.47	− 3.50	44.97	53 36.0	− 455.2	+ 5.3	− 449.9
58 49.3	+ 0 40.76	+ 3.75	44.51	56 10.0	− 468.2	+ 12.1	− 456.1
23 0 21.0	+ 0 40.00	+ 4.39	44.39				
1 45.3	+ 0 39.40	+ 4.98	44.38				
3 18.3	+ 0 38.30	+ 5.63	43.93				
4 45.3	+ 0 38.63	+ 6.23	44.86				

No. of Comparisons, (30.6.)

h. m. s. m. s. s. ′ ″ ″

$c = 22\ 49\ 50.7$ $\Delta_0 \alpha = +\ 0\ 44.55 \pm 0.15$ $\Delta_0 \delta = -\ 7\ 34.4 \pm 1.3$

$\Delta c = -\ 4\ 34.3$ $\Delta \rho = 0.00$ $\Delta \rho = -\ 0.0$

$r(\alpha) = \pm\ 0^s.79$ $r(\delta) = \pm\ 3''.1$

Star of Comparison, b.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	21 55 23.61	+ 34 40 54.7
Reduction	+ 1.54	+ 23.4

NOVEMBER 7.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	"	"	"
22 23 23.2	− 0 30.00	− 4.79	34.79	22 30 28.0	− 60.9	− 9.2	− 70.1
24 55.4	− 0 28.90	− 4.15	33.05	34 11.0	− 75.7	− 1.4	− 77.1
26 13.0	− 0 29.85	− 3.61	33.46	35 40.0	− 73.9	+ 1.7	− 72.2
27 28.3	− 0 30.10	− 3.08	33.18	37 18.0	− 68.2	+ 5.1	− 63.1
28 41.3	− 0 29.85	− 2.58	32.43	38 49.0	− 69.0	+ 8.3	− 60.7
40 54.7	− 0 35.95	+ 2.52	33.43				
42 14.7	− 0 37.70	+ 3.07	34.63				
43 36.1	− 0 36.20	+ 3.64	32.56				
44 57.1	− 0 37.55	+ 4.20	33.35				
46 19.2	− 0 39.45	+ 4.77	34.68				

No. of Comparisons, (20.5.)

h. m. s. m. s. s. ′ ″ ″
$c =$ 22 34 52.3 $\Delta_0\alpha = -$ 0 33.56 ± 0.19 $\Delta_0\delta = -$ 1 8.6 ± 2.0
$\Delta c = -$ 4 35.4 $\Delta\rho =$ 0.00 $\Delta\rho = -$ 0.0
$r(\alpha) = \pm\ 0^s.83$ $r(\delta) = \pm\ 4''.5$

Star of Comparison, c.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	21 46 47.91	+ 33 46 30.2
Reduction	+ 1.46	+ 23.1

NOVEMBER 8.

Chron. Time.	$\Delta\alpha$	Red.	$_0\alpha$	Chron. Time.	$\Delta\delta$	Red,	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	"	"	"
22 56 54.0	+ 0 21.45	− 4.31	17.14	23 4 19.5	+ 275.4	− 6.7	+ 268.7
58 5.4	+ 0 22.40	− 3.82	18.58	6 7.1	+ 273.4	− 2.7	+ 270.7
59 38.2	+ 0 21.65	− 3.18	18.47	9 26.3	+ 254.3	+ 4.8	+ 259.1
23 0 55.1	+ 0 21.20	− 2.65	18.55	11 15.1	+ 257.5	+ 8.9	+ 266.4
1 48.8	+ 0 19.50	− 2.28	17.24	12 50.3	+ 244.7	+ 12.5	+ 257.2
15 18.5	+ 0 14.50	+ 3.33	17.83				
16 33.8	+ 0 14.45	+ 3.84	18.29				
17 38.2	+ 0 13.30	+ 4.28	17.58				
18 52.6	+ 0 13.15	+ 4.79	17.94				

No. of Comparisons, (18.5.)

$c = 23^{h}\ 7^{m}\ 18^{s}.3$ $\quad \Delta_0 \alpha = +0^{m}\ 17^{s}.96 \pm 0^{s}.12$ $\quad \Delta_0 \delta = +4'\ 24''.4 \pm 1''.8$

$\Delta c = -4^{m}\ 36^{s}.2$ $\quad \Delta \rho = 0^{s}.00$ $\quad \Delta \rho = +0''.1$

$r(\alpha) = \pm 0^{s}.52$ $\quad r(\delta) = \pm 4''.0$

Star of Comparison, d.

Authority.	α	δ
	h. m. s.	° ′ ″
Washington observations, (3) .	21 35 47.62	+ 32 47 16.3
Reduction	+ 1.36	+ 22.7

NOVEMBER 10.

Chron. Time.	Δ α	Red.	Δ₀ α	Chron. Time.	Δ δ	Red.	Δ₀ δ
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 13 10.3	− 2 50.00	− 5.33	55.33	22 13 10.3	+ 146.9	− 33.8	+ 113.1
17 48.4	− 2 49.05	− 3.45	52.50	17 48.4	+ 124.6	− 21.9	+ 102.7
21 54.9	− 2 49.95	− 1.79	51.74	21 54.9	+ 132.8	− 11.3	+ 121.5
26 7.3	− 2 52.75	− 0.08	52.83	26 7.3	+ 129.6	− 0.5	+ 129.1
30 45.8	− 2 50.75	+ 1.80	48.95	30 45.8	+ 102.8	+ 11.4	+ 114.2
35 5.2	− 2 55.10	+ 3.55	51.55	35 5.2	+ 92.6	+ 22.5	+ 115.1
39 23.0	− 2 56.55	+ 5.30	51.25	39 23.0	+ 82.0	+ 33.6	+ 115.6

No. of Comparisons, (14.7.)

$c = 22^{h}\ 26^{m}\ 19^{s}.3$ $\quad \Delta_0 \alpha = -2^{m}\ 52^{s}.02 \pm 0^{s}.49$ $\quad \Delta_0 \delta = +1'\ 55''.9 \pm 2''.1$

$\Delta c = -4^{m}\ 38^{s}.7$ $\quad \Delta \rho = 0^{s}.00$ $\quad \Delta \rho = +0''.0$

$r(\alpha) = \pm 1^{s}.46$ $\quad r(\delta) = \pm 5''.4$

Star of Comparison, e.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	21 19 38.87	+ 30 55 13.2
Reduction	+ 1.21	+21.7

NOVEMBER 11.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 11 57.0	+ 3 32.03	− 7.41	24.62	22 11 57.0	+ 196.5	− 50.2	+ 146.3
18 43.7	+ 3 29.45	− 4.70	24.75	18 43.7	+ 192.9	− 31.9	+ 161.0
24 34.3	+ 3 26.13	− 2.36	23.77	24 34.3	+ 176.5	− 16.0	+ 160.5
32 1.8	+ 3 22.20	+ 0.62	22.82	32 1.8	+ 151.5	+ 4.2	+ 155.7
36 56.6	+ 3 21.23	+ 2.58	23.81	36 56.6	+ 140.8	+ 17.5	+ 158.3
41 38.2	+ 3 19.03	+ 4.46	23.49	41 38.2	+ 130.4	+ 30.2	+ 160.6
46 17.2	+ 3 17.60	+ 6.32	23.92	46 17.2	+ 114.3	+ 42.8	+ 157.1

No. of Comparisons, (20.7.)

h. m. s. m. s. s. ′ ″ ″
$c = 22\ 30\ 29.0$ $\Delta_0\alpha = +\ 3\ 23.88 \pm 0.17$ $\Delta_0\delta = +\ 2\ 37.1 \pm 1.3$
$\Delta c = -\ 4\ 40.2$ $\Delta\rho = 0.00$ $\Delta\rho = +\ 0.0$
$r(\alpha) = \pm\ 0^s.76$ $r(\delta) = \pm\ 3''.5$

Star of Comparison, f.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	21 3 41.58	+ 29 51 10.9
Reduction	+ 1.08	+ 20.8

NOVEMBER 17.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
23 1 57.4	− 1 6.70	− 2.53	9.23	23 1 57.4	+ 65.6	− 23.5	+ 42.1
5 10.5	− 1 7.50	− 1.40	8.90	5 10.5	+ 60.4	− 12.9	+ 47.5
7 52.6	− 1 8.53	− 0.44	8.93	7 52.6	+ 54.9	− 4.1	+ 50.8
10 34.9	− 1 10.40	+ 0.52	9.88	10 34.9	+ 34.0	+ 4.8	+ 38.8
13 15.3	− 1 10.43	+ 1.46	8.97	13 15.3	+ 32.4	+ 13.5	+ 45.9
15 52.3	− 1 11.00	+ 2.39	8.61	15 52.3	+ 29.7	+ 22.1	+ 51.8

No. of Comparisons, (18.6.)

h. m. s. m. s. s. ′ ″ ″
$c = 23\ 9\ 7.2$ $\Delta_0\alpha = -\ 1\ 9.09 \pm 0.12$ $\Delta_0\delta = +\ 0\ 46.2 \pm 1.4$
$\Delta c = -\ 4\ 49.7$ $\Delta\rho = 0.00$ $\Delta\rho = +\ 0.0$
$r(\alpha) = \pm\ 0^s.50$ $r(\delta) = \pm\ 3''.4$

Star of Comparison, g.

Authority.	α	δ
	h. m. s.	° ′ ″
Bessel	20 13 51.38	+ 22 35 40.7
Reduction	+ 0.74	+16.1

NOVEMBER 25.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 38 57.6	− 2 29.30	− 3.19	32.49	22 38 57.6	+ 291.5	− 36.8	+ 254.7
43 35.0	− 2 30.73	− 1.83	32.56	43 35.0	+ 280.3	− 21.2	+ 259.1
48 6.9	− 2 32.27	− 0.51	32.78	48 6.9	+ 264.4	− 5.9	+ 258.5
52 3.3	− 2 33.70	+ 0.64	33.06	52 3.3	+ 242.2	+ 7.4	+ 249.6
56 1.8	− 2 34.93	+ 1.80	33.13	56 1.8	+ 235.5	+ 20.8	+ 256.3
60 24.0	− 2 36.23	+ 3.08	33.15	60 24.0	+ 220.2	+ 35.6	+ 255.8

No. of Comparisons, (18.6.)

h. m. s. m. s. s. ′ ″ ″

$c = 22$ 49 51.4 $\Delta_0\alpha = -2$ 32.86 ± 0.08 $\Delta_0\delta = +4$ 15.7 ± 0.9

$\Delta c = -$ 5 0.6 $\Delta\rho =$ 0.00 $\Delta\rho = +$ 0.1

$r(\alpha) = \pm\ 0^s.35$ $r(\delta) = \pm\ 2''.3$

Star of Comparison, h.

Anthority.	α	δ
	h. m. s.	° ′ ″
Bessel	19 13 49.17	+ 11 47 51.0
Reduction	+ 0.54	+ 8.9

NOVEMBER 25.

Chron. Time.	$\Delta\alpha$	Red.	$\Delta_0\alpha$	Chron. Time.	$\Delta\delta$	Red.	$\Delta_0\delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 48 6.9	− 1 3.67	− 1.76	5.43	22 48 6.9	− 211.4	− 20.4	− 231.8
52 3.3	− 1 5.67	− 0.61	6.28	52 3.3	− 231.9	− 7.1	− 239.0
56 1.8	− 1 6.67	+ 0.55	6.12	56 1.8	− 243.7	+ 6.3	− 237.4
60 24.0	− 1 8.03	+ 1.83	6.20	60 24.0	− 254.4	+ 21.1	− 233.3

No. of Comparisons, (12.4.)

h. m. s. — m. s. s. — ′ ″ ″
$c = 22$ 54 9.0 — $\Delta_0 a = -1$ 6.01 ± 0.13 — $\Delta_0 \delta = -3$ 55.4 ± 1.1
$\Delta c = -$ 5 0.6 — $\Delta \rho$ 0.00 — $\Delta \rho = -$ 0.1
$r(a) = \pm 0^s.45$ — $r(\delta) = \pm 2''.3$

Star of Comparison, i.

Authority,	*a*	δ
	h. m. s.	° ′ ″
Bessel	19 12 21.01	+ 11 55 47.8
Reduction	+ 0.50	+ 8.9

NOVEMBER 26.

Chron. Time.	Δ *a*	Red.	$\Delta_0 \delta$	Chron. Time.	Δ δ	Red.	$\Delta_0 \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 21 51.3	− 0 54.77	− 1.81	56.58	22 21 51.3	− 475.7	− 21.3	− 497.0
24 14.0	− 0 55.80	− 1.13	56.93	24 14.0	− 477.6	− 13.3	− 490.9
26 49.4	− 0 56.97	− 0.39	57.36	26 49.4	− 497.1	− 4.6	− 501.7
29 14.2	− 0 57.70	+ 0.30	57.40	29 14.2	− 504.5	+ 4.4	− 500.1
32 3.5	− 0 58.07	+ 1.10	56.97	32 3.5	− 517.9	+ 12.9	− 505.0
34 59.7	− 0 58.97	+ 1.94	57.03	34 59.7	− 527.7	+ 22.8	− 504.9

No. of Comparisons, (17.6.)

h. m. s. — m. s. s. — ′ ″ ″
$c = 22$ 28 12.0 — $\Delta_0 a = -0$ 57.05 ± 0.08 — $\Delta_0 \delta = -8$ 19.9 ± 1.5
$\Delta c = -$ 5 1.8 — $\Delta \rho =$ 0.00 — $\Delta \rho = -$ 0.2
$r(a) = \pm 0^s.35$ — $r(\delta) = \pm 3''.6$

Star of Comparison, k.

Authority.	*a*	δ	Wt.
	h. m. s.	° ′ ″	
Bessel	19 5 24.56	+ 10 41 11.8	1
Lamont	24.84	7.0	1
Adopted	19 5 24.70	+ 10 41 9.4	
Reduction	+ 0.49	+ 8.1	

NOVEMBER 27.

Chron. Time.	Δ α	Red.	$\Delta_0 \alpha$	Chron. Time.	Δ δ	Red.	$\Delta_0 \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 28 27.8	+ 0 4.67	− 2.40	2.27	22 33 19.0	+ 113.1	− 12.3	+ 100.8
29 9.6	+ 0 4.30	− 2.20	2.10	34 41.9	+ 106.0	− 7.8	+ 98.2
29 55.0	+ 0 4.30	− 1.99	2.31	36 2.7	+ 105.7	− 3.3	+ 102.4
30 55.3	+ 0 3.80	− 1.71	2.09	37 37.3	+ 92.9	+ 2.0	+ 94.9
31 33.2	+ 0 3.90	− 1.53	2.37	39 26.0	+ 89.4	+ 8.0	+ 97.4
42 25.7	+ 0 0.77	+ 1.51	2.28	41 1.9	+ 86.9	+ 13.3	+ 100.2
43 13.0	+ 0 0.53	+ 1.73	2.26				
44 1.9	+ 0 0.60	+ 1.96	2.56				
44 57.6	+ 0 0.30	+ 2.22	2.52				
45 38.8	+ 0 0.00	+ 2.41	2.41				

No. of Comparisons, (30.6.)

$c = 22^h\ 37^m\ 1^s.8$ $\quad \Delta_0 \alpha = +0^m\ 2^s.32 \pm 0^s.03$ $\quad \Delta_0 \delta = +1'\ 39''.0 \pm 0''.7$

$\Delta c = -\ 5^m\ 3^s.9$ $\quad \Delta \rho = 0^s.00$ $\quad \Delta \rho = +\ 0''.0$

$r(\alpha) = \pm\ 0^s.17$ $\quad r(\delta) = \pm\ 1''.8$

Star of Comparison, l.

Authority.	α	δ	Wt.
	h. m. s.	° ′ ″	
Bessel	18 57 36.64	+ 9 10 52.7	1
Lamont	36.44	56.5	1
Lalande	36.64	59.9	½
Adopted.	18 57 36.56	+ 9 10 55.7	
Reduction	+ 0.48	+ 7.2	

NOVEMBER 29.

Chron. Time.	Δ α	Red.	$\Delta_0 \alpha$	Chron. Time.	Δ δ	Red.	$\Delta_0 \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 49 47.8	+ 2 42.13	− 3.08	39.05	22 49 47.8	+ 189.3	− 37.5	+ 151.8
53 51.3	+ 2 40.70	− 1.99	38.71	53 51.3	+ 174.6	− 24.2	+ 150.4
59 7.2	+ 2 39.40	− 0.58	38.82	59 7.2	+ 157.9	− 7.1	+ 150.8
23 4 22.2	+ 2 38.33	+ 0.83	39.16	23 4 22.2	+ 135.6	+ 10.0	+ 145.6
8 20.9	+ 2 37.43	+ 1.89	39.32	8 20.9	+ 122.3	+ 23.0	+ 145.3
12 14.6	+ 2 36.37	+ 2.94	39.31	12 14.6	+ 112.8	+ 35.7	+ 148.5

No. of Comparisons, (18.6.)

h. m. s.	m. s. s.	′ ″ ″
$c = 23\ \ 1\ \ 17.3$	$\Delta_0 \alpha = +\ 2\ \ 39.06 \pm 0.07$	$\Delta \delta = +\ 2\ \ 28.7 \pm 0.8$
$\Delta c = -\ \ 5\ \ 7.4$	$\Delta \rho = \ \ 0.00$	$\Delta \rho = +\ \ 0.1$
	$r(\alpha) = \pm\ 0^{s}.29$	$r(\delta) = \pm\ 1''.9$

Star of Comparison, m.

Authority.	α	δ	Wt.
	h. m. s.	° ′ ″	
Bessel	18 41 46.34	+ 6 31 8.8	1
Lamont	45.84	10.8	1
Schjellerup	46.10	9.4	2
Adopted	18 41 46.10	+ 6 31 9.6	
Reduction	+ 0.46	+ 5.4	

DECEMBER 1.

Chron. Time.	$\Delta \alpha$	Red.	$\Delta_0 \alpha$	Chron. Time.	δ	Red.	$\Delta_0 \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 36 10.3	+ 2 39.25	− 2.63	36.62	22 36 10.3	+ 169.9	− 32.4	+ 137.5
40 6.3	+ 2 37.67	− 1.61	36.06	40 6.3	+ 158.8	− 19.9	+ 138.9
44 16.5	+ 2 37.03	− 0.54	36.49	44 16.5	+ 144.2	− 6.7	+ 137.5
48 13.3	+ 2 35.97	+ 0.48	36.45	48 13.3	+ 134.6	+ 5.9	+ 140.5
52 55.8	+ 2 34.40	+ 1.69	36.09	52 55.8	+ 124.5	+ 20.9	+ 145.4
56 51.0	+ 2 33.83	+ 2.70	36.53	56 51.0	+ 112.2	+ 33.3	+ 145.5

No. of Comparisons, (17.6.)

h. m. s.	m. s. s.	′ ″ ″
$c = 22\ \ 46\ \ 22.2$	$\Delta_0 \alpha = +\ 2\ \ 36.37 \pm 0.07$	$\Delta_0 \delta = +\ 2\ \ 20.9 \pm 1.0$
$\Delta c = -\ \ 5\ \ 8.5$	$\Delta \rho = -\ \ 0.01$	$\Delta \rho = +\ \ 0.1$
	$r(\alpha) = \pm\ 0^{s}.28$	$r(\delta) = \pm\ 2''.5$

Star of Comparison, n.

Authority.	α	δ	Wt.
	h. m. s.	° ′ ″	
Lamont	18 29 18.07	+ 3 57 56.2	1
Reduction	+ 0.46	+ 4.0	

DECEMBER 2.

Chron. Time.	Δ α	Red.	Δ₀ α	Chron. Time.	Δ δ	Red.	Δ₀ δ
h. m. s.	m. s.	s.	s.	h. m. s.	"	"	"
22 39 45.8	− 0 8.63	− 2.11	10.74	22 43 29.0	− 300.2	− 14.6	− 314.8
40 43.0	− 0 8.73	− 1.87	10.60	44 48.4	− 307.3	− 10.5	− 317.8
41 40.0	− 0 9.13	− 1.63	10.76	46 1.8	− 313.3	− 6.6	− 319.9
42 42.0	− 0 9.13	− 1.37	10.50	47 23.6	− 316.6	− 2.3	− 318.9
51 39.5	− 0 11.35	+ 0.89	10.46	48 48.3	− 318.9	+ 2.1	− 316.8
52 44.6	− 0 11.80	+ 1.16	10.64	50 7.4	− 325.2	+ 6.2	− 319.0
53 40.4	− 0 11.95	+ 1.40	10.55				
54 40.6	− 0 12.05	+ 1.64	10.41				
55 38.2	− 0 12.60	+ 1.89	10.71				

No. of Comparisons, (18.6.)

h. m. s. m. s. s. ′ ″ ″

$c = 22$ 48 8.2 $\Delta_0 \alpha = -$ 0 10.60 ± 0.03 $\Delta_0 \delta = -$ 5 17.9 ± 0.5

$\Delta c = -$ 5 9.0 $\Delta \rho = +$ 0.02 $\Delta \rho = -$ 0.3

$r(\alpha) = \pm 0^s.13$ $r(\delta) = \pm 1''.2$

Star of Comparison, o.

Authority.	α	δ	Wt.
	h. m. s.	° ′ ″	
Bessel	18 25 58.43	+ 2 49 59.1	1
Schjellerup	58.50	53.7	2
Lamont	58.55	56.4	1
Adopted	18 25 58.50	+ 2 49 55.7	
Reduction	+ 0.47	+ 3.5	

DECEMBER 5.

Chron. Time.	Δ α	Red.	Δ₀ α	Chron. Time.	Δ δ	Red.	Δ₀ δ
h. m. s.	m. s.	s.	s.	h. m. s.	"	"	"
23 6 8.6	− 1 43.27	− 1.51	44.78	23 6 8.6	+ 207.0	− 19.2	+ 187.8
9 31.6	− 1 44.10	− 0.71	44.81	9 31.6	+ 184.9	− 9.1	+ 175.8
12 37.3	− 1 44.67	+ 0.02	44.65	12 37.3	+ 183.5	+ 0.2	+ 183.7
15 44.2	− 1 45.20	+ 0.75	44.45	15 44.2	+ 172.0	+ 9.5	+ 181.5
18 44.2	− 1 44.87	+ 1.44	43.43	18 44.2	+ 160.1	+ 18.6	+ 178.7

No. of Comparisons, (15.5.)

h. m. s.	m. s. s.	′ ″ ″
$c = 23\ \ 12\ \ 33.2$	$\Delta_{0} a = -1\ 44.42 \pm 0.18$	$\Delta_{0} \delta = +3\ 1.5 \pm 1.4$
$\Delta c = -\ \ 5\ \ 11.8$	$\Delta \rho = +\ \ 0.04$	$\Delta \rho = +\ \ 0.6$
	$r(a) = \pm 0^{s}.69$	$r(\delta) = \pm 3''.1$

Star of Comparison, *p*.

Authority.	a	δ	Wt.
	h. m. s.	° ′ ″	
Bessel	18 9 54.60	− 1 0 7.8	1
Schjellerup	54.25	7.1	2
Lamont	54.44	5.1	1
Adopted	18 9 54.38	− 1 0 6.8	
Reduction	+ 0.49	+ 1.8	

DECEMBER 7.

Chron. Time.	Δa	Red.	$\Delta_{0} a$	Chron. Time.	$\Delta \delta$	Red.	$\Delta_{0} \delta$
h. m. s.	m. s.	s.	s.	h. m. s.	″	″	″
22 57 27.9	− 2 56.87	− 1.10	57.97	22 57 27.9	− 171.8	− 14.2	− 186.0
23 2 37.4	− 2 59.87	+ 0.06	59.81	23 2 37.4	− 190.8	+ 0.8	− 190.0
6 59.3	− 2 60.70	+ 1.04	59.66	6 59.3	− 203.6	+ 13.4	− 190.2

No. of Comparisons, (9.3.)

h. m. s.	m. s. s.	′ ″ ″
$c = 23\ \ 2\ \ 21.5$	$\Delta_{0} \delta = -2\ 59.15 \pm 0.40$	$\Delta_{0} \delta = -3\ \ 8.7 \pm 0.9$
$\Delta c = -\ \ 5\ \ 11.9$	$\Delta \rho = +\ \ 0.05$	$\Delta \rho = -\ \ 0.6$
	$r(a) = \pm 1^{s}.19$	$r(\delta) = \pm 1''.6$

Star of Comparison, *q*.

Authority.	a	δ	Wt.
	h. m. s.	° ′ ″	
Lamont	18 0 9.07	− 3 14 56.9	1
Schjellerup	9.38	48.8	2
Lalande	9.58	48.8	1
Adopted	18 0 9.35	− 3 14 50.8	
Reduction	+ 0.51	+ 0.9	

Collecting the results, we have the following positions of the comet. The quantities given under the head *log p* × Δ are the logarithms of the parallactic coefficients, computed with a value of the solar parallax equal to 8″.85—the coefficient for α being expressed in seconds of time:

Date.		Washington M. T.			α			log p × Δ	δ				log p × Δ
1871.		h.	m.	s.	h.	m.	s.			°	′	″	
November	2	7	5	6	22	36	15.83	9.0402n	+	37	5	13.6	9.5130
	6	7	42	7	21	56	9.70	9.0745	+	34	33	43.7	9.8559
	7	7	23	14	21	46	15.81	9.0225	+	33	45	44.7	9.9203
	8	7	51	38	21	36	6.94	9.3058	+	32	52	3.5	0.0678
	10	7	2	52	21	16	48.06	9.1754	+	30	57	30.8	0.1248
	11	7	3	3	21	7	6.54	9.2518	+	29	54	8.8	0.1913
	17	7	17	50	20	12	43.03	9.5302	+	22	36	43.0	0.4996
	25	6	26	59	19	11	16.85	9.5765	+	11	52	15.6	0.6592
	25	6	31	16	19	11	15.50	9.5824	+	11	52	1.3	0.6613
	26	6	1	27	19	4	28.14	9.5521	+	10	32	57.6	0.6643
	27	6	6	17	18	57	39.36	9.5738	+	9	12	41.9	0.6813
	29	6	22	33	18	44	25.62	9.6151	+	6	33	43.8	0.7103
December	1	5	59	48	18	31	54.89	9.6109	+	4	0	21.2	0.7242
	2	5	57	37	18	25	48.39	9.6178	+	2	44	41.0	0.7306
	5	6	10	7	18	8	10.49	9.6472	—	0	57	2.9	0.7448
	7	5	52	5	17	57	10.76	9.6482	—	3	17	59.2	0.7498

Comparing the observations with the ephemeris of S. von Glasenapp, the following residuals are found, taken in the sense of the computed minus the observed place of the comet:

Date.		In α.			In δ.		
			m.	s.		′	″
November	2	—	0	57.28	+	18	37.3
	6	—	1	37.18	+	16	51.8
	7	—	1	45.50	+	16	1.0
	8	—	1	56.04	+	15	17.6
	10	—	2	18.07	+	13	19.3
	11	—	2	19.98	+	12	0.6
	17	—	2	58.55	+	3	24.2
	25	—	3	17.78	—	6	34.0
	25	—	3	17.65	—	6	34.3
	26	—	3	18.35	—	7	25.7
	27	—	3	18.39	—	8	23.2
	29	—	3	17.28	—	9	42.4
December	1	—	3	15.35	—	10	46.9
	2	—	3	13.74	—	11	15.3
	5	—	3	7.15	—	12	1.0
	7	—	3	1.78	—	11	57.2

§ 2.

The following are the notes and remarks on the search for the comet, and its appearance after discovery:

September 8.—A careful search was made for the comet, but nothing could be seen in the place predicted by S. von Glasenapp. The sweep was extended a degree or more on each side of the computed declination, and through several degrees in right ascension.

September 21.—Looked for Encke's comet after the moon set, and made a careful search, but saw nothing.

October 9.—Looked carefully for the comet but could not see it. It appears, however, from subsequent observations, that on this night I did not extend the search far enough in declination.

October 11.—On this night a faint object was found with the comet-seeker by Paymaster H. P. Tuttle, U. S. N.; but on account of the bad seeing and the distance of the object from the predicted place, it was not certainly recognized to be the comet. An observation of the 17th proved it to be so.

October 17.—The comet was found early in the evening, as soon as the twilight was gone. It was very faint, without nucleus, and was a loose, disjointed-looking object. It appeared to be about 5′ or 6′ in diameter, with a vague and indistinct outline. No attempt was made to obtain an accurate observation for position, but an instrumental position gave the following corrections to Glasenapp's ephemeris:

$$\Delta\alpha = -38^s \qquad \Delta\delta = -13'$$

October 18.—The comet was examined at 10 o'clock. It was very faint and diffuse, and no trace of a nucleus could be seen. On this night the comet passed over a star of the 11.12th magnitude. The light of the star did not appear to be sensibly dimmed by its passage through the comet.

An instrumental position confirmed the corrections of the ephemeris found on the preceding night.

November 2.—Determinations of position were begun on this day. The comet had no nucleus, and was very difficult to observe.

November 6.—The comet was still very difficult to observe, but there appeared to be a little condensation at the center.

November 7.—The comet difficult to observe. It was thought to be a little elongated.

November 11.—The comet is a little brighter to-night. It appears elongated in the direction of the sun.

November 17.—The comet decidedly easier to observe. It is elongated in the direction of the sun, and has a fan-like appearance. On the following side of the comet there is a condensation, and, apparently, the beginning of a nucleus.

November 18.—Observed the spectrum of the comet in Professor Harkness's spectroscope. There were two bands visible. One of these bands was quite bright; the other a faint one.

November 25.—The comet has more condensation than hitherto. The nucleus is on the following side, the comet being elongated in the direction of the sun.

November 29.—The comet is brighter to-night and better to observe. The nucleus is on the following side of the comet.

December 1.—The nucleus is on the following side of the comet. The coma is almost wholly on the preceding side of the nucleus, and there is scarcely a trace of any on the following side. To-night the matter of the coma appears to issue from the nucleus toward the preceding side and to fall over each way, like water in the jet of a fountain. The comet was barely visible to the naked eye at 7 o'clock.

December 2.—The comet was visible to the naked eye at $6^h\ 30^m$. The coma is mostly on the preceding side of the nucleus, and appears to flow out and fall over in curves. On the north preceding side there is a very bright part of the coma. The coma is a little on the following side of the nucleus to-night, but there it is very faint.

December 5.—The comet visible to the naked eye, and the telescope was set on it directly. It is diffuse, and the observation for position a little uncertain. The comet is so near the horizon that no very good idea can be got of its form. The coma, however, appears to be more on the following side of the nucleus than heretofore, although the most of it is still on the preceding side.

December 7.—The comet was visible to the naked eye at $6^h\ 10^m$. In the telescope it looked fuzzy and blurred so near the horizon. The observation for position was hurried, and is, therefore, uncertain.

I first saw this comet in 1858, and have observed it at four returns. My impression is that it has been fainter during its present return than I have ever seen it before, considering its distance from the earth and sun. At this return, however, the comet approached the sun at such a time that it was quite near the earth when at a considerable distance from the sun, and in the case of this comet the formula assumed for computing the intensity of the light may not be exactly correct.

The changes of form that this comet undergoes as it approaches the sun and recedes from it have been observed at many of its returns. The general fact appears to be that there is a condensation in the matter of the comet and the formation of a nucleus as it approaches its perihelion, and an expansion of the matter and disappearance of the nucleus as the comet recedes from the sun. This appearance was observed by Struve in 1828, and his micrometrical measurements put beyond doubt the reality of the phenomenon. To an observer who sees such changes going on the question will naturally occur whether his determinations of position made at different times and when the comet has such different forms are strictly comparable. It would appear that this should be carefully considered in any discussion of the motion of the comet.

DESCRIPTION OF THE DRAWINGS.

The drawings of the comet have been placed on the page in such a way that the top of the page represents the *preceding* direction, the bottom of the page the *following* direction, the right-hand side of the page the *south*, and the left-hand side the *north*.

On October 17 the comet was very nearly circular in form, with a vague and indistinct outline. It was nearly of a uniform brightness over its whole surface, and there was no indication of a nucleus.

On November 17 the comet was elongated, the nucleus or condensed part of the comet being on the extreme following side. At this time the nucleus did not appear to be the center of action in the matter of the comet, as it appeared on December 1 and 2.

On December 1 the nucleus of the comet was a round, well-defined spot, and under a power of 132 appeared to be about 25″ or 30″ in diameter. The matter of the comet appeared to flow out from this nucleus toward the preceding side, falling over in parabolic curves about equally toward the north and south. There was very little of the coma on the following side of the nucleus. My observation extended over half an hour, and I noticed no change in the form of the comet.

On December 2 the nucleus of the comet appeared as on the 1st, and the matter of the comet appeared to flow from it in a similar manner; but on this day by far the larger portion of the coma was on the north preceding side of the nucleus. The coma appeared more on the following side of the nucleus than at any time heretofore. A line passing through the nucleus and indicating the direction of the boundary of the coma on the following side would make an angle of about 15° with a circle of declination. The curved part of the coma on the north preceding side of the nucleus was very bright.

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Professor of Mathematics, U. S. Navy.

Rear-Admiral B. F. Sands, U. S. N.,
Superintendent U. S. Naval Observatory, Washington, D. C.

REPORT

OF

PROFESSOR WM. HARKNESS, U. S. N.

REPORT OF PROFESSOR HARKNESS, U. S. N.

UNITED STATES NAVAL OBSERVATORY,
Washington, February 1, 1872.

SIR: I have the honor to submit to you the following report in relation to a series of spectroscopic and polariscopic observations of Encke's Comet, made by me during the latter part of November and the beginning of December, 1871.

I.—DESCRIPTION OF INSTRUMENTS, AND METHOD OF OBSERVATION.

The *Telescope* employed was my equatorially-mounted portable achromatic refractor, of 3.01 inches clear aperture and 43.58 inches focus, made by Alvan Clark & Sons, of Cambridgeport, Massachusetts.

The *Spectroscope* was a single-prism instrument, which is fully described in my report on the total solar eclipse of August 7, 1869.[1] Its optical constants are as follows:

Small Telescope:	
Focal distance of object-glass	6.55 inches.
Clear aperture of object-glass	0.86 inch.
Diameter of field of view	5° 33′
Magnifying power	5.71 diameters.
Collimating Lens for Slit:	
Focal distance	6.52 inches.
Clear aperture	0.82 inch.
Collimating Lens for Micrometer:	
Focal distance	4.17 inches.
Clear aperture	0.82 inch.
Prism:	
Refracting angle	60° 8′
Dispersion from A to H_2	4° 5′
Minimum deviation of line D	47° 44′
Refractive index	1.613
Density	3.532

The magnifying power of this spectroscope, when used in connection with the 43½-inch telescope, is 38 diameters. The apparent length of the spectrum, as seen in the small telescope, is 23° 19′; or, in other words, it appears as a spectrum 4.12 inches long viewed at a distance of ten inches. Under favorable circumstances the line D is seen distinctly double.

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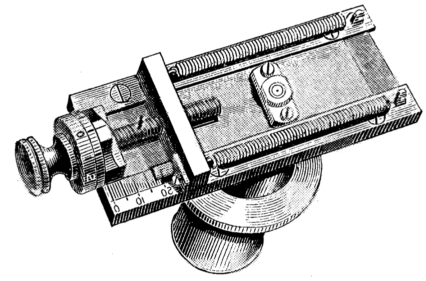
[1] Washington Observations for 1867, Appendix II, pp. 27–30.

Fig. 1.



As the spectrum of Encke's Comet was very faint, the photographed micrometer-scale of the spectroscope was removed, and the micrometer, shown in Fig. 1, was inserted in its place. This consists essentially of a micrometer-screw, which moves a brass plate pierced with a hole 0.00796 of an inch in diameter. The light passing through this hole is reflected from the surface of the prism and appears in the field of view of the spectroscope-telescope as a bright disk, with an apparent diameter of 36′ 55″, which can be made to traverse the whole length of the spectrum by turning the micrometer-screw. The illumination of the disk can be adjusted to the brightness of the spectrum under observation with the greatest nicety. If it is required to be very brilliant, the direct light of a lantern may be thrown into the hole; a less degree of brightness may be secured by passing the light through a piece of ground glass; and, finally, the luminosity may be varied down to absolute invisibility by reflecting the light into the hole from the back of the observer's hand held at a suitable angle. This last plan was employed in the case of the comet. The micrometer-head is half an inch in diameter, and divided to one-tenth of a revolution, while each complete revolution of the screw moves the brass plate 0.0181 of an inch, which corresponds to an angular distance of 14′ 40″.5. The apparent motion of the luminous disk in the field of view of the spectroscope-telescope is, therefore, 1° 23′ 48″ for each revolution of the screw, or 50″.3 for the hundredth part of a revolution; and the limit of reading on the micrometer-head is thus not far from the limit of visibility in the telescope.

In using this micrometer, the readings on the line whose place was to be determined were habitually made alternately with readings on a sodium-line produced by the flame of an alcohol-lamp with a salted wick held before the object-glass of the large telescope. The measures are thus entirely differential, and there is no risk of errors having been introduced by undetected changes of zero. It has been found convenient to assume that the reading of the sodium-line is always exactly 10.00 revolutions, and to apply the difference between this assumed reading and the actual reading, at any time, as a correction to all readings on other lines made at that time. From these corrected readings the wave-lengths of the corresponding lines can at once be deduced by means of a table which was constructed from the following observations of the principal lines in the solar spectrum:

TABLE I.—*Observations of Fraunhofer's Lines to determine the value of the Spectroscope Micrometer-Screw.*

Line.	Wave-Length.	Micrometer Reading.					
		Nov. 21.	Nov. 22.	Nov. 22.	Nov. 26.	Jan. 15.	Mean.
a	718.5	. .	. .	7.00	6.99	. .	7.00
B	686.7	. .	7.63	7.60	7.56	7.61	7.60
C	656.2	8.22	. .	. .	8.21	8.25	8.23
a	627.7	. .	. .	. .	. .	8.94	8.94
D	589.2	10.00	10.00	10.00	10.00	10.00	10.00
E	526.9	12.39	. .	12.36	12.35	12.36	12.36
b	517.4	12.81	. .	. .	12.78	12.81	12.80
F	486.1	. .	14.54	14.50	14.47	14.49	14.50
G	430.7	. .	. .	18.72	18.72	18.70	18.71
h	410.1	. .	. .	. .	20.87	20.91	20.89
H_1	396.8	. .	. .	22.57	22.55	22.57	22.56
H_2	393.3	. .	. .	23.08	23.03	23.11	23.07

The wave-lengths, which are expressed in millionths of a millimeter, are taken from Ångström's Atlas; and the observed micrometer readings have been corrected so as to make the reading of the sodium-line always 10.00 revolutions. The numbers contained in the second and eighth columns were employed to construct an interpolating curve, in the manner pointed out by Professor Pickering.[1] For that purpose a pair of rectangular co-ordinates were laid down; and then making vertical distances represent micrometer readings, and horizontal distances the squares of the reciprocals of the wave-lengths, a number of points were obtained, which necessarily lay very nearly in a straight line. A curve having been passed through these points, its abscissas were measured at the places whose ordinates corresponded to each half-revolution of the micrometer-screw, and from these measures the required wave-lengths were readily computed. For the ordinates the scale employed was one inch to each revolution of the micrometer-screw, and for the abscissas it was such that

$$\text{Log } \lambda = \frac{6.5 - \text{Log } x}{2}$$

in which λ is the wave-length, expressed in millionths of a millimeter, and x is the abscissa, expressed in inches. These scales were found quite sufficient to give the wave-lengths with as much accuracy as they can be observed in this instrument. The results are as follows:

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[1] Nature, 1870, Vol. III, p. 104.

TABLE II.—*For converting Corrected Readings of the Spectroscope-Micrometer into Wave-Lengths.*

Corrected Micrometer Reading.	Wave-Length.	Difference.	Corrected Micrometer Reading.	Wave-Length.	Difference.
r.			r.		7.5
6.0	788.9	36.8	15.5	469.8	7.1
6.5	752.1	31.5	16.0	462.7	6.6
7.0	720.6	28.4	16.5	456.1	6.3
7.5	692.2	24.9	17.0	449.8	5.9
8.0	667.3	22.7	17.5	443.9	5.7
8.5	644.6	20.2	18.0	438.2	5.4
9.0	624.4	18.4	18.5	432.8	5.1
9.5	606.0	16.8	19.0	427.7	5.0
10.0	589.2	15.6	19.5	422.7	4.9
10.5	573.6	13.8	20.0	417.8	4.5
11.0	559.8	12.5	20.5	413.3	4.2
11.5	547.3	11.9	21.0	409.1	4.2
12.0	535.4	11.2	21.5	404.9	3.8
12.5	524.2	10.6	22.0	401.1	3.7
13.0	513.6	10.0	22.5	397.4	3.6
13.5	503.6	9.3	23.0	393.8	3.3
14.0	494.3	8.7	23.5	390.5	3.2
14.5	485.6	8.3	24.0	387.3	
15.0	477.3	7.5			

The diameter of the luminous disk of the micrometer is equal to 0.44 of a revolution of the screw, and it was always used as the unit when estimating distances in the spectrum. The opening of the slit was measured by holding a sodium-flame before it and comparing the width of the resulting bright band with the diameter of the micrometer-disk. When they were equal the jaws were 0.0125 of an inch apart, as may be readily computed from the constants given above.

II.—OBSERVATIONS OF ENCKE'S COMET.

Table III contains all the measures of the spectrum of the comet which were obtained at this Observatory. The micrometer readings were invariably made on the brightest part of each band.

TABLE III.

Date.	Observer.	Width of Slit.	Observed Micrometer Reading.			Mean of Observed Mic. Reading.		
			Sodium Flame.	First Band.	Second Band.	Sodium Flame.	First Band.	Second Band.
		in.	r.	r.	r.	r.	r.	r.
1871. Nov. 18	Harkness . .	0.005	13.55	. .	17.3			
			.52	. .	.3			
			.52	. .	.2	13.53	. .	17.27
18	Hall . . .	. .	13.62	. .	17.2			
			.62	. .	.25			
			.60	. .	.2	13.61	. .	17.22
25	Harkness . .	0.020	10.16	. .	13.65			
					.55			
					.53			
					.71			
			10.16	. .	.45	10.16	. .	13.58
25	Hall	. .	. .	. .	13.63			
					.48			
					.40	. .	. .	13.50
26	Harkness . .	0.020	10.38	. .	13.95			
			.40	. .	.68			
			.42	. .	.80	10.40	. .	13.81
27	Harkness . .	0.022	10.42	. .	13.65			
			.44	. .	.67			
			.42	. .	.60			
			.43	. .	.62			
			.44	. .	.62	10.43	. .	13.63
29	Harkness . .	0.020	10.51	. .	13.68			
			.50	. .	.68			
			.50	. .	.70			
			.50	. .	.77			
			.50	12.3	.69	10.50	12.3	13.70
Dec. 1	Harkness . .	0.017	10.51	. .	13.57			
			.51	. .	.70			
			.51	11.95	.70			
			.49	.99	.62			
			.48	.80	.64	10.50	11.91	13.65
2	Harkness . .	0.020	10.50	. .	13.60			
			.50	. .	.55			
			.50	11.88	.68			
			.45	.95	.52			
			.49	.92	.61	10.49	11.92	13.59

The following are the notes which accompanied these observations:

November 18, 1871.—A fine moonless evening. Found the spectrum of Encke's Comet to consist of two bright bands, in each of which the light was most intense in the middle of its breadth, and shaded off toward the edges. The more refrangible band was certainly three or four times brighter than the other, and was about equal in breadth to the diameter of the micrometer-disk. The fainter band was, perhaps, a little narrower. No continuous spectrum was visible.

November 25.—Moon nearly full and atmosphere a little hazy; consequently, the spectrum of the comet was very difficult to observe, the bright band being excessively faint, and the other one not sufficiently visible to enable me to estimate its position satisfactorily. As the slit was gradually closed the bands slowly faded away without getting perceptibly narrower. In the large equatorial of 9½ inches aperture the comet appeared as a faint nebulous cloud, about four or five minutes in diameter, with a slight condensation at its center, but no trace of a nucleus.

November 26.—Moon nearly full, and the sky, in addition to being quite hazy, was covered with drifting clouds, between which the observations were made. The comet was very faint indeed, and its spectrum so dim that the less refrangible band was only visible by glimpses. Both last night and to-night I have seen a faint continuous spectrum, but it appears to be due to the moonlight, for it was found in all parts of the sky to which the telescope was pointed.

November 27.—A fine, clear evening, with the full moon about ten degrees high. The distance of the less refrangible band of the spectrum from the other was estimated to be two and a half times the diameter of the micrometer-disk. This makes its reading $13^r.63 - 2.5 \times 0^r.44 = 12^r.53$. The more refrangible band is certainly three times as bright as the other. The faint continuous spectrum from the moonlight in the sky is still visible.

November 29.—The evening was very clear and the observations were finished before the moon rose. The breadth of each of the bands composing the spectrum was the same, and about equal to the diameter of the micrometer-disk. The more refrangible band was certainly three or four times brighter than the other. No trace of a continuous spectrum was detected.

December 1.—A fine, clear, moonless evening. The comet was brighter than ever before, and just barely visible to the naked eye. In the 9½-inch equatorial it showed considerable condensation, which, however, was not central, but mostly on the side farthest from the sun. Upon a careful examination of the spectrum in an absolutely dark field, I discovered a third band, which I estimated to be more refrangible than either of the other two by about twice the interval between them. This makes its micrometer reading $13^r.65 + 2 \times 1^r.74 = 17^r.1$. If we designate the least refrangible as the first, the next as the second, and the most refrangible as the third; then calling the brightness of the third band unity, that of the second was approximately sixteen, and that of the first four. The brightest part of the first and second bands was altogether on the less refrangible side of their centers, and was about equal in breadth to the diameter of the micrometer-disk; while the total breadth of each band was about twice the diameter of that disk. The third band was of nearly uniform brightness throughout its whole breadth, which was also about twice the diameter of the micrometer-disk. Upon narrowing the opening of the slit, the bands did not become lines, but gradually faded out. I looked very carefully for a continuous spectrum, but am in doubt whether or not one existed.

I examined the comet closely for polarization, employing a comet-seeker of four inches aperture and a double-image prism, but no change in the relative brightness of the two images was perceptible on rotating the prism.

December 2.—A fine, clear, moonless evening, but the comet had an altitude of only twenty degrees and seemed scarcely so bright as it was yesterday. The third band in its spectrum was barely visible, and I did not even attempt to estimate its position. During all my observations of this comet I have fancied, at times, that it gave a faint continuous spectrum, but, upon looking carefully for it, I never could feel certain of its existence.

Table IV contains the final numerical results of the observations on the spectrum of the comet. The corrected micrometer readings were obtained by subtracting from the observed, or estimated, readings the quantity necessary to reduce the mean of the readings on the sodium-flame to 10.00 revolutions, as already explained. The wave-lengths are expressed in millionths of a millimeter, and have been taken from Table II, with the argument "Corrected micrometer reading."

TABLE IV.

Date.	Corrected Micrometer Reading.			Wave-Length.		
	First Band.	Second Band.	Third Band.	First Band.	Second Band.	Third Band.
1871.	r.	r.	r.			
Nov. 18	. .	13.68	. .	. .	500.2	
25	. .	.38	. .	. .	505.9	
26	. .	.41	. .	. .	505.4	
27	12.10	.20	. .	533.	509.6	
29	11.8	.20	. .	540.	509.6	
Dec. 1	.41	.15	16.6	549.5	510.6	455.
2	.43	.10	. .	549.0	511.6	

Perhaps the most remarkable feature about this series of observations is the continual increase in the wave-length of the light emitted by the brightest part of the second band of the spectrum. If the amount of the change had been small it might have been attributed to accidental errors in pointing the micrometer, but it is much too great to admit of such an explanation. Zöllner has shown that "the ratio of brightness of two adjacent places in the spectrum (of a gas) may be reversed by alterations of temperature, and a minimum appear in the place of a former maximum."[1] This is probably the key to the change in question. The comet was approaching the sun.

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[1] Zöllner on the Influence of Density and Temperature on the Spectra of Incandescent Gases. L. E. & D. Phil. Mag., 1871, Vol. 41, p. 199.

Its temperature must, therefore, have been increasing; and, in consequence of that increase, the character of its light was slightly modified. So far as I am aware, this is the first time that such a phenomenon has been observed in a celestial body.

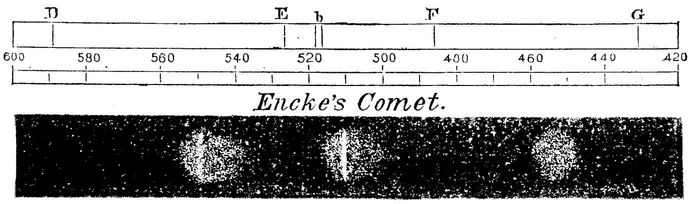
The comet was decidedly best seen on the evening of December 1; and, by the joint use of the micrometer readings and notes made on that occasion, Table V has been constructed. It gives the numerical data for the most important features of the spectrum, but it must be remembered that the positions of the *edges* of the bands were only estimated.

TABLE V.

	Encke's Comet.			Comet II, 1868.
	Relative Brightness.	Corrected Micrometer Reading.	Wave-Length.	Wave-Length.
		r.		
First Band	4			
Less Refrangible Edge . . .	.	11.19	555.	562.
Brightest Part	.	11.41	549.5	
More Refrangible Edge . . .	.	12.07	533.	542.
Second Band	16			
Less Refrangible Edge . . .	.	12.93	515.	516.
Brightest Part	.	13.15	510.6	
More Refrangible Edge . . .	.	13.81	497.	499.
Third Band	1			
Less Refrangible Edge . . .	.	16.16	461.	471.
Middle	.	16.6	455.	
More Refrangible Edge . . .	.	17.04	449	459.

Fig. 2 conveys a very good idea of the general appearance of the spectrum, and, in addition, shows the position of the bright bands relatively to some of the most conspicuous lines in the solar spectrum.

Fig. 2.



Mr. Huggins has published a careful description of the spectrum of Comet II, 1868,[1] but, as he has not furnished the means of converting his micrometer readings into any known scale, in order to obtain the wave-lengths it is necessary to have recourse to the plate accompanying his paper. In addition to the spectrum of the comet, this exhibits also some of the principal lines of the solar spectrum, and by interpolating between them the numbers contained in the last column of Table V have been deduced. A comparison of these numbers with those contained in the preceding column of the same table will show that the wave-lengths of the spectrum of Encke's Comet are so nearly identical with those of Comet II, 1868, as to render it almost certain that the differences between them are entirely due to the far from accurate methods employed in their determination. When, in addition to this, the great similarity in the general appearance of the two spectra is considered, it seems impossible to avoid concluding that they are absolutely identical. Hence it follows that the physical constitutions of the two comets are also identical; and, as Mr. Huggins has shown that Comet II, 1868, is probably composed mainly of incandescent carbon in a gaseous state, we infer that Encke's comet is also composed of the same substance. At all events, my observations show that it gives a carbon-spectrum exactly like that obtained from an electric spark taken in olefiant gas.

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[1] Further Observations on the Spectra of some of the Stars and Nebulæ, with an Attempt to determine therefrom whether these Bodies are moving toward or from the Earth; also Observations on the Spectra of the Sun and of Comet II, 1868. Phil. Trans., 1868, p. 555.

III.—DENSITY OF ENCKE'S SUPPOSED RESISTING MEDIUM IN SPACE.

As it was from a consideration of the motion of this comet that Encke was led in 1819 to propound his famous theory of a resisting medium in space, perhaps it may not be inappropriate to incorporate in this report an attempt to determine the density of that medium, but in so doing I do not wish to be understood as expressing any opinion with regard to the truth or falsity of Encke's hypothesis. The problem to be considered may be stated as follows:

Supposing all space to be pervaded by a resisting medium of uniform density, what must that density be in order to account for the observed retardation of Encke's Comet?

1.—*Investigation of a General Expression for the Mass of a Comet.*

If we assume the sun's horizontal equatorial parallax to be 8″.9, and adopt Captain Clarke's elements of the figure of the earth,[1] namely,

Equatorial semi-diameter - - - - - - - - -	3963.057 miles,
Polar semi-diameter - - - - - - - - - -	3949.760 miles,

we shall have, for the distance of the earth from the sun,

$$\frac{3963.06}{\sin 8''.9} = 91\ 847\ 000 \text{ miles.}$$

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[1] Phil. Trans., 1856, p. 626.

The following are the principal results which have hitherto been obtained for the average specific gravity of the earth, water being taken as unity:

Schehallien experiment[1]	5.0
Cavendish's experiment, reduced by Baily[2]	5.45
Reich, by Cavendish's method	5.44
Baily, by Cavendish's method[3]	5.67
Airy, by his Harton Colliery experiment[4]	6.565
Captain Clarke, from deflections of the plumb-line at Arthur's Seat[5]	5.316

The mean of all is 5.57, which I shall use as the best value at present attainable.

The following notation will be employed:

Δ = mean distance of the earth from the sun = 91 847 000 English miles.

ρ'' = distance of the comet from the earth, expressed in terms of the earth's mean radius-vector.

s = apparent semi-diameter of the comet as seen from the earth, expressed in arc.

m = mass of comet.

σ = specific gravity of the gas composing the comet, taken at its actual pressure and temperature, which are supposed to be t degrees F. and p inches of mercury.

σ_0 = specific gravity of the gas composing the comet, taken at a temperature of 60° F., and a pressure of 30 inches of mercury at 60° F., the specific gravity of air being considered as unity.

π = ratio of the circumference of a circle to its diameter = 3.14159.

w = weight of one cubic foot of air at a temperature of 60° F. and a pressure of 30 inches of mercury = 534.55 grains.

f = number of feet in one English mile = 5280.

γ = number of grains in one avoirdupois pound = 7000.

β = number of pounds in one ton = 2000.

If $V_{(p,\,t)}$ is the volume, and σ the specific gravity, of a certain quantity of gas at the pressure p and temperature t, and $V_{(p',\,t')}$ its volume, and σ' its specific gravity, at the pressure p' and temperature t', then

$$\sigma\, V_{(p,\,t)} = \sigma'\, V_{(p',\,t')}$$

and, also,

$$V_{(p,\,t)} = V_{(p',\,t')} \frac{(1 + \alpha\, t)\, p'}{(1 + \alpha\, t')\, p}$$

where α is the coefficient of expansion, which is nearly the same for all gases. Hence

$$\sigma = \sigma' \frac{(1 + \alpha\, t')\, p}{(1 + \alpha\, t)\, p'}$$

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[1] Abridg. Phil. Trans., 1776-80, Vol. XIV, p. 420.

[2] Mem. Roy. Ast. Soc., Vol. XIV, p. 91.

[3] *Ibid.*, p. ccxlvii.

[4] Phil. Trans., 1856, p. 342.

[5] *Ibid.*, p. 606.

Employing the Fahrenheit scale of temperatures, for which $\alpha = \frac{1}{459}$, and putting $p' =$ 30 inches, and $t' = 60°$, this becomes

$$\sigma = \sigma_0 \frac{519 p}{(459 + t)\, 30} \qquad (1)$$

by means of which the specific gravity of a comet may be computed, provided the gas of which it is composed, and also its pressure and temperature, can be discovered.

If the distance of a comet from the sun is $\Delta \rho''$ miles, its radius will be $\Delta \rho'' \sin s$ miles, and its volume will be $\frac{4}{3}\pi (\Delta \rho'' \sin s)^3$ cubic miles. One cubic foot of its substance will weigh σw grains, and one cubic mile will weigh $\sigma w f^3 \div \beta \gamma$ tons. The total mass of the comet will, therefore, be

$$\frac{\frac{4}{3}\pi\, w f^3 \Delta^3}{\beta \gamma}\, \sigma (\rho'' \sin s)^3 = 1\,824 \times 10^{28}\, \sigma (\rho'' \sin s)^3 \text{ tons.} \qquad (2)$$

Taking the mean radius of the earth as 3956.4 miles, its volume is $\frac{4}{3}\pi\ 3956.4^3$ cubic miles. As already shown, its density is 5.57 times that of water, which weighs 62.50 pounds per cubic foot. Hence, the total weight of the earth is $\frac{4}{3}\pi \times 5.57 \times 62.50 \times 3956.4^3 f^3 \div \beta = 6\,647 \times 10^{18}$ tons; and the mass of the comet, expressed in terms of the earth's mass as unity, will be

$$\frac{1\,824 \times 10^{28}}{6\,647 \times 10^{18}}\, \sigma (\rho'' \sin s)^3 = 2\,744 \times 10^{6}\, \sigma (\rho'' \sin s)^3 \qquad (3)$$

Lead weighs 709.5 pounds per cubic foot; hence, a sphere of that metal having a radius of L miles will weigh $\frac{4}{3}\pi \times 709.5\, f^3 L^3 \div \beta = 2\,187 \times 10^{18} L^3$ tons. Equating this with the right-hand member of equation (2) we find that the weight of the comet will be equivalent to that of a sphere of lead having a radius of

$$4\,369\,000 \sqrt[3]{\sigma}\, (\rho'' \sin s) \text{ miles.} \qquad (4)$$

2.—*Investigation of a General Expression for the Amount of Free Force developed by the shortening from a to a′ of the Semi-axis Major of a Body moving about the Sun in a Closed Orbit.*

In addition to the notation already given, the following will be required:

$V =$ velocity of the body in its orbit at the time its radius-vector is ρ'.
$a, a' =$ semi-axes major at the times T and T', expressed in terms of the earth's mean radius-vector as unity.
$\rho, \rho' =$ radii-vectores at the times T and T'.
$v =$ true anomaly.
$k =$ a constant peculiar to the solar system. Log $k = 8.23558$.
$g =$ mean force of gravity at the surface of the earth, expressed in terms of the velocity which a body falling freely would acquire at the end of the first second $= 32.180$ feet.

If a body whose mass is insignificant compared with that of the sun move about the latter in a closed orbit, its velocity, at any time, will be given by the equation

$$V^2 = k^2 \left(\frac{2}{\rho'} - \frac{1}{a} \right)$$

As the units in this expression are the earth's mean radius-vector and the mean solar day, in order to obtain V in feet per second the right-hand member of the equation must be multiplied by the square of the number of feet in the earth's mean distance from the sun, and divided by the square of the number of seconds in a day. We, therefore, have

$$V^2 = \left(\frac{2}{\rho'} - \frac{1}{a} \right) \frac{k^2 \Delta^2 f^2}{86\ 400^2} = 9\ 322 \times 10^6 \left(\frac{2}{\rho'} - \frac{1}{a} \right) \qquad (5)$$

Imagining the sun's whole mass to be concentrated at its center, we may suppose the orbit of the body to become more and more eccentric, until finally it approaches indefinitely near a straight line, having the foci at its two extremities. Under such circumstances it is evident that when the body attained its aphelion it would be, for an instant, in a state of absolute rest, and then it would begin its return to the sun, which it would approach with ever-increasing velocity until it arrived at perihelion, when, for an instant, its velocity would be infinite; and then it would again recede, with diminishing velocity, to its aphelion, and thus continue to oscillate back and forth for evermore. If the aphelion distance is designated by ρ, the mean distance will evidently be $\frac{1}{2}\rho$, and we shall have

$$V^2 = 9\ 322 \times 10^6 \left(\frac{2}{\rho'} - \frac{2}{\rho} \right)$$

A moment's consideration will show that this expression applies also to the case of a body situated at a distance ρ from the sun, and falling toward it, from a state of rest, through the distance $\rho - \rho'$. But the work done in imparting a velocity of V feet per second to a body having a mass of m pounds is

$$\frac{m V^2}{2 g} \text{ foot-pounds.}$$

Hence, the amount of energy which the sun would impart to a body while falling through the space of $\rho - \rho'$ is

$$1\ 448 \times 10^5 \left(\frac{2}{\rho'} - \frac{2}{\rho} \right) m \text{ foot-pounds.} \qquad (6)$$

Resuming equation (5), it is evident that if at the epoch T we suppose the body to have had the true anomaly v, the semi-axis major a, and the radius-vector ρ, its velocity in its orbit was

$$\left\{ 9\ 322 \times 10^6 \left(\frac{2}{\rho} - \frac{1}{a} \right) \right\}^{\frac{1}{2}} \text{ feet per second,}$$

and the work required to produce this velocity was

$$1\,448 \times 10^5 \left(\frac{2}{\rho} - \frac{1}{a}\right) m \text{ foot-pounds.}$$

Again, if at the epoch T', the eccentricity of the orbit and the true anomaly being the same as before, we suppose the body to have had the semi-axis major a', and the radius-vector ρ', the work required to produce the velocity which it then had in its orbit was

$$1\,448 \times 10^5 \left(\frac{2}{\rho'} - \frac{1}{a'}\right) m \text{ foot-pounds.}$$

Hence, while the radius-vector shortened from ρ to ρ', a force of

$$1\,448 \times 10^5 \left(\frac{2}{\rho'} - \frac{2}{\rho} + \frac{1}{a} - \frac{1}{a'}\right) m \text{ foot-pounds}$$

was expended in increasing the velocity of the body's motion. Subtracting this from the total amount of energy imparted by the sun's attraction during the same time, as given by equation (6), there remains a free force of

$$1\,448 \times 10^5 \left(\frac{1}{a'} - \frac{1}{a}\right) m \text{ foot-pounds,} \qquad (7).$$

which may have been applied to overcoming the resistance of a medium pervading space.

3.—*Investigation of a General Expression for the Density of a Medium, in Terms of the Resistance experienced by a Body of Known Size moving through it with known Velocity.*

It is a very long step from the speed of a cannon-ball to that of a planet or comet; and yet, as the highest velocities with which we have hitherto been able to experiment are furnished by projectiles, in an investigation like the present we have no recourse except to argue from the resistance which they experience to that which may be experienced by bodies moving about the sun.

The law connecting the velocity of a projectile with the resistance offered to it by the air does not seem to be well determined, but perhaps the most satisfactory formula is that of Mr. J. A. Longridge,[1] who gives

$$\text{Log } R = 4.5 \log V - 13.0155$$

where R is the resistance per square inch of sectional area, expressed in avoirdupois pounds, and V is the velocity in feet per second. If R is taken in tons per square mile, the formula will become

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[1] Proceedings Royal Society, 1868, Vol. XVI, p. 265; or, L. E. & D. Phil. Mag., 1868, Vol. XXXV, p. 305.

$$\text{Log } R = 4.5 \log V - 6.7129.$$

that is,

$$R = \frac{V^{4.5}}{5\,163\,000}$$

which corresponds to an atmospheric pressure of about thirty inches of mercury. If the sectional area of the projectile is α square miles, and the resistance is supposed to vary as the pressure, then, for a pressure of p inches, the total resistance will be

$$R = \frac{\alpha p V^{4.5}}{154\,900\,000}$$

Hence, if we know the velocity of a body, its sectional area, and the resistance with which it meets, we can compute approximately the density of the medium through which it is moving by means of the formula

$$p = \frac{154\,900\,000\, R}{\alpha V^{4.5}} \tag{8}$$

4.—*Investigation of a General Expression for the Density of the Supposed Resisting Medium in Space.*

If a body moving about the sun in a closed orbit passes over a distance of F feet between the epochs T and T', and if, during that period, its semi-major axis is shortened from a to a', then it results from equation (7) that it must have experienced a constant resistance equal to

$$\frac{1\,448 \times 10^5}{F} \left(\frac{1}{a'} - \frac{1}{a}\right) m$$

Substituting for m its value from equation (2), this becomes

$$\frac{1\,448 \times 10^5}{F} \times \frac{\frac{4}{3} w f^3}{\beta \gamma} \sigma \pi (\Delta \rho'' \sin s)^3 \left(\frac{1}{a'} - \frac{1}{a}\right)$$

which is the value of R in equation (8). α, in the same equation, is equal to $\pi(\Delta \rho'' \sin s)^2$. Substituting these values of R and α, and reducing, equation (8) becomes

$$p = \frac{1\,544 \times 10^{28} \rho'' \sin s \left(\frac{1}{a'} - \frac{1}{a}\right) \sigma}{F\, V^{4.5}} \tag{9}$$

which is the formula required.

5.—*Application of the Equations found in Paragraphs* 1, 2, 3, *and* 4 *to the case of Encke's Comet.*

As already explained, the spectroscope shows that Encke's Comet is mainly, perhaps entirely, composed of carbon in a gaseous state, and that its spectrum is identical with that of olefiant gas, except that it lacks the hydrogen lines. But, owing to the failure of physicists in obtaining carbon vapor, no determination of its specific gravity exists, and, as a rough approximation, I shall therefore employ the specific gravity of olefiant gas, which, being a hydro-carbon, is probably lighter than the material composing the comet.

It is next necessary to have an estimate of the mean pressure and temperature of the gas which forms the comet. In judging of the first of these elements, there is scarcely anything to guide us, and I have somewhat arbitrarily assumed that it is not greater than 0.12 of an inch, nor less than 0.004 of an inch. As to the second element, Kirchhoff has shown that the temperature of a gaseous body, yielding a discontinuous spectrum of given wave-lengths, cannot be less than that of a perfectly black body whose spectrum is of the same brightness at the same wave-lengths, and this renders it certain that the temperature of the comet was not much less than 1 000° F. It is equally sure that it was not greater than that of the sun, which we will now investigate.

Secchi, from observations on radiation, estimates the temperature of the sun at 10 000 000° C.;[1] Ericsson, from observations of the same kind, made by means of a peculiar apparatus of his own, estimates it at 4 036 000° F. = 2 243 000 C.;[2] Zöllner, from his theory of the cause of the red prominences, estimates it at not less than 68 400° C.;[3] Lane, from the recorded effects of Parker's great burning-lens, estimates it at 55 450° F. = 30 788° C.;[4] and Spœrer estimates it at 27 000° C. Although these estimates differ widely from each other, they all seem to me extremely high, and probably vastly in excess of any temperature that ever existed in the universe. In the year 1838 Pouillet estimated the temperature of the sun as somewhere between 1 461° and 1 761° C.[5] Last January M. E. Vicaire, using Secchi's data, and reducing them by means of Dulong and Petit's formula for the intensity of radiation, found that the resulting temperature of the sun was 1 398° C., and, from an extended discussion of the subject, he concluded that the temperature of the solar surface is entirely comparable with that of terrestrial flames.[6] His paper was presented to the French Academy, and, after its reading, a number of the *savants* present expressed their substantial concurrence in his views, their estimates of the probable solar temperature all lying between 2 500° and 3 000° C.[7]

If R represents the total radiation in vacuo from a body whose temperature is $t + \theta$, situated in an inclosure whose temperature is θ, then, from a series of experiments, in which the value of $t + \theta$ ranged between 60° and 240° C., and that of θ was varied from 0° to 80° C., Dulong and Petit found that[8]

$$R = m\,\alpha^{\theta}(\alpha^{t} - 1)$$

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[1] Le Soleil, p. 271.

[2] Nature, 1871, Vol. IV, p. 452.

[3] L. E. & D. Phil. Mag., 1870, Vol. XL, p. 323.

[4] Amer. Jour. of Science, 1870, Vol. L, p. 68.

[5] Comptes Rendus, 1838, T. VII, p. 35.

[6] *Ibid.*, 1872, T. LXXIV, pp. 33 and 34.

[7] *Ibid.*, pp. 35-36 and 152.

[8] Annales de Chimie et de Physique, 1817, T. VII, p. 252.

where α is a constant the numerical value of which for the centigrade scale of temperatures is 1.0077, and m is an unknown constant depending upon the unit of heat adopted, the size of the radiating body, the substance of which it is composed, and the time during which the radiation takes place. Assuming the truth of this equation, adopting as the unit of heat the quantity required to raise 1 000 grains of water 1° C., and making R the amount of radiant heat which emanates in one minute from a surface one foot square, Mr. Hopkins determined experimentally the approximate value of m for several different substances, as follows:[1]

Glass	9.566
Dry chalk	8.613
Dry new red sandstone	8.377
Sandstone, (building-stone)	8.882
Polished limestone	9.106
Unpolished limestone, (same block)	12.808

It is more convenient to take as the unit of heat the quantity required to raise one gram of water from 0° to 1° C., and to make R the radiation in one minute from a surface one centimeter square. As 1 000 grains are equal to 64.82 grams, and one square foot is equal to 929.0 square centimeters, in order to make the change it is only necessary to multiply the values given above by $\frac{64.82}{929.0} = 0.06978$. We then have

Glass	0.6674
Dry chalk	.6009
Dry new red sandstone	.5845
Sandstone, (building-stone)	.6197
Polished limestone	.6353
Unpolished limestone, (same block)	.8937

If r represents the intensity of solar radiation on a surface one centimeter square, situated at a distance of Δ centimeters from the sun, then the total solar radiation will be $4\pi\Delta^2 r$; and if the apparent angular semi-diameter of the sun as seen from the distance Δ is s, its radius will be $\Delta \sin s$, and its surface will be $4\pi\Delta^2 \sin^2 s$. Hence, the radiation at the solar surface from an area one centimeter square will be $\frac{r}{\sin^2 s}$, and, in accordance with Dulong and Petit's law, we shall have

$$\frac{r}{\sin^2 s} = m\,\alpha^\theta(\alpha^t - 1)$$

which at once gives

$$t + \theta = \frac{\log\left(\alpha^\theta + \frac{r}{m \sin^2 s}\right)}{\log \alpha} \qquad (10)$$

If, in this formula, while m and α retain the same signification as before, we make θ represent the temperature of space beyond the limit of the earth's atmosphere, r the intensity of solar radiation at the earth's surface, corrected for atmospheric absorption, and s the sun's semi-diameter at the earth's mean distance, then $t + \theta$ will be the temperature of the sun.[1]

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[1] Phil. Trans., 1860, p. 407.

Probably the best determinations of the temperature of space are those of Pouillet and Sir J. F. W. Herschel. The former gives $-142°$ C.,[2] and the latter $-239°$ F. $= -151°$ C.[3] The mean is $-146°$ C., which I adopt as the value of θ. Taking as the unit of heat the quantity required to raise one gram of water from 0° to 1° C., Pouillet found, from observations made at Paris, that if the atmosphere did not exist, the sun's rays, falling vertically on a surface one centimeter square, would be capable of imparting to it 1.7633 units of heat per minute.[4] Sir J. F. W. Herschel found, from observations made at the Cape of Good Hope, that when the sun was within 12° of the zenith its rays, after passing through the earth's atmosphere, were capable of melting 0.1914 of a millimeter of ice per minute.[5] Employing the value used by him for the latent heat of ice, viz, $135°.5$ F. $= 75°.28$ C., and, taking the atmospheric absorption within 12° of the zenith to be 0.25, as given by Pouillet, this becomes 1.801 units of heat for each square centimeter of surface. The mean between this result and that of Pouillet is 1.782 units, which I adopt as the value of r. The value of s is $16'\ 2''$. Mr. Hopkins's experiments seem to indicate that for the substances composing the earth's crust the value of m is about 0.67, but, as we have no knowledge of its value for the sun, I shall assume that it lies somewhere between 0.1 and unity.

Collecting our results, we have

$$\theta = -146°\text{ C.} \qquad r = 1.782 \qquad s = 16'\ 2''$$

m lies somewhere between 0.1 and 1.0

Substituting these values in equation (10) we obtain

m	$t + \theta$	m	$t + \theta$
0.1	1775° C.	0.6	1542° C.
0.2	1685	0.7	1522
0.3	1632	0.8	1504
0.4	1594	0.9	1489
0.5	1565	1.0	1475

In order to make $t + \theta$ as great as 2 000° C. we must assume m as small as 0.018; and, if Dulong and Petit's formula holds for such elevated temperatures, it does not seem possible that the sun can be hotter than the oxyhydrogen flame, the temperature of which, according to Bunsen, is about 2 844° C.[6]

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[1] This equation is essentially the same as that given by Pouillet in the Comptes Rendus, 1838, T. VII, p. 35; but, as that work is not generally accessible in this country, and as the above was written before I had seen Pouillet's memoir, it is allowed to remain in this report.

[2] Comptes Rendus, 1838, T. VII, p. 61.

[3] Encyclopædia Britannica, 8th edition, Art. Meteorology, par. 36.

[4] Comptes Rendus, 1838, T. VII, p. 31.

[5] Results of Astronomical Observations made at the Cape of Good Hope, by Sir J. F. W. Herschel, p. 446.

[6] Poggendorf's Annalen, Vol. CXXXI, p. 172.

Returning to the consideration of the comet, in view of what has just been said, it is very unlikely that its temperature approached 5 000° F.; but, in order to be on the safe side, I will assume that t was not less than 1 000°, nor greater than 20 000° F. Collecting our results, we have $\sigma_0 = 0.9784$, p comprised between the limits 0.004 and 0.12 of an inch of mercury, and t comprised between the limits 1 000° and 20 000° F. Substituting these values in equation (1), we obtain the values of $\log \sigma$ given in

TABLE VI.

NOTE.—In using these logarithms their characteristics must be diminished by 10.

Pressure in Inches.	Temperature.			
	1 000°	5 000°	10 000°	20 000°
0.004	5.6666	5.0935	4.8111	4.5197
.04	6.6666	6.0935	5.8111	5.5197
.08	6.9676	6.3946	6.1122	5.8208
.12	7.1437	6.5706	6.2883	5.9969

On the 25th of November the apparent diameter of the comet was from four to five minutes. In order to be on the safe side I will take $s = 2'$. For that date Mr. S. von Glasenapp's ephemeris[1] gives $\log \rho'' = 9.5170$. Hence, $\log (\rho'' \sin s) = 6.2818 - 10$. Substituting that value in equation (3), it becomes $0.01922\, \sigma$, by means of which Table VII has been computed.

TABLE VII.—*Mass of Encke's Comet in terms of the Earth's Mass as Unity.*

Pressure in Inches.	Temperature.			
	1 000°	5 000°	10 000°	20 000°
0.004	0.000 000 892	0.000 000 238	0.000 000 124	0.000 000 064
.04	.000 008 920	.000 002 384	.000 001 244	.000 000 636
.08	.000 017 84	.000 004 768	.000 002 489	.000 001 273
.12	.000 026 76	.000 007 152	.000 003 733	.000 001 909

Substituting in equation (4) the value of $\rho'' \sin s$, given above, it becomes $836.0\sqrt[3]{\sigma}$, and the formula for the diameter in miles of a sphere of lead having the same mass as the comet is $1\,672\sqrt[3]{\sigma}$, by means of which Table VIII has been computed.

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[1] Astronomische Nachrichten, No. 1854, Band 78, p. 90.

TABLE VIII.—*Diameter in Miles of a Sphere of Lead whose Mass is equal to that of Encke's Comet.*

Pressure in Inches.	Temperature.			
	1 000°	5 000°	10 000°	20 000°
0.004	60.1	38.70	31.16	24.91
.04	129.4	83.37	67.12	53.67
.08	163.1	105.05	84.58	67.63
.12	186.6	120.26	96.83	77.42

The extreme levity of comets has been so strongly insisted upon that the numbers in Tables VII and VIII seem, at first sight, surprisingly large, and perhaps many persons will feel inclined to doubt their accuracy when they remember that on August 23, 1779, Lexell's comet passed nearer to the planet Jupiter than its fourth satellite, and, although none of the satellites suffered any perceptible perturbation, the orbit of the comet was completely changed. However, that fact is entirely consistent with the numbers given in the Tables, for the mass of Jupiter's smallest satellite is 0.005 868, while the largest mass deduced for the comet is only 0.000 027; or, in other words, the mass of the satellite is at least 219 times greater than that of the comet, and no perturbations visible from the earth were to be expected.

The mean density of the earth is 2.037 times less than that of lead. Hence, multiplying the numbers in Table VIII by $\sqrt[3]{2.037} = 1.268$, we find that the mass of the comet was approximately equal to that of a sphere having the mean density of the earth and a diameter somewhere between 32 and 237 miles. Mr. Stone has shown that the diameters of the first seventy-one asteroids are probably all included between the limits 17 and 214 miles.[1] Their density is unknown, but it is not likely to exceed that of the earth. We are therefore led to conclude that *the mass of Encke's Comet is not less than that of an asteroid*, and this conclusion cannot be modified by any probable change in the adopted value of σ_0; for, even if we suppose the comet to consist of pure hydrogen, existing at the pressures and temperatures given in Table VIII, its mass must have been equal to that of a sphere having the mean density of the earth and a diameter somewhere between 13 and 98 miles. Few persons realize that gases are heavy, and yet one cubic mile of atmospheric air weighs 5 621 000 tons, and one cubic mile of pure hydrogen, the lightest known substance, weighs no less than 389 000 tons.

In order to obtain numerical values of a, a', F, and $V^{4.5}$, in equation (9), it is necessary to have the elements of the orbit of Encke's Comet, at two epochs, as widely separated as possible. For the first epoch, I will take the perihelion passage of 1819, January 27.2934, Berlin mean time, when, according to Encke,[1]

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[1] Approximate Relative Dimensions of Seventy-one of the Asteroids, by E. J. Stone. Monthly Notices; Roy. Ast. Soc., 1867, Vol. XXVII, p. 302.

$$\begin{aligned} e &= 0.84858 \\ \log q &= 9.52538 \\ \log a &= 0.34520 \end{aligned}$$

and, for the second epoch, I will take the perihelion passage of 1871, December 28.6297, Berlin mean time, when, according to Mr. S. von Glasenapp,[2]

$$\begin{aligned} e' &= 0.84936 \\ \log q' &= 9.52229 \\ \log a' &= 0.34433 \end{aligned}$$

Taking the mean of these two sets of elements, we obtain

$$\begin{aligned} e_0 &= 0.84897 \\ \log q_0 &= 9.52384 \end{aligned}$$

Whence, by means of the formulæ,

$$a = \frac{q}{1 - e}$$

$$b = a(1 - e^2)^{\frac{1}{2}}$$

$$\mu = \frac{3548''.2}{a^{\frac{3}{2}}}$$

$$\text{Periodic Time} = \frac{360^\circ}{\mu}$$

we obtain

$$\begin{aligned} \log a_0 &= 0.34478 \\ \log b_0 &= 0.06778 \\ \mu_0 &= 1078''.55 \\ \text{Periodic Time} &= 1201.6 \text{ days} = 3.2899 \text{ years.} \end{aligned}$$

During the interval between the adopted epochs, the mean length of the circumference of the comet's orbit was approximately

$$2\pi a_0(1 - 0.25\, e_0^2 - 0.046\,875\, e_0^4 - 0.019\,532\, e_0^6)$$

the numerical value of which is 10.95 times the earth's mean radius-vector. But, between January, 1819, and December, 1871, the comet made sixteen complete revolutions, and therefore traveled 16 × 10.95 = 175.2 mean terrestrial radii-vectores, or 8 498 × 10^{10} feet, which is the value of F in equation (9).

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[1] Olbers Abhandlung, Encke's edition, p. 184. [2] Astronomische Nachrichten, No. 1854, Band 78, p. 90.

Let

T = time of perihelion passage,
e = eccentricity,
q = perihelion distance,
a = semi-major axis,
b = semi-minor axis,
μ = mean daily motion,
M = mean anomaly at the time t,
E = eccentric anomaly at the time t,
v = true anomaly at the time t,
ρ = radius-vector at the time t,
V = velocity in the orbit, in feet per second, at the time t;

then we have the well-known formulæ

$$\mu(t - T) = M$$

$$M = E - e \sin E$$

$$\tan \tfrac{1}{2}v = \sqrt{\frac{1 + e}{1 - e}} \tan \tfrac{1}{2}E$$

$$\rho = a(1 - e)\left(\frac{\cos \frac{1}{2}E}{\cos \frac{1}{2}v}\right)^2$$

and also equation (5), which is

$$V^2 = 9\,322 \times 10^6\left(\frac{2}{\rho} - \frac{1}{a}\right)$$

by means of which the logarithmic values of $V^{4.5}$ have been computed from the elements given above, as follows:

	d.		d.	d.	d.	d.	d.	d.	d.	d.
$t - T$	0.00	20.03	40.05	60.08	120.16	180.24	240.32	360.48	480.64	600.80
Log $(t - T)$	. . .	1.30168	1.60260	1.77873	2.07976	2.25585	2.38079	2.55688	2.68182	2.77873
Log μ	. . .	3.03284								
Log M	. . .	4.33452	4.63544	4.81157	5.11260	5.28869	5.41363	5.58972	5.71466	5.81157
M	0° 0′ 0″	6° 0′ 3″	11° 59′ 56″	17° 59′ 59″	36° 0′ 0″	54° 0′ 0″	72° 0′ 0″	108° 0′ 0″	144° 0′ 0″	180° 0′ 0″
E	0° 0′ 0″	31° 11′ 50″	48° 20′ 30″	60° 13′ 0″	84° 24′ 38″	101° 38′ 30″	115° 47′ 44″	139° 33′ 18″	160° 21′ 15″	180° 0′ 0″
$e \sin E$	. . .	25° 11′ 47″	36° 20′ 30′	42° 13′ 0″	48° 24′ 40″	47° 38′ 30″	43° 47′ 40″	31° 33′ 20″	16° 21′ 14″	
$\frac{1}{2} E$	0° 0′ 0″	15° 35′ 55″	24° 10′ 15″	30° 6′ 30″	42° 12′ 19″	50° 49′ 15″	57° 53′ 52″	69° 46′ 39″	80° 10′ 37″	90° 0′ 0″
Log tan $\frac{1}{2} E$	. . .	9.44588	9.65206	9.76333	9.95757	0.08885	0.20248	0.43371	0.76158	
Log $\sqrt{\frac{1+e}{1-e}}$	. . .	0.54394								
Log tan $\frac{1}{2} v$	. . .	9.98982	0.19600	0.30727	0.50151	0.63279	0.74642	0.97765	1.30552	
$\frac{1}{2} v$	0° 0′ 0″	44° 19′ 45″	57° 30′ 40″	63° 45′ 46″	72° 30′ 31″	76° 53′ 19″	79° 50′ 8″	83° 59′ 24″	87° 10′ 1″	90° 0′ 0″
Log cos $\frac{1}{2} E$	. . .	9.98370	9.96015	9.93706	9.86967	9.80054	9.72544	9.53865	9.23199	
Log cos $\frac{1}{2} v$	. . .	9.85451	9.73008	9.64551	9.47794	9.35573	9.24668	9.01995	8.69396	
Log $\left(\frac{\cos \frac{1}{2} E}{\cos \frac{1}{2} v}\right)$	. . .	0.12919	0.23007	0.29155	0.39173	0.44481	0.47876	0.51870	0.53803	
Log $\left(\frac{\cos \frac{1}{2} E}{\cos \frac{1}{2} v}\right)^2$	. . .	0.25838	0.46014	0.58310	0.78346	0.88962	0.95752	1.03740	1.07606	
Log $a(1 - e)$	. . .	9.52384								
Log ρ	9.52384	9.78222	9.98398	0.10694	0.30730	0.41346	0.48136	0.56124	0.59990	0.61171
Log $\frac{2}{\rho}$	0.77719	0.51881	0.31705	0.19409	9.99373	9.88757	9.81967	9.73979	9.70113	9.68932
$\frac{2}{\rho}$	5.9867	3.3022	2.0752	1.5635	0.98567	0.77192	0.66019	0.54928	0.50249	0.48901
$\frac{1}{a}$	0.4521	. . .	. . .	. . .	0.45208					
$\frac{2}{\rho} - \frac{1}{a}$	5.5346	2.8501	1.6231	1.1114	0.53359	0.31984	0.20811	0.09720	0.05041	0.03693
Log $\left(\frac{2}{\rho} - \frac{1}{a}\right)$	0.7431	0.4549	0.2103	0.0459	9.7272	9.5049	9.3183	8.9877	8.7025	8.5674
Log (9322×10^6)	9.9695									
Log V^2	10.7126	10.4244	10.1798	10.0154	9.6967	9.4744	9.2878	8.9572	8.6720	8.5369
Log $V^{4.5}$	24.1033	23.4549	22.9045	22.5346	21.8176	21.3174	20.8975	20.1537	19.5120	19.2080

The second column of the following table contains the values of $V^{4.5}$, corresponding to the values of $t - T$, given in the first column. The third column contains a series of factors, so taken that if each value of $V^{4.5}$ is multiplied by the factor standing on the same line with it, the sum of all the products thus formed is approximately the mean value of $V^{4.5}$ for the whole orbit. The fourth column is sufficiently intelligible without further explanation.

$t - T$	$V^{4.5}$	Factor.	$V^{4.5} \times$ Factor.
0ᵈ	1 268 500 × 10^{18}	0.01667	211 400 × 10^{17}
20	285 000	.03333	95 020
40	80 260	.03333	26 750
60	34 250	.06667	22 830
120	6 571	.10000	6 571
180	2 077	.05000	1 039
240	790	.20000	1 580
360	142	.20000	285
480	33	.20000	65
600	16	.10000	16
			Sum = 365 556 × 10^{17}

Collecting our results, we have

$$\rho'' \sin s = 0.00019133 \qquad F = 8\,498 \times 10^{10}$$
$$a = 2.2141 \qquad V^{4.5} = 3\,656 \times 10^{19}$$
$$a' = 2.2097$$

Substituting these values in equation (9), it becomes

$$p = \frac{8\,612\,\sigma}{10^{16}}$$

by means of which Table IX has been computed, the values of σ being taken from Table VI.

TABLE IX.—*Density of the Supposed Resisting Medium in Space, expressed in terms of the Height in Inches of the Column of Mercury which it will support.*

[NOTE.—The numbers in the table are given in units of the fifteenth place of decimals.]

Pressure in Inches.	Temperature.			
	1 000°	5 000°	10 000°	20 000°
0.004	0.039 97	0.010 68	0.005 58	0.002 85
0.04	0.399 70	0.106 80	0.055 75	0.028 50
0.08	0.799 30	0.213 60	0.111 50	0.057 00
0.12	1.199 00	0.320 40	0.167 30	0.085 51

As the formulæ employed are open to some objections, these results can only be considered as indicating the probable *order* of density of the supposed resisting medium. This density comes out so slight, or rather the rarity of the medium comes out so great, that the figures fail to convey any definite idea to the mind, and we must have recourse to illustrations in order to bring out their significance. A man inhales, on an average, twenty cubic inches of air at each breath, or, in other words, a quantity of air equivalent in bulk to a large apple, (3.37 inches in diameter,) but if the density of the air were reduced to that of the supposed resisting medium, in order to live he would be obliged to take into his lungs, at each inspiration, a bulk of it equivalent to a sphere somewhere between fifteen and one hundred and seventeen miles in diameter. Again: let us suppose two little cylinders, the first having a diameter equal to the height of the column of mercury which the resisting medium will support, and the second having a diameter of 0.003 of an inch, which is that of an average human hair; then, if these two cylinders simultaneously commence growing, and both increase at precisely the same rate, when the first has attained the diameter of a human hair the second will have attained a diameter somewhere between fifteen times, and six thousand three hundred times that of the earth.

The best information in our possession seems to indicate that auroras seldom, if ever, appear at an elevation above the earth's surface less than about forty-five miles, and that they sometimes extend upward to an elevation of at least five hundred miles.[1] Let us compute the density of the atmosphere at these elevations, employing, for that purpose, Laplace's barometrical formula, modified in accordance with the most recent determinations. Assuming that at the earth's surface the height of the barometer is 30 inches, and the temperature 60° F., and at the point where the pressure is to be determined the temperature is — 200° F., substituting these values in the formula, neglecting insignificant terms, and reducing, we get

$$\text{Log}\ p = 1.4771 - \frac{x}{46\,530\left(1 + \dfrac{x + 52\,251}{20\,888\,629}\right)} \qquad (11)$$

where p is the pressure of the atmosphere, expressed in inches of mercury, at an altitude of x feet above the earth's surface. From this expression it results that, measuring upward from the earth's surface, at 45 miles the pressure of the atmosphere is $\frac{276}{10^6}$ of an inch of mercury, and, at 500 miles, it is $\frac{16}{10^{50}}$ of an inch of mercury. Now, if, in order to make the density of the resisting medium in space as small as possible, we suppose the comet to consist of gas at a temperature of 20 000° F., and a pressure equivalent to that just found for the atmosphere at 45 miles above the earth's surface, the formulæ already given will show that the mass of the comet must be 0.000 000 004 37 of that of the earth. The diameter of a sphere of lead of the same weight is 10.21 miles, and the density of the resisting medium in space must be such as would support $\frac{196}{10^{21}}$ of an inch of mercury. It thus appears that, with any value which can be reasonably deduced for the mass of the comet, the density of the resisting medium comes out enormously greater than that of the atmosphere at the upper limit of auroras. Hence, there is some probability that the electric currents which give rise to auroras are propagated in a medium which pervades all space, and that the spectrum of the aurora is, in reality, the spectrum of that medium. This probability is strengthened by the fact that the characteristic line of the spectrum of the corona seen around the sun during total eclipses is sometimes visible in the spectrum of the aurora, and also by Professor C. Piazzi Smyth's recent discovery, that the spectrum of the nocturnal sky shows a maximum of brightness about the position which would be occupied by the coronal line if it were present.[1]

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[1] Professor E. Loomis on the Aurora Borealis, Smithsonian Report, 1865, p. 221.

Without going into any elaborate discussion on the subject of comets' tails, I would like to call attention to the fact that many circumstances seem to indicate that they are, to a great extent, an electrical phenomenon. Such a view, taken in connection with what has been said in the preceding paragraph, would lead to the conclusion that, no matter how much the physical constitutions of the heads of *large* comets may vary, their tails must all give spectra similar to that of the aurora, although additional lines may be present. If future observations should confirm this conjecture, it seems to me that the existence of a resisting medium pervading all space will be proved.

IV.—SUMMARY OF RESULTS.

In conclusion, the results arrived at in this report may be briefly recapitulated as follows:

1. Encke's Comet gives a carbon-spectrum.
2. From November 18 to December 2 the wave-length of the brightest part of the second band of the comet's spectrum was continually increasing.
3. No polarization was detected in the light of the comet.
4. The mass of Encke's Comet is certainly not less than that of an asteroid.
5. The density of the supposed resisting medium in space, as computed from the observed retardation of Encke's Comet, is such that it would support a column of mercury somewhere between $\frac{220}{10^{17}}$ and $\frac{285}{10^{20}}$ of an inch high.
6. There is some probability that the electric currents which give rise to auroras are propagated in a medium which pervades all space, and that the spectrum of the aurora is, in reality, the spectrum of that medium.
7. It is not improbable that the tails of all *large* comets will be found to give spectra similar to that of the aurora, although additional lines may be present.

Very respectfully,

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Rear-Admiral B. F. Sands, U. S. N.,
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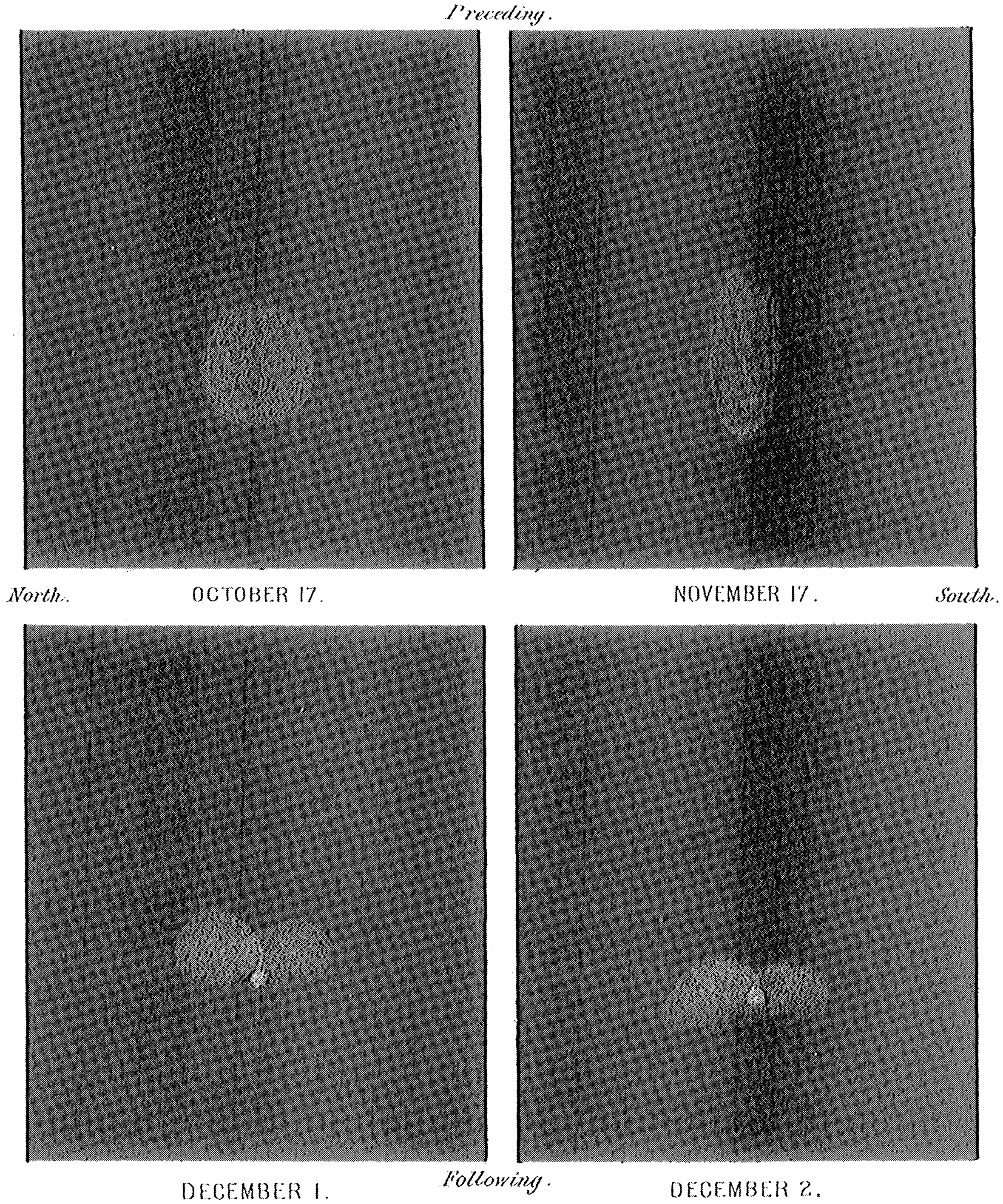
[1] Proceedings of the Royal Society, 1872, Vol. XX, p. 136.



OCTOBER 17.

NOVEMBER 17.

DECEMBER 1.

DECEMBER 2.

ENCKE'S COMET
as seen during its return in 1871
by
Prof. A. Hall, U. S. N.

APPENDIX III.

ON THE RIGHT ASCENSIONS
OF THE
EQUATORIAL FUNDAMENTAL STARS
AND THE CORRECTIONS NECESSARY TO REDUCE THE
RIGHT ASCENSIONS OF DIFFERENT CATALOGUES
TO A
MEAN HOMOGENEOUS SYSTEM.

BY

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ON THE RIGHT ASCENSIONS
OF THE
EQUATORIAL FUNDAMENTAL STARS
AND
THE CORRECTIONS NECESSARY TO REDUCE THE RIGHT ASCENSIONS OF DIFFERENT STAR-CATALOGUES TO A MEAN HOMOGENEOUS SYSTEM.

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§ 1.

INTRODUCTION.

Within the past few years very important additions have been made to the material at our disposal for an accurate determination of the positions and proper motions of the fundamental stars. These comprise Dr. Auwers' reduction of Bradley's observations, the Pulkowa catalogue of 1845, and the continuation of the Greenwich and Washington observations. It is not too much to say that this additional material alone would suffice to furnish results far more accurate than any that could be obtained from the older data.

The object of the present work is to do for the right ascensions of the equatorial and zodiacal stars, on which the reductions of lunar and planetary observations depend, what has been done by Dr. Auwers for the declinations, namely, to furnish the data necessary to reduce the principal original catalogues of stars to a homogeneous system by freeing them of their systematic differences. I think this can best be done by comparing the catalogue-positions of the fundamental stars with a uniform set of standard positions as free as possible from systematic error, and to consider any systematic discordance between the standard and the catalogue position as due to error of the latter, and correct it accordingly. For the reason already mentioned, it will not be admissible to take any existing catalogue as the standard. The first step of our work is, therefore, the preparation of a system of right ascensions of fundamental stars which shall be as free as possible from the suspicion of systematic error.

In the formation of such a catalogue I have been guided by certain considerations respecting the probable presence of systematic errors in the reduced right ascensions of many modern catalogues. It has long been the custom, in the reduction of right-ascension observations, to deduce a correction of the clock from adopted right ascensions of stars, and to consider the mean correction thus deduced as applicable to all the stars observed, the clock-stars included. On this system it is clear that if the assumed positions of all the clock-stars used on any one night are affected by a common error, that same error will be carried into the concluded positions. Thus any periodic error depending on the right ascension will tend to perpetuate itself. In a former paper I showed that if the clock-stars observed on each night are distributed uniformly over a period of six hours, and if the assumed positions are affected with the error—

$$a \sin \text{R. A.} + b \cos \text{R. A.} + a' \sin 2 \text{ R. A.} + b' \cos 2 \text{ R. A.}$$

the concluded positions will be affected with the error—

$$\frac{8}{\pi^2} (a \sin \text{R. A.} + b \cos \text{R. A.}) + \frac{4}{\pi^2} (a' \sin 2 \text{ R. A.} + b' \cos 2 \text{ R. A.})$$

Hence the error of single period will be cut down very slowly by successive revisions of the catalogue, each revision reducing it by less than one-fifth. On the other hand, the error of double period will rapidly disappear.

The introduction of these periodic errors is very easy, even where the greatest care is taken in the reductions, owing to the diurnal variation of the conditions to which the instrument, the clock, and the observer are subjected. If the pointing of the instrument, the rate of the clock, or the personal equation of the observer vary during the twenty-four hours, the right ascensions deduced will be affected by a corresponding error. It is true that if the variation continues uniform during an entire year, and if the observations are uniformly distributed throughout the year, this error will be eliminated from a year's work. But neither of these conditions is completely fulfilled, the diurnal change of temperature being greater in summer than in winter, while the annual period in the length of the night and the degree of cloudiness interferes with the continuity of the system of observation.

§ 2.

DETERMINATION OF A SYSTEM OF CORRECTIONS TO THE RELATIVE RIGHT ASCENSIONS OF BESSEL'S TABULÆ REGIOMONTANÆ, PRESUMED TO BE FREE FROM PERIODIC ERRORS.

For the reasons already mentioned, it seems best to deduce the periodic error of the standard catalogue solely from determinations which are entirely independent of any previous hypothesis respecting the right ascensions of clock-stars, and from those in which there is reason to believe that the periodic error has been entirely eliminated. I have selected the following twelve original catalogues as certainly or probably fulfilling one of these conditions:

1. *Auwers' Bradley*, 1755.—Dr. Auwers has very kindly placed his definitive results for relative right ascensions, which are as yet unpublished, at my disposal.

2. *Piazzi*, 1800.—"Praecipuarum stellarum inerrantium positiones mediæ ineunte saeculo XIX. Panormi, 1814."

3. *Maskelyne*, 1805.—Catalogue found in Maskelyne's Astronomical Observations made at the Royal Observatory, Greenwich, from 1799 to 1810, p. 112 of part 2.

4. *Auwers' Cacciatore.*—"Reduction der Beobachtungen der Fundamentalsterne am Passageninstrument der Sternwarte zu Palermo in den Jahren 1803 bis 1805, und Bestimmung der mittleren Rectascensionen für 1805. Von Arthur Auwers. Publication der astronomischen Gesellschaft, V. Leipzig, 1866."

5. *Bessel* I.—"Bestimmung der geraden Aufsteigungen der 36 Maskelyneschen Fundamental-Sterne für 1815, auf Königsberger Beobachtungen gegründet." Berlin Memoirs for 1818–'19, p. 19 of part 2.

6. *Bessel* II.—"Neue Untersuchungen über die geraden Aufsteigungen der 36 Fundamental-Sterne." Berlin Memoirs for 1825, p. 23 of part 2.

7. *Struve.*—Catalogue found in "Positiones mediæ," p. xxxxi.

8. *Brinkley.*—Catalogue found in the Astronomische Nachrichten, Band IV, S. 102.

9. *Argelander. Corrections given by Bessel in Astronomische Nachrichten, No.* 515.—These differ from the positions in Argelander's "DLX. Stellarum fixarum positiones mediæ" only in the addition of the third decimal of seconds.

10. *Pulkowa,* 1845.—"Observations de Poulkova, publiées par Otto Struve, Directeur de l'observatoire central Nicolas. Saint-Pétersbourg, 1869." Vol. I, p. 120.

11. *Greenwich,* 1864.—"New seven-year catalogue of 2760 stars deduced from observations extending from 1861 to 1867 at the Royal Observatory, Greenwich, and reduced to the epoch 1864." (Appendix II to the Greenwich observations for 1868.)

12. *Washington,* 1870.—"Positions of fundamental stars deduced from observations made at the United States Naval Observatory between the years 1862 and 1867." (Washington observations for 1867, Appendix III.)

On this selection I remark that I find no positive evidence that the catalogues of Piazzi and Brinkley are really independent of any previous determination, and that I have judged them to be so because the modern system of reduction had not then come into general use. Argelander, Greenwich, and Washington are not rigorously independent, but they are included, because, in the case of each, there is reason to believe that the systematic errors have been more or less completely eliminated. The following are the reasons in the case of each catalogue:

An examination of Argelander's observations shows that they were generally widely distributed throughout the twenty-four hours, his habit being to observe both morning and evening. From such a day's work the error of single period will be almost entirely eliminated.

The Memoirs of the Royal Astronomical Society, vol. 34, contain a paper by Mr. Stone, in which the stars γ Pegasi, Pollux, Spica, and α Aquilæ are compared, with the express purpose of detecting any inequality depending on the right ascension. The result is that the relative positions of these stars, as given in the seven-year catalogue for 1860, require the following corrections:

			s.		s.
γ Pegasi	—	Pollux,	—.001	or	—.014
Pollux	—	Spica,	+.029	or	+.015
Spica	—	α Aquilæ,	+.008	or	—.005
α Aquilæ	—	γ Pegasi,	+.018	or	+.004

The first column shows the differences independently deduced; the second their values when each is diminished by a constant so as to make their sum zero.

The smallness of this result indicates that the periodic error, if it exists at all, must be very small, and it ought to be smaller still in the catalogue of 1864, which includes still another revision.

In the case of Washington a special effort was made to determine the periodic error of Dr. Gould's right ascensions; which was of the form—

$$a \sin \text{R. A.} + b \cos \text{R. A.}$$

the details of which are given in the catalogue cited. The determination was entirely satisfactory except in one point—a large diurnal inequality showed itself during the second year. This inequality had to be determined on the supposition that it remained constant throughout the year, an hypothesis which, though probable, was not certain.

Having selected our data, the next question will be the mode of combining. It was my original intention to compare each catalogue with Dr. Gould's standard, and thus obtain a correction to the latter of the form—

$$a \sin \alpha + b \cos \alpha + c$$

A series of values of a, b, and c being thus found for the epochs of the various catalogues, the true values of these quantities should increase uniformly with the time. We should then determine a_0, a', b_0, b', c_0, c', from the equations—

$$\begin{aligned} a_0 + a't &= a \\ b_0 + b't &= b \\ c_0 + c't &= c \end{aligned}$$

of which we should have as many sets as there were catalogues compared. Having found the most probable values of a_0, a', etc., the residuals left after substituting them in the equations given by each catalogue would show the systematic error of that catalogue.

But it has been deemed best to begin by determining each star independently of any catalogue whatever, and of any assumed proper motion. This is done most easily and elegantly by assigning the same weight to all the stars in any one catalogue; this weight being determined not by the general accuracy of the catalogue, but solely by its probable freedom from systematic errors. It will then be unnecessary to apply any reduction on account of equinox in this preliminary determination, because, if all the right ascensions of any one catalogue be changed by a constant, that change will affect all the concluded positions by the same amount, and therefore will not change the relative positions at all.

From the nature of the case, it is clearly impossible to make any numerical calculation of the relative weights to be assigned to the different determinations. This is necessarily a matter of individual judgment. Without going into the consideration of each particular case, I may remark that the following weights assigned were founded on considerations respecting the probable freedom of the instruments from sources of systematic error and the care with which systematic error was avoided in the observations and reductions, probable accidental errors not being taken into account, and that they were decided on before any comparison of results. They have, therefore, no necessary analogy with the weights to be assigned in a definitive discussion, after systematic error has been allowed for.

Weights assigned to observations.

No.	Catalogue.	Year.	Weight.
1	Auwers' Bradley . .	1755	3
2	Piazzi	1800	1
3	Maskelyne	1805	1
4	Auwers' Cacciotore .	1805	1
5	Bessel I	1815	1
6	Bessel II	1823	3
7	Struve	1824	3
8	Brinkley	1824	1
9	Argelander	1828	2
10	Pulkowa	1845	6
11	Greenwich	1864	2
12	Washington	1870	3

The dates here given to the catalogues are generally supposed to be about the means of the times of observation on which they depend. The principal exceptions are Brinkley and Washington. The mean date of the former could not be inferred with certainty, but must be earlier than 1824. The date assigned for the latter is, through inadvertence, that to which the catalogue was reduced, which is five years later than the actual mean of the times of observation. The reduction to the epoch was, however, made with Dr. Gould's proper motions, which are so near the truth that few or none of the results are altered the thousandth of a second by this error. I have, therefore, not corrected it.

The results are all exhibited in the form of corrections to the mean positions and annual variations of the Tabulæ Regiomontanæ for the sake of convenience, and the principal steps of the computation are exhibited in the following tables. The first column in each table shows the correction to the right ascension of the Tabulæ Regiomontanæ given by the catalogue. Following one star through the several catalogues, we have a series of corrections applicable at the various epochs. The true correction being of the form $x + y\,t$, each catalogue result gives an equation of condition between x and y. As an epoch near the mean leads to the most convenient computations, I have chosen the year 1820 as the origin of time. Let us now represent by—

$$c_1,\ c_2,\ c_3,\ \text{- - - -}\ c_{12}$$

the corrections given by the several catalogues, the subscript numbers being the same as those of the catalogues to which they correspond in the preceding list. Taking the century as the unit of time, the equations of condition will then be—

$$x - 0.65\,y = c_1$$
$$x - 0.20\,y = c_2$$
$$x - 0.15\,y = c_3$$
$$\text{- - - - -}$$
$$\text{- - - - -}$$
$$\text{etc., etc., etc.}$$

The solution of these equations by least squares, using the weights in the preceding list, will give the following values of x and y:

$$\begin{array}{rlrl}
x = & +0.17\,c_1 & y = & -0.78\,c_1 \\
& +0.04\,c_2 & & -0.10\,c_2 \\
& +0.04\,c_3 & & -0.08\,c_3 \\
& +0.04\,c_4 & & -0.08\,c_4 \\
& +0.04\,c_5 & & -0.03\,c_5 \\
& +0.11\,c_6 & & -0.04\,c_6 \\
& +0.11\,c_7 & & -0.03\,c_7 \\
& +0.03\,c_8 & & -0.01\,c_8 \\
& +0.08\,c_9 & & +0.01\,c_9 \\
& +0.19\,c_{10} & & +0.40\,c_{10} \\
& +0.06\,c_{11} & & +0.27\,c_{11} \\
& +0.09\,c_{12} & & +0.47\,c_{12}
\end{array}$$

No account is here taken of the discordant equinoxes of the various catalogues, because, all the stars in the same catalogue having the same weight, a change of equinox will not change the relative positions of the stars.

In the selection of stars, attention has been at first confined to the Maskelyne fundamental stars between the limits of declination + 40° and − 30°. Several stars have to be omitted, namely, Procyon and Sirius, on account of the irregularity of their proper motions which has been so exhaustively investigated by Auwers that no further discussion of their positions is yet necessary; Castor, on account of its duplicity, and the confusion of the observations upon it, which render it unfit for use as a standard star; β Virginis, α' Libræ, and α' Capricorni, because they have of late dropped out of use.

Under each catalogue, in the following table, we have, in column c, the correction to the Tabulæ Regiomontanæ given by the catalogue, from which the values of x and y are deduced by the preceding formulæ.

The value of the correction $x + ty$ is next computed for the epoch of each catalogue, and subtracted from the correction given by observation. The excess of the catalogue result thus obtained is given in the second column of the table. To correct the residuals for discordance of equinoxes, the mean value of the numbers in this column is taken, and subtracted from the individual numbers. The remainders represent the discordances between the catalogue and the correction as finally deduced.

Corrections to right ascensions given by standard catalogues.

Star.	Bradley, 1755.			Piazzi, 1800.		
	c_1	c'	c_1''	c_2	c_2'	c_2''
γ Pegasi	+ 65	0	− 31	− 54	− 65	+ 18
α Arietis	− 56	+ 40	+ 9	− 168	− 144	− 61
α Ceti	+ 38	+ 64	+ 33	− 76	− 86	− 3
α Tauri	− 12	+ 51	+ 20	− 194	− 172	− 89
β Orionis	+ 40	+ 33	+ 2	− 54	− 36	+ 47
β Tauri	+ 152	+ 31	0	− 53	− 100	− 17
α Orionis	+ 30	+ 22	− 9	− 7	− 13	+ 70
β Geminorum	− 102	+ 41	+ 10	− 173	− 133	− 50
α Hydræ	− 139	+ 28	− 3	− 118	− 80	+ 3
α Leonis	− 106	+ 43	+ 12	− 170	− 121	− 38
β Leonis	− 76	+ 34	+ 3	− 85	− 68	+ 19
α Virginis	− 42	+ 28	− 3	− 86	− 54	+ 29
α Bootis	− 36	+ 39	+ 8	− 164	− 143	− 60
α^2 Libræ	+ 190	+ 23	− 8	+ 30	− 33	+ 50
α Coronæ	− 66	+ 37	+ 6	− 240	− 208	− 125
α Serpentis	+ 122	+ 35	+ 4	− 56	− 86	− 3
α Scorpii	+ 84	+ 4	− 27	+ 122	+ 98	+ 181
α Herculis	− 16	+ 40	+ 9	− 225	− 202	− 119
α Ophiuchi	− 162	+ 44	+ 13	− 161	− 116	− 33
α Lyræ	− 30	+ 28	− 3	− 127	− 108	− 25
γ Aquilæ	+ 163	+ 29	− 2	− 35	− 85	− 2
α Aquilæ	− 12	+ 18	− 13	− 50	− 37	+ 46
β Aquilæ	+ 141	+ 26	− 5	− 67	− 89	− 6
α^2 Capricorni	− 17	+ 7	− 24	− 20	+ 1	+ 84
α Aquarii	− 115	+ 16	− 15	− 74	− 22	+ 61
α Pegasi	+ 7	+ 29	− 2	− 100	− 92	− 9
α Andromedæ	− 73	+ 45	+ 14	− 187	− 159	− 76

Corrections to right ascensions, &c.—Continued.

Star.	Maskelyne, 1805.			Auwers' Cacciotore.		
	c_3	c_3'	c_3''	c_4	c_4'	c_4''
γ Pegasi	− 148	− 152	− 24	+ 56	+ 52	+ 29
α Arietis	− 148	− 133	− 5	− 23	− 8	− 31
α Ceti	− 228	− 243	− 115	+ 27	+ 12	− 11
α Tauri	− 111	− 94	+ 34	+ 14	+ 31	+ 8
β Orionis. . . .	− 139	− 159	− 31	+ 61	+ 41	+ 18
β Tauri	− 62	− 101	+ 27	+ 110	+ 71	+ 48
α Orionis. . . .	− 123	− 129	− 1	+ 112	+ 106	+ 83
β Geminorum . .	− 189	− 161	− 33	+ 65	+ 93	+ 70
α Hydræ	− 133	− 106	+ 22	+ 28	+ 55	+ 32
α Leonis	− 173	− 136	− 8	+ 25	+ 62	+ 39
β Leonis	− 98	− 88	+ 40	+ 21	+ 31	+ 8
α Virginis . . .	− 122	− 93	+ 35	− 29	0	− 23
α Bootis	− 97	− 82	+ 46	+ 22	+ 37	+ 14
α^2 Libræ	− 50	− 101	+ 27	− 2	− 53	− 76
α Coronæ . . .	− 120	− 96	+ 32	− 74	− 50	− 73
α Serpentis . . .	− 125	− 148	− 20	− 53	− 76	− 99
α Scorpii	− 206	− 223	− 95	+ 69	+ 52	+ 29
α Herculis . . .	− 111	− 91	+ 37	− 81	− 61	− 84
α Ophiuchi . . .	− 163	− 131	− 3	− 28	+ 4	− 19
α Lyræ	− 65	− 51	+ 77	− 5	+ 9	− 14
γ Aquilæ	− 71	− 111	+ 17	+ 54	+ 14	− 9
α Aquilæ	− 162	− 151	− 23	+ 44	+ 55	+ 32
β Aquilæ	− 120	− 135	− 7	+ 17	+ 2	− 21
α^2 Capricorni . . .	− 148	− 126	+ 2	− 20	+ 2	− 21
α Aquarii	− 208	− 164	− 36	− 5	+ 39	+ 16
α Pegasi	− 140	− 133	− 5	+ 47	+ 54	+ 31
α Andromedæ . .	− 146	− 125	+ 3	+ 23	+ 44	+ 21

Corrections to right ascensions, &c.—Continued.

Star.	Bessel I, 1815.			Bessel II, 1825.		
	c_5	c_5'	c_5''	c_6	c_6'	c_6''
γ Pegasi	+ 140	+ 151	+ 98	0	+ 22	+ 27
α Arietis	+ 123	+ 120	+ 67	0	— 17	— 12
α Ceti	+ 126	+ 100	+ 47	0	— 35	— 30
α Tauri	+ 20	+ 27	— 26	0	0	+ 5
β Orionis. . . .	— 8	— 33	— 86	0	— 30	— 25
β Tauri	+ 32	+ 10	— 43	0	— 9	— 4
α Orionis. . . .	— 45	— 51	— 104	0	— 3	+ 2
β Geminorum . .	— 5	— 3	— 51	0	— 17	— 12
α Hydræ	— 78	— 82	— 135	0	— 28	— 23
α Leonis	— 16	— 2	— 55	0	— 4	+ 1
β Leonis	+ 34	+ 21	— 32	0	— 31	— 26
α Virginis . . .	— 8	+ 14	— 39	0	+ 17	+ 22
α Bootis	+ 38	+ 40	— 13	0	— 8	— 3
$α^2$ Libræ	+ 166	+ 139	+ 86	0	— 8	— 3
α Coronæ . . .	+ 102	+ 109	+ 56	0	— 6	— 1
α Serpentis . . .	+ 83	+ 73	+ 20	0	+ 1	+ 6
α Scorpii	+ 121	+ 118	+ 65	0	+ 7	+ 12
α Herculis . . .	+ 53	+ 66	+ 13	0	+ 7	+ 12
α Ophiuchi . . .	+ 27	+ 20	— 33	0	— 37	— 32
α Lyræ	+ 56	+ 61	+ 8	0	— 2	+ 3
γ Aquilæ	+ 65	+ 44	— 9	0	— 6	— 1
α Aquilæ	+ 48	+ 55	+ 2	0	+ 4	+ 9
β Aquilæ	+ 63	+ 71	+ 18	0	+ 26	+ 31
$α^2$ Capricorni. . .	+ 52	+ 76	+ 23	0	+ 26	+ 31
α Aquarii. . . .	+ 64	+ 37	— 16	0	+ 13	+ 18
α Pegasi	+ 112	+ 116	+ 63	0	+ 2	+ 7
α Andromedæ . .	+ 123	+ 123	+ 70	0	— 17	— 12

Corrections to right ascensions, &c.—Continued.

Star.	Struve.			Brinkley.		
	c_7	c_7'	c_7''	c_8	c_8'	c_8''
γ Pegasi	+ 11	+ 35	− 1	− 150	− 126	+ 9
α Arietis	+ 57	+ 38	+ 2	− 93	− 112	+ 23
α Ceti	+ 73	+ 37	+ 1	− 150	− 186	− 51
α Tauri	+ 22	+ 21	− 15	− 145	− 146	− 11
β Orionis	+ 119	+ 89	+ 53	− 82	− 112	+ 23
β Tauri	+ 20	+ 14	− 22	− 152	− 160	− 25
α Orionis	+ 28	+ 22	− 14	− 128	− 134	+ 1
β Geminorum	+ 34	+ 13	− 23	− 80	− 101	+ 34
α Hydræ	+ 93	+ 61	+ 25	− 6	− 38	+ 97
α Leonis	+ 39	+ 32	− 4	− 137	− 144	− 9
β Leonis	+ 58	+ 24	− 12	− 110	− 144	− 9
α Virginis	+ 4	+ 20	− 16	− 182	− 166	− 31
α Bootis	+ 29	+ 19	− 17	− 139	− 149	− 14
α^2 Libræ	+ 22	+ 17	− 19	− 126	− 131	+ 4
α Coronæ	+ 73	+ 66	+ 30	− 137	− 144	− 9
α Serpentis	+ 71	+ 74	+ 38	− 156	− 153	− 18
α Scorpii	+ 44	+ 52	+ 16	− 186	− 177	− 42
α Herculis	+ 67	+ 74	+ 38	− 115	− 108	+ 27
α Ophiuchi	+ 118	+ 76	+ 40	− 81	− 123	+ 12
α Lyræ	− 6	− 9	− 45	− 101	− 104	+ 31
γ Aquilæ	+ 50	+ 46	+ 10	− 146	− 150	− 15
α Aquilæ	+ 27	+ 30	− 6	− 148	− 145	− 10
β Aquilæ	+ 10	+ 39	+ 3	− 205	− 176	− 41
α^2 Capricorni	+ 37	+ 63	+ 27	− 189	− 163	− 28
α Aquarii	+ 21	+ 33	− 3	− 127	− 115	+ 20
α Pegasi	+ 5	+ 7	− 29	− 132	− 130	+ 5
α Andromedæ	− 6	− 25	− 61	− 87	− 106	+ 29

Corrections to right ascensions, &c.—Continued.

Star.	Argelander.			Pulkowa.		
	c_9	c_9'	c_9''	c_{10}	c'	c_{10}''
γ Pegasi	− 15	+ 14	. .	− 59	− 11	− 6
α Arietis	+ 28	+ 2	. .	+ 62	+ 8	+ 13
α Ceti	+ 26	− 15	. .	+ 54	0	+ 5
α Tauri	+ 12	+ 8	. .	+ 6	− 16	− 11
β Orionis	+ 9	− 23	. .	+ 38	+ 2	+ 7
β Tauri	+ 13	+ 12	. .	− 17	+ 10	+ 15
α Orionis	+ 17	+ 11	. .	− 13	− 17	− 12
β Geminorum	+ 44	+ 14	. .	+ 70	+ 1	+ 6
α Hydræ	+ 44	− 1	. .	+ 90	0	+ 5
α Leonis	+ 12	0	. .	+ 50	− 3	+ 2
β Leonis	+ 42	− 1	. .	+ 75	0	+ 5
α Virginis	− 26	− 13	. .	+ 3	+ 2	+ 7
α Bootis	+ 8	− 6	. .	+ 38	+ 5	+ 10
α² Libræ	− 8	− 4	. .	− 60	− 16	− 11
α Coronæ	+ 36	+ 22	. .	+ 34	− 7	− 2
α Serpentis	− 2	+ 6	. .	− 37	− 8	− 3
α Scorpii	− 55	− 41	. .	− 54	− 19	− 14
α Herculis	+ 6	+ 10	. .	− 15	− 23	− 18
α Ophiuchi	+ 73	+ 16	. .	+ 94	− 21	− 16
α Lyræ	+ 6	0	. .	+ 34	+ 12	+ 17
γ Aquilæ	+ 7	+ 10	. .	− 31	+ 5	+ 10
α Aquilæ	− 5	− 3	. .	+ 7	+ 1	+ 6
β Aquilæ	− 34	+ 4	. .	− 75	− 5	0
α² Capricorni	− 58	− 31	. .	− 32	− 7	− 2
α Aquarii	− 26	− 21	. .	+ 16	− 10	− 5
α Pegasi	+ 7	+ 8	. .	− 11	− 15	− 10
α Andromedæ	+ 41	+ 13	. .	+ 63	+ 1	+ 6

Corrections to right ascensions, &c.—Continued.

Star.	Greenwich, 1864.			Washington.		
	c_{11}	c_{11}'	c_{11}''	c_{12}	c_{12}'	c_{12}''
γ Pegasi	− 124	− 51	− 30	− 59	+ 22	− 12
α Arietis	+ 53	− 33	− 12	+ 123	+ 27	− 7
α Ceti.	+ 58	− 13	+ 8	+ 132	+ 56	+ 22
α Tauri	+ 40	+ 1	+ 22	+ 91	+ 48	+ 14
β Orionis. . . .	+ 24	− 18	+ 3	− 73	+ 29	− 5
β Tauri	− 58	0	+ 21	− 52	+ 16	− 18
α Orionis. . . .	+ 6	+ 3	+ 24	+ 38	+ 35	+ 1
β Geminorum . .	+ 111	− 3	+ 18	+ 151	+ 23	− 11
α Hydræ	+ 129	− 15	+ 6	+ 185	+ 23	− 11
α Leonis	+ 83	− 13	+ 8	+ 148	+ 39	+ 5
β Leonis	+ 110	− 4	+ 17	+ 160	+ 33	− 1
α Virginis . . .	− 22	− 38	− 17	+ 57	+ 37	+ 3
α Bootis	+ 39	− 17	+ 4	+ 97	+ 33	− 1
α^2 Libræ	− 93	− 5	+ 16	− 67	+ 34	0
α Coronæ . . .	+ 48	− 23	− 2	+ 98	+ 17	− 17
α Serpentis . . .	− 79	− 25	− 4	− 32	+ 29	− 5
α Scorpii	− 91	− 32	− 11	− 19	+ 48	+ 14
α Herculis . . .	+ 12	− 10	+ 11	+ 62	+ 35	+ 1
α Ophiuchi . . .	+ 178	− 5	+ 16	+ 246	+ 42	+ 8
α Lyræ	+ 9	− 29	− 8	+ 68	+ 25	− 9
γ Aquilæ	− 117	− 46	− 25	− 42	+ 40	+ 6
α Aquilæ	− 32	− 18	+ 3	+ 49	+ 34	0
β Aquilæ	− 148	− 39	− 18	− 89	+ 33	− 1
α^2 Capricorni. . .	− 54	− 29	− 8	0	+ 25	− 9
α Aquarii. . . .	+ 6	− 53	− 32	+ 115	+ 46	+ 12
α Pegasi	− 20	− 30	− 9	+ 60	+ 49	+ 15
α Andromedæ . .	+ 78	− 22	− 1	+ 151	+ 40	+ 6

The following are the values of x and y, in which the units are thousandths of seconds of time:

Star.	x	y
γ Pegasi	− 18	− 127
α Arietis	+ 12	+ 167
α Ceti	+ 32	+ 89
α Tauri	− 3	+ 93
β Orionis	+ 28	+ 32
β Tauri	+ 14	− 165
α Orionis	+ 5	− 5
β Geminorum	+ 10	+ 236
α Hydræ	+ 19	+ 286
α Leonis	− 3	+ 225
β Leonis	+ 24	+ 206
α Virginis	− 19	+ 78
α Bootis	+ 4	+ 121
α² Libræ	+ 15	− 233
α Coronæ	+ 1	+ 160
α Serpentis	+ 3	− 129
α Scorpii	− 3	− 128
α Herculis	− 9	+ 72
α Ophiuchi	+ 26	+ 357
α Lyræ	− 1	+ 88
γ Aquilæ	+ 12	− 188
α Aquilæ	− 5	+ 39
β Aquilæ	− 19	− 206
α² Capricorni	− 25	− 1
α Aquarii	− 18	+ 174
α Pegasi	− 3	+ 29
α Andromedæ	+ 11	+ 199

§ 3.

DISCUSSION OF PROBABLE ERROR.

From these discordances we shall next deduce the probable error of the resulting x and y. It is well known that results for probable error generally prove entirely illusory. This does not arise from any defect in the theory of the subject, but from the fact that the probable error generally has to be deduced from the discordances among a series of results affected by some common source of error, which changes all the results in the same way, and is, therefore, not eliminated from the mean. But the twelve star-catalogues here employed may be regarded as absolutely independent of each other.

In deducing the probable error from each series of residuals, I take the mean value of the residuals without regard to the sign. In the more elegant method of deducing the probable error from the sum of the squares of the residuals, it seems to me that too much weight is assigned to those large residuals the presence or absence of which is a matter of chance. The probable error being proportional to the mean error, and only a little smaller, I shall use the latter throughout instead of the former. The mean values of the numbers found in the third columns, taken without regard to the sign, are as follows:

1.	Auwers' Bradley	10.7
2.	Piazzi	49
3.	Maskelyne	30
4.	Auwers' Cacciotore	36
5.	Bessel I	47
6.	Bessel II	13.7
7.	Struve	21.1
8.	Brinkley	23.3
9.	Argelander	11.4
10.	Pulkowa	8.2
11.	Greenwich	13.1
12.	Washington	7.9

Had the catalogues all been entirely accordant, these residuals would all have been zero. Let us next see in what manner they are made up. In the case of Bradley the residual is formed by subtracting from each c_1 the value of $x - 0.65\,y$ deduced from the expression on page 10, substituting for c_1, c_2, etc., their values found in the preceding table. Substituting in this expression these values of x and y in terms of c_1, c_2, etc., which have already been given, we find—

$$x - 0.65\,y = .68\,c_1 + .10\,c_2 + .09\,c_3 + .09\,c_4 + .06\,c_5 + .14\,c_6 + .13\,c_7 \\ + .04\,c_8 + .07\,c_9 - .07\,c_{10} - .12\,c_{11} - .22\,c_{12}$$

Subtracting this from c_1, the difference is—

$$.32\,c_1 - .10\,c_2 - .09\,c_3 - .09\,c_4 - .06\,c_5 - .14\,c_6 - .13\,c_7 - .04\,c_8 \\ - .07\,c_9 + .07\,c_{10} + .12\,c_{11} + .22\,c_{12} = c'$$

and it is this expression of which the value is given in the second column under each catalogue in the preceding tables.

Let us now represent by—

$$\varepsilon_1,\ \varepsilon_2,\ \varepsilon_3\ \text{- - - - - -}\ \varepsilon_{12}$$

the probable errors of—

$$c_1,\ c_2,\ c_3\ \text{- - - - - -}\ c_{12}$$

or of the star-positions in each catalogue. The square of the mean error of a sum being equal to the sum of the squares of the individual mean errors, the square of the mean error of the last expression, or of c', will be—

$$.102\,\varepsilon_1^2 + .010\,\varepsilon_2^2 + .008\,\varepsilon_3^2 + .008\,\varepsilon_4^2 + .004\,\varepsilon_5^2 + .029\,\varepsilon_6^2 + .017\,\varepsilon_7^2 + .002\,\varepsilon_8^2 \\ + .005\,\varepsilon_9^2 + .005\,\varepsilon_{10}^2 + .014\,\varepsilon_{11}^2 + .048\,\varepsilon_{12}^2$$

The mean Bradley residual being 10.7, the value of this expression is 114.

A similar equation being formed for each of the twelve catalogues, we have twelve equations of the first degree, which suffice completely to determine the twelve values of

ε, and therefore the mean error of each catalogue. These equations are as follows, writing only the co-efficients of the unknown quantities:

ε_1^2	ε_2^2	ε	ε_4^2	ε_5^2	ε_6^2	ε_7^2	ε_8^2	ε_9^2	ε_{10}^2	ε_{11}^2	ε_{12}^2	
.102	.010	.008	.008	.004	.020	.017	.002	.005	.005	.014	.048	= 114
.109	.866	.004	.004	.002	.014	.014	.001	.006	.012	.0	.0	=2601
.084	.002	.902	.004	.002	.014	.012	.001	.000	.017	.000	.000	= 900
.084	.002	.004	.902	.002	.014	.012	.001	.0	.017	.0	.0	=1296
.036	.002	.002	.002	.922	.012	.012	.001	.006	.032	.002	.006	=2209
.022	.002	.002	.002	.002	.792	.012	.001	.006	.040	.005	.010	= 196
.020	.002	.002	.002	.002	.012	.792	.001	.006	.044	.005	.012	= 441
.020	.002	.002	.002	.002	.012	.012	.940	.006	.044	.005	.012	= 529
.012	.001	.001	.001	.002	.012	.012	.001	.846	.048	.006	.017	= 121
.001	.000	.000	.000	.001	.010	.010	.001	.006	.504	.017	.044	= 67
.029	.000	.000	.000	.001	.008	.010	.001	.006	.137	.672	.090	= 170
.048	.000	.000	.000	.000	.008	.010	.001	.006	.152	.036	.462	= 63

These equations will give the middle series of probable errors with great certainty; but those which lie near the extremes in point of time will be quite uncertain, the necessary uncertainty of the last members of each equation being considerably exaggerated in the result. If we solve by successive approximation, the equations for determining ε_1^2 and ε_{12}^2 will be—

$$.102\,\varepsilon_1^2 = 114 - 74 = 40\,; \quad \varepsilon_1 = 0^s.020$$
$$.462\,\varepsilon_{12}^2 = 63 - 55 = 8\,; \quad \varepsilon_{12} = 0^s.004$$

We may roughly estimate the uncertainty of the second members of the preceding equations as equal to one-fifth of their entire amount, so that the number for which we have found the value 114 might have ranged anywhere between 91 and 135, while that which we have found to be 63 might have ranged between 50 and 76. Hence the value of ε_1 may, from this cause alone, range between $0^s.013$ and $0^s.025$, and that of ε_{12} between zero and $0^s.007$. In the latter case we have an independent means of estimating the probable error. The catalogue result actually employed is the mean of two nearly independent determinations with different instruments. The mean difference of the results was $0^s.013$. We may therefore put $0^s.006$ as the inferior limit of ε_{12}. To make the estimate too great rather than too small, I have supposed ε_{12} to be $0^s.008$, and hence obtained the following series of probable errors, which nearly satisfy all the equations except the last:

s.

$\varepsilon_1 = .019$ $\varepsilon_1^2 = 361$
$\varepsilon_2 = .054$ $\varepsilon_2^2 = 2916$
$\varepsilon_3 = .030$ $\varepsilon_3^2 = 900$
$\varepsilon_4 = .037$ $\varepsilon_4^2 = 1369$
$\varepsilon_5 = .048$ $\varepsilon_5^2 = 2304$
$\varepsilon_6 = .014$ $\varepsilon_6^2 = 196$
$\varepsilon_7 = .023$ $\varepsilon_7^2 = 529$
$\varepsilon_8 = .023$ $\varepsilon_8^2 = 529$
$\varepsilon_9 = .010$ $\varepsilon_9^2 = 100$
$\varepsilon_{10} = .010$ $\varepsilon_{10}^2 = 100$
$\varepsilon_{11} = .014$ $\varepsilon_{11}^2 = 196$
$\varepsilon_{12} = .008$ $\varepsilon_{12}^2 = 64$

It may be remarked that the only uncertainty among these probable errors which materially affect our final result for the probable error of the concluded positions is that of ε_1.

To find the probable error of a computed star-position at the time t, we must substitute the values of x and y in the expression $x + yt$, which gives the correction to the *Tabulæ Regiomontanæ* at the time t. Calling this correction Δ we have—

$$\begin{aligned}\Delta = &+ (.17 - .78t)\, c_1 \\ &+ (.04 - .10t)\, c_2 \\ &+ (.04 - .08t)\, c_3 \\ &+ (.04 - .08t)\, c_4 \\ &+ (.04 - .03t)\, c_5 \\ &+ (.11 - .04t)\, c_6 \\ &+ (.11 - .03t)\, c_7 \\ &+ (.03 - .01t)\, c_8 \\ &+ (.08 + .01t)\, c_9 \\ &+ (.19 + .40t)\, c_{10} \\ &+ (.06 + .27t)\, c_{11} \\ &+ (.09 + .47t)\, c_{12}\end{aligned}$$

The square of the probable error of this expression will be—

$$(.17 - .78t)^2\, \varepsilon_1^2 + (.04 - .10t)^2\, \varepsilon_2^2 + \text{etc.} = 36 - 125t + 303t^2$$

t being, it will be remembered, the fraction of a century after 1820. This expression would attain its minimum in 1840, when its value would be—

$$\varepsilon^2 = 23 \text{ or } \varepsilon = 0^s.0048$$

At any other time T its value will be—

$$\varepsilon^2 = 23 + 303\left(\frac{\mathrm{T} - 1840}{100}\right)^2$$

Owing to the independence of the twelve determinations on which the concluded positions rest, I conceive that this expression for the probable error is not entirely illusory, but is very nearly real. Of the exactness of the constant term no serious doubt can be entertained. But the co-efficient 303 multiplied by the square of the time depends very largely on the concluded probable error of Auwers' Bradley, and we have seen that there is some uncertainty in this determination. If this probable error is really as great as $0^s.025$, which we have seen to be quite possible, we should have—

$$\varepsilon^2 = 23 + 464\left(\frac{\mathrm{T} - 1841}{100}\right)^2$$

The first expression will give for the probable error in 1900—

$$\varepsilon = 0^s.011$$

while the second will give—

$$\varepsilon = 0^s.014$$

It must be understood that these results for probable error are true only on the assumption that the proper motion of each star carries it forward on a great circle with a uniform velocity.

§ 4.

SYSTEMATIC DISCORDANCES AMONG THE CATALOGUES.

Let us next inquire how far the outstanding residuals of the corrections to each catalogue are of a systematic character depending either upon the right ascension or declination. I have already set forth the reasons for believing that the systematic errors to be looked for are those depending on the sine and cosine of the right ascension. Let us then suppose the residuals of each catalogue to be of the form—

$$m \cos \alpha + n \sin \alpha + c$$

If we put r_1, r_2, etc., for the residuals corresponding to the several stars we shall have twenty-seven equations of the form—

$$m \cos \alpha_i + n \sin \alpha_i + c = r_i$$

from which to determine m, n, and c. If these equations be solved by least squares, the normal equations will be—

$$m \Sigma \cos^2 \alpha + n \Sigma \sin \alpha \cos \alpha + c \Sigma \cos \alpha = \Sigma r \cos \alpha$$
$$m \Sigma \sin \alpha \cos \alpha + n \Sigma \sin^2 \alpha + c \Sigma \sin \alpha = \Sigma r \sin \alpha$$
$$m \Sigma \cos \alpha + n \Sigma \sin \alpha + 27 c = \Sigma r$$

Owing to the minuteness of the quantities $\Sigma \cos \alpha$, $\Sigma \sin \alpha$, m, and n, and to the fact that when we take the residuals c_3 in the third column of the table of catalogues we have $\Sigma r = 0$, we may, using these same residuals, determine m and n from the first two equations, putting $c = 0$. Putting for $\Sigma \cos^2 \alpha$, etc., their values derived from the right ascensions of the twenty-seven stars in question at or near the mean epoch, these equations become—

$$11.74\, m + 0.93\, n = \Sigma r \cos \alpha$$
$$0.93\, m + 15.26\, n = \Sigma r \sin \alpha$$

which give—

$$11.68\, m = \Sigma r (\cos \alpha - .06 \sin \alpha)$$
$$15.19\, n = \Sigma r (\sin \alpha - .08 \cos \alpha)$$

Computing the values of m and n corresponding to each catalogue from these formulæ, we find that the residuals in the second column, which represent the excess of the catalogue right ascension over that computed, may be represented as follows:

No.	Catalogue.	Systematic residuals.
		s. s. s.
1	Auwers' Bradley	$r = +.031 - .003 \cos \alpha + .007 \sin \alpha$
2	Piazzi, (1800)	$r = -.087 + .003 \cos \alpha - .001 \sin \alpha$
3	Maskelyne, (1805)	$r = -.128 - .019 \cos \alpha - .006 \sin \alpha$
4	Auwers' Cacciotore	$r = +.023 + .010 \cos \alpha + .033 \sin \alpha$
5	Bessel I, (1815)	$r = +.053 + .037 \cos \alpha - .037 \sin \alpha$
6	Bessel II, (1825)	$r = -.005 + .006 \cos \alpha - .010 \sin \alpha$
7	Struve, (1825)	$r = +.036 - .007 \cos \alpha - .005 \sin \alpha$
8	Brinkley, (1825	$r = -.135 - .002 \cos \alpha + .009 \sin \alpha$
9	Argelander, (1828)	$r = .000 + .001 \cos \alpha + .002 \sin \alpha$
10	Pulkowa, (1845)	$r = -.005 + .001 \cos \alpha + .002 \sin \alpha$
11	Greenwich, (1864)	$r = -.021 - .011 \cos \alpha + .010 \sin \alpha$
12	Washington, (1870)	$r = +.034 + .004 \cos \alpha - .001 \sin \alpha$

The catalogues in which the periodic character of the residual is most strongly indicated are Auwers' Cacciotore, Bessel I, and Greenwich. In the case of the latter the systematic difference, small as it is, makes up the greater part of the residual, since, if it is subtracted, the mean value of the residual is reduced from .0131 to .0064, while the probable error is reduced in an even larger proportion. Taking away the three catalogues just mentioned, the co-efficients *m* and *n* are no greater than might result from the accumulation of accidental errors; it is therefore doubtful whether we ought to regard them as real.

To find what discrepancies depending on the declinations are indicated, I have grouped the twenty-seven stars as follows:

7 stars north of + 20°
11 stars between + 6° and + 16°
9 stars south of + 6°

The mean residual from the third column corresponding to each group is—

Catalogue.	North group.	Middle.	South.
	s.	s.	s.
Bradley	+ .006	.000	− .006
Piazzi	− .046	− .013	+ .049
Maskelyne . . .	+ .021	.000	− .022
Cacciotore. . . .	+ .005	+ .002	− .006
Bessel I	+ .013	− .006	− .004
Bessel II	− .006	+ .001	+ .004
Struve	− .019	+ .004	+ .010
Brinkley	+ .010	− .002	− .005
Argelander	+ .008	+ .007	− .016
Pulkowa	+ .008	− .005	− .001
Greenwich. . . .	+ .003	+ .004	− .006
Washington . . .	− .008	+ .003	+ .003

Notwithstanding their general minuteness, these residuals depending on the declination are more certainly indicated than those depending on the right ascension. The catalogues in which they are largest, those of Piazzi and Maskelyne, have received but a small weight in the preceding discussion. In all the others, with the possible exception of Struve, they are so small that they may be treated as accidental errors. Their further consideration is therefore, for the present, omitted.

§ 5.

DETERMINATION OF THE POSITION AND MOTION OF THE EQUINOX.

For the determination of the common correction to the right ascensions of all stars on account of error in the assumed equinoctial point, we are still dependent entirely on observations of the sun. We may ultimately hope to determine some of the quantities on which the absolute positions of the stars depend from observations and theories of the planets, the orbit of each planet, when corrected for perturbations, being a fixed great circle, and the planets being susceptible of more accurate observation than the sun, but this course is not possible at present. It is well known that the best determinations of the equinox exhibit discordances far larger than can result from purely accidental errors of observation, and so indicate the existence of systematic errors in the observations of the sun, the nature and cause of which are obscure. The determination of each co-ordinate of the sun seems about equally liable to them. We know that the absolute right ascension of a star depends effectively upon two elements, to be determined from observation, namely:

1. The moment at which the sun crossed the equinox, from which its absolute right ascension at any time may be obtained, the elements of its orbit being known.

2. The difference of right ascension between the sun and a star, from which the absolute right ascension of the latter is obtained from that of the former.

Since any error depending on the sun's zenith distance will, in the first determination, be eliminated from the mean of the two equinoxes, it might be supposed that there would be a general agreement among different authorities in this determination. But such is by no means the case, and I can assign no probable cause for the observed discrepancies.

With reference to the second determination, it is well known that the personal equation of an observer is frequently different for the sun and for a star, and this difference will appear in the difference of their right ascensions. Diurnal changes in the clock, the instrument, and the personal equation of the observer will also introduce errors into the determination.

Under these circumstances the most we can do is to base our determination on the widest range of material at our disposal, depending for accuracy on the number and variety of the determinations employed rather than upon the precision of any one. All the data at my disposal which did not involve a re-reduction of observations are comprised in the following discussion.

The different common corrections to the preceding determination of right ascensions of stars are represented by *e*. We begin with an examination of those published catalogues in which the star-positions are referred directly to the sun.

BESSEL'S BRADLEY.

The right ascensions of the following stars were determined by Bessel by direct comparison with the sun. Opposite each star is given Auwers' correction to Bessel's position, and the concluded correction already found, the signs being changed:

Star.	B. − A.	B − (1).
		s.
α Tauri	+ .012	+ .063
β Orionis	− .040	− .007
α Orionis	− .030	− .008
β Geminorum . . .	+ .102	+ .143
α Leonis	+ .106	+ .149
α Virginis	+ .042	+ .070
α Bootis.	+ .036	+ .075
α Lyræ	+ .030	+ .058
α Aquilæ	+ .012	+ .030
Mean	+ .030	+ .064

We have, therefore, from Bessel's determination for 1755—

$$e = +0^s.064$$

PIAZZI, 1800.

Of Piazzi's determination of the equinox I know nothing. The mean correction given by his catalogue cannot, therefore, receive much weight, although the geographical position of his observatory is very favorable to its determination. The value of e, resulting from this and from all the other original catalogues employed in the preceding determination is the same with the constant terms in the systematic residuals, given on page 21, and represented by r.

MASKELYNE, 1805.

Maskelyne states that his catalogue was "settled with respect to the equinoctial points, from the observed declinations of the sun about the equinoxes in 1804, 1805, and 1806." With the same catalogue he gives one for 1756, deduced from Bradley's observations, the mean of which is $0^s.10$ less than Bessel's, if we compare the twenty-seven stars under consideration, or $0^s.15$ less, if we compare only the stars which Bessel found by direct comparison with the sun. This large difference may arise from Maskelyne's having used only observations of the sun very near the equinoxes, while Bessel extended his determination to a declination of 14° on each side. An examination of the tables of corrections corresponding to different declinations of the sun, given on page 15 of the Fundamenta, does, in fact, show a systematic difference depending on the declination, but their source and nature are too obscure to admit of much discussion. All we can do is to suppose Maskelyne's determination an independent one, entitled only to small weight.

BESSEL, 1815 AND 1825.

Both Bessel's catalogues are referred directly to the sun. The first depends on three years' observations with the old transit and the Cary circle, numbering 290 in all; the second on five years' observations with the Reichenbach meridian-circle, numbering about 400 in all.

STRUVE, 1825.

Struve's equinox depends on 216 observations of the sun, extending through a period of four years. (Positiones Mediæ, p. xxxx.)

ARGELANDER, 1830.

From a remark in the introduction to his catalogue, page iii, it would appear that Argelander, from his own observations of the sun, found a correction of $+0^s.072$ to the right ascensions of the Tabulæ Regiomontanæ. We have, therefore, on this authority—

$$e = +0^s.064; \text{ epoch, } 1828.$$

POND, 1830.

In the introduction to his "Catalogue of 1112 stars," Pond states that the right ascensions of Maskelyne's last catalogue have been increased by $0^s.20$, being a quantity determined by observations of the sun made about the equinoxes with the present transit-instrument since 1816. The mean value of e given by this catalogue is $+0^s.073$. But, as the mean epoch of the observations is about seven years earlier, we may inquire whether the correction is different for this epoch. A correction of $+0^s.20$ applied to Maskelyne's catalogue for 1805 would leave—

$$e = +.072$$

I infer, therefore, that the correction should have the same value for the mean epoch, which we may consider to be 1825.

AIRY'S GREENWICH CATALOGUES.

The five catalogues published by Airy have been so carefully referred to the sun that they do not appear to need any further discussion. The comparison of the individual catalogues with the positions already found give the following values of e:

		s.
First six-year catalogue	epoch 1839,	$e = -.052$
Second six-year catalogue	1845,	$e = -.003$
Third six-year catalogue	1851,	$e = +.017$
First seven-year catalogue	1857,	$e = -.005$
Second seven-year catalogue	1864,	$e = -.021$

PULKOWA.

The Pulkowa equinox depends on observations of the sun with the transit-instrument and the vertical circle, extending from the year 1842 to 1850. The copious discussion of these observations by Wagner is found in "Observations de Poulkova," vol. III, pp. 41–67.

Adding Washington, 1870, this completes the list of original catalogues referred independently to the sun. But we have still a collection of data in the form of observations of the sun made and reduced at various observatories, and compared with the tables. I have reduced all these in a summary manner, which, though coarse and rude, will, I am persuaded, lead to results differing from those of the most refined discussion only by quantities much smaller than the unavoidable probable errors of the results. The mean correction to the tabular right ascension and declination was taken for each month through a series of years, all the observations made in any month of a given name—January, for instance—being combined into a single mean. This mean was that of the entire number of individual results. The correction to the sun's absolute mean right ascension was then deduced from the observed errors of the tabular declination, being given by the approximate formula—

$$\delta \text{ R. A. (in time)} = \tfrac{1}{36} \Sigma \Delta \delta \cos l$$

l being the sun's longitude, and the factor $\cos l$ being the mean value of the cosine of the sun's true longitude during each month.

The mean correction of the sun's absolute right ascension thus obtained is compared with the correction obtained by comparison with the stars, and the difference, supposed to be due to error in the adopted right ascensions of the latter, gives the mean correction to the equinox to obtain the absolute right ascension of the stars.

PARIS, 1854–'63.—(*Corrections to Carlini's tables.*)

Month.	Δ a	No. of obs.	δ	No. of obs.	cos l	δ cos l
	s.		"			"
January . .	+ .132	56	+ 1.07	43	+ .44	+ 0.47
February . .	+ .154	86	+ 2.76	73	+ .81	+ 2.24
March . . .	+ .165	104	+ 2.68	98	+ .98	+ 2.63
April . . .	+ .209	116	+ 2.25	105	+ .89	+ 2.00
May . . .	+ .245	80	+ 1.78	77	+ .56	+ 1.00
June . . .	+ .234	81	+ 1.20	74	+ .10	+ 0.12
July . . .	+ .207	120	+ 0.80	84	— .39	— 0.31
August . .	+ .213	126	+ 0.19	95	— .79	— 0.15
September .	+ .194	98	— 0.31	76	— .98	+ 0.30
October . .	+ .133	93	+ 0.50	68	— .92	— 0.46
November .	+ .196	72	+ 0.11	52	— .60	— 0.07
December .	+ .148	49	+ 1.30	40	— .10	— 0.13
Sum . .	+ 2.230	.	. .	.	. .	+ 7.64

We hence deduce—

	s.
Mean correction to sun's absolute right ascension	+0.212
Mean correction deduced from stars	+0.186
Therefore star's right ascensions require the correction . .	+0.026

A comparison of the corrections to the Tabulæ Regiomontanæ adopted in the reduction of the Paris observations with those deduced in this paper show that the latter are greater by $0^s.024$. We may therefore put as the result of this series of Paris observations—

$$e = 0^s.000$$

PARIS, 1864–'65—(*Corrections to Le Verrier's tables.*)

Month.	Δ a	No. of obs.	δ	No. of obs.	Δ δ cos l
	s.		"		"
January . .	— .072	10	+ 0.20	7	+ 0.09
February . .	— .060	7	+ 1.35	6	+ 1.11
March . . .	+ .028	16	+ 1.08	16	+ 1.06
April . . .	— .030	24	+ 1.39	22	+ 1.24
May . . .	— .013	21	— 0.05	20	— 0.03
June . . .	— .052	19	— 0.29	18	— 0.03
July . . .	— .064	14	— 0.88	16	+ 0.34
August . .	— .022	13	+ 0.11	14	— 0.09
September .	— .006	23	+ 0.52	25	— 0.51
October . .	— .022	19	+ 0.45	16	— 0.41
November .	+ .037	15	— 1.48	14	+ 0.89
December .	— .017	13	— 0.86	13	+ 0.09
Sum . .	— 0.293	.	. .	.	+ 3.75

We hence deduce—

	s.
Mean correction to sun's absolute right ascension	+ 0.104
Mean correction deduced from stars	— 0.024
Correction to adopted right ascensions of stars	+ 0.128

The Paris concluded right ascensions for 1864 are less than those here deduced by $0^s.013$. The result of these two years' work at Paris is therefore—

$$e = +0^s.115$$

In the following two years nearly all the observations of the sun at Paris were made by a single observer, whose results are remarkably different from those of other observers, as may be seen by the very large and uniformly positive corrections to the right ascension and longitude of the sun, given in the collected results of the observations. This error evidently arises from the personal equation of the observer not being the same for the sun and for a star. Such differences are known to exist, but they are generally so minute as hardly to admit of positive detection. We have, however, one or two cases of the differences attaining an extraordinary magnitude, and, as they do not follow the usual law of error in their distribution among different observers, we must reject entirely the cases in question.

CAMBRIDGE, (ENGLAND.)

The results of the observations of the sun during the five years 1833–'37 are as follows:

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	s.		″		″
January . .	+ .203	31	+ 1.00	30	+ 0.44
February . .	+ .195	40	+ 0.96	41	+ 0.80
March . . .	+ .175	44	+ 0.18	44	+ 0.18
April . . .	+ .230	55	+ 0.36	56	+ 0.32
May . . .	+ .215	96	+ 0.68	95	+ 0.38
June . . .	+ .138	71	+ 0.35	77	+ 0.04
July . . .	+ .205	59	+ 0.66	58	— 0.26
August . .	+ .182	77	+ 0.14	80	— 0.11
September . .	+ .208	65	+ 0.07	65	— 0.07
October . .	+ .180	73	+ 0.46	75	— 0.43
November . .	+ .237	61	+ 0.79	59	— 0.47
December . .	+ .175	42	+ 0.93	37	— 0.09
Sum . .	+ 2.343	.	. .	.	+ 0.73

	s.
Mean correction to sun's absolute right ascension	+ 0.020
Correction deduced from stars	+ 0.195
Correction to adopted right ascension of stars	— 0.175
Adopted right ascensions *greater* than ours by	0.146

Hence—

$$e = -0^s.03; \text{ epoch, } 1835.$$

In subsequent years the discussion of the correction for each year in which sufficient observations of the sun were made is given along with the results of the observations. The following are the mean values of e for series, each including five years' actual observation:

$$\begin{aligned} & \qquad\quad \text{s.} \\ 1841,\ e &= +0.06 \\ 1849,\ e &= +0.06 \\ 1856,\ e &= -0.01 \end{aligned}$$

OXFORD.

Since 1861 the sun has been pretty regularly observed at the Radcliffe Observatory, and the apparent errors of the tabular positions are given in the results of each year's observations. They are divided into two series, the first comprising the years 1861–'63, in which the results are compared with Carlini's tables, and the observations are considerably scattered; the second, comprising the years 1864–'68, during which the comparison has been made with Le Verrier's tables.

The tabular summary of the results for the years 1861–'63 is as follows:

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	s.		''		''
January . .	+ .18	9	+ 0.2	12	+ 0.1
February . .	+ .40	14	+ 0.6	14	+ 0.5
March . . .	+ .34	12	+ 0.6	15	+ 0.6
April . . .	+ .32	19	+ 1.4	19	+ 1.3
May . . .	+ .33	16	+ 1.5	11	+ 0.8
June . . .	+ .16	13	+ 0.6	11	+ 0.1
July . . .	+ .30	16	+ 0.5	17	− 0.2
August . .	+ .38	8	+ 1.4	8	− 1.1
September . .	+ .35	14	− 1.3	14	+ 1.3
October . .	+ .53	7	+ 0.8	9	− 0.7
November . .	+ .46	15	+ 0.7	15	− 0.4
December . .	+ .40	12	+ 2.3	12	− 0.2
Sum . .	+ 4.15				+ 2.1

	s.
Mean correction to sun's absolute right ascension	+ 0.06
The same deduced from stars	+ 0.35
Correction to adopted right ascension of stars	− 0.29

These adopted right ascensions are the same as those used during the corresponding year in the reduction of the Greenwich observations, the mean of which corresponds very nearly to our adopted results. We have, therefore, from these Radcliffe observations—

$$e = -0^{s}.29;\ \text{epoch, } 1862.$$

The great and improbable magnitude of this result renders the question of its introduction somewhat embarrassing.

For the five subsequent years, 1864–'68, we have—

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	$s.$		$''$		$''$
January . .	+ .11	36	+ 2.0	36	+ 0.9
February . .	+ .10	37	+ 1.0	37	+ 0.8
March . . .	+ .13	28	+ 1.0	27	+ 1.0
April . . .	+ .17	43	− 0.1	45	− 0.1
May . . .	+ .15	45	− 0.1	47	− 0.1
June . . .	+ .08	56	− 0.7	55	− 0.1
July . . .	+ .06	55	+ 0.3	57	− 0.1
August . .	+ .08	47	+ 0.7	47	0.6
September . .	+ .08	52	+ 0.1	50	+ 0.1
October . .	+ .10	46	− 0.2	47	+ 0.2
November . .	+ .12	42	+ 1.0	41	− 0.6
December . .	+ .10	28	+ 1.4	28	− 0.1
Sum . .	+ 1.28	.	. .	.	+ 1.1

	$s.$
Correction to sun's absolute right ascension - - - -	+ 0.03
Correction deduced from stars - - - - - - - -	+ 0.11
Correction to adopted right ascension of stars - -	− 0.08

The adopted right ascensions being still the same as at Greenwich, this result gives—

$$e = -0^{s}.09\text{; epoch, 1866.}$$

The correction is still negative, as in the years 1861–'63, though not so great.

A comparison of the Radcliffe results with those derived from the Greenwich observations shows that the difference is found chiefly in the observed relative right ascensions of the sun and stars. Thus, during the years 1861–'63, the mean correction to the sun's right ascension deduced from the Greenwich observations is $+0^{s}.17$, while that from the Radcliffe observations, using the same adopted right ascensions of stars, is $+0^{s}.35$, so that the Radcliffe results are greater by $0^{s}.18$.

An examination of the Radcliffe observations shows that this great discordance did not exist in the year 1861, but commenced in 1862, with the introduction of the new transit-circle. It might, therefore, well give rise to the suspicion that the pointing of the circle is affected with a diurnal change. As the clock-error is determined from observations made at night, a constant error would thus be introduced into the results of transits of the sun. But this explanation seems to be negatived by the fact that the observations of the moon, though made at the same time with the stars, deviate still more widely from the truth. In fact, the mean correction to Hansen's right ascension, given by the observations of 1862, is $+0^{s}.62$, while all other observations show that the right ascension was then very nearly correct. We may hence conclude that the cause is to be sought for in some personal peculiarities of the observers. Though this explanation is made unsatisfactory by the circumstance that the observations of the two principal observers lead to nearly the same result, it is noticeable that in the year 1863 we find four observations of the moon signed M., probably made by the director of the observatory, the mean correction from which is $+ 0^s.035$. This seems, therefore, to be the only admissible explanation.

EDINBURGH.

In the Edinburgh observations for the years 1836–'39 the correction to the equinox is deduced from each year's observations. The mean result is—

$$e = + 0^s.04; \text{ epoch, } 1838.$$

Observations of the sun were continued till 1843. The published corrections to the tables lead to the following mean results:

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	s.		"		"
January . .	+ .17	50	+ 1.3	32	+ 0.6
February . .	+ .12	37	+ 1.3	41	+ 1.1
March . . .	+ .09	53	+ 0.4	60	+ 0.4
April . . .	+ .08	57	+ 0.5	50	+ 0.4
May. . . .	+ .13	42	− 0.1	46	− 0.1
June . . .	+ .11	51	+ 0.8	47	+ 0.1
July. . . .	+ .09	37	− 0.2	43	+ 0.1
August. . .	+ .05	43	− 0.2	44	+ 0.2
September . .	+ .08	44	− 1.0	43	+ 1.0
October . .	+ .18	32	− 0.3	46	+ 0.3
November . .	+ .05	32	+ 0.3	20	− 0.2
December . .	+ .13	38	− 0.3	41	0.0
Sum . .	+ 1.28	.	. .	.	+ 3.9

	s.
Mean correction to sun's absolute right ascension . .	+ 0.108
Mean correction deduced from stars	+ 0.106
Correction to adopted right ascensions	+ 0.002

The adopted right ascensions are $0^s.01$ less than those in this paper; therefore—

$$e = - 0^s.01; \text{ epoch, } 1842.$$

BERLIN.

The introduction to the first volume of the Berlin observations, published by Encke, gives the results of observations of the sun from 1839 to 1842. The following are the mean results:

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	s.		″		″
January . .	— .14	4	— 1.4	5	— 0.6
February . .	+ .04	20	0.0	20	0.0
March . . .	+ .12	5	+ 0.2	4	+ 0.2
April . . .	+ .06	18	+ 0.9	18	+ 0.8
May . . .	+ .02	14	— 0.4	14	— 0.2
June . . .	.00	7	— 1.1	7	— 0.1
July . . .	— .03	7	+ 2.4	6	— 0.9
August . .	+ .12	11	+ 0.1	11	— 0.1
September . .	+ .07	25	0.0	23	0.0
October . .	+ .04	13	— 1.3	10	+ 1.2
November . .	+ .11	14	+ 0.7	14	— 0.4
December . .	+ .11	7	+ 0.2	8	0.0
Sum . .	+ .52	.	. .	.	— 0.1

	s.
Mean correction to absolute right ascension - - - - -	— 0.003
Correction from stars - - - - - - - - - - - - -	+ 0.043
Correction to right ascension of stars - - - - - -	— 0.046

The adopted right ascensions are those of the Tabulæ Regiomontanæ, which at this time are $0^{s}.014$ less than those deduced. We have, therefore,

$$e = -\,0^{s}.06;\ \text{epoch, } 1841.$$

The Berlin observations are distributed among the months with unusual irregularity. Had the mean by weights been taken, the result would have been—

$$e = -\,0^{s}.07$$

WASHINGTON.

The following are the mean results of observations made with the transit-instrument and mural circle during the four years 1862–'65:

Month.	$\Delta\alpha$	No. of obs.	$\Delta\delta$	No. of obs.	$\Delta\delta \cos l$
	s.		″		″
January . .	— 0.052	42	+ 0.17	34	+ 0.07
February . .	— 0.045	42	— 0.30	30	— 0.24
March . . .	— 0.022	41	+ 0.40	31	+ 0.39
April . . .	+ 0.022	41	+ 0.70	36	+ 0.62
May. . . .	— 0.020	53	+ 0.22	53	+ 0.12
June . . .	+ 0.008	50	+ 0.25	66	+ 0.02
July . . .	+ 0.015	51	+ 0.30	55	— 0.12
August. . .	— 0.002	57	0.00	50	0.00
September . .	— 0.038	42	— 0.22	47	+ 0.22
October . .	— 0.033	35	— 0.10	55	+ 0.09
November . .	— 0.027	35	— 0.10	46	+ 0.06
December . .	— 0.052	27	+ 0.57	32	— 0.06
Sum . .	— 0.238	.	. .	.	+ 1.17

	s.
Mean correction to sun's absolute right ascension . .	+0.032
Correction deduced from stars	—0.020
Correction to adopted right ascension of stars	+0.052

The adopted right ascensions are those of Dr. Gould, the mean of which, at this epoch, scarcely differs from that of our deduced positions. We have, therefore, from these observations—

$$e = +0^s.05;\ \text{epoch, } 1864.$$

Since 1866 the observations have been made with the transit-circle, but the instrument was dismounted a part of the time. The first two years' work gave the discordant results—

	s.
1866 - - - -	$e = +0.07$
1867 - - - -	$e = \ \ 0.00$
Mean - - - -	$e = +0.035$

The following are the mean results for 1868–'69:

Month.	Δ α	No. of obs.	Δ δ	No. of obs.	Δ δ cos l
	s.		"		"
January . .	+ 0.10	10	+ 0.8	8	+ 0.4
February . .	+ 0.04	20	+ 0.3	19	+ 0.2
March . . .	+ 0.05	20	+ 0.7	18	+ 0.7
April . . .	+ 0.06	15	+ 0.7	19	+ 0.6
May . . .	+ 0.02	22	0.0	24	0.0
June . . .	+ 0.06	13	— 0.2	13	0.0
July . . .	+ 0.07	15	— 0.3	15	+ 0.1
August . .	+ 0.06	9	+ 0.5	7	— 0.4
September .	+ 0.03	9	— 0.7	9	+ 0.7
October . .	— 0.02	13	— 1.5	14	+ 1.4
November .	+ 0.01	12	— 0.7	12	+ 0.4
December .	+ 0.06	10	— 0.9	10	+ 0.1
Sum . .	+ 0.54	. .	. . .	. .	+ 4.2

	s.
Mean correction to sun's absolute right ascension . .	+0.117
Correction deduced from stars	+0.045

Whence—

$$e = +0^s.07$$

The comparison is with Hansen's tables, the mean right ascension of which is about $0^s.06$ or $0^s.07$ less than that of Le Verrier's tables.

The true value of e being of the form $x' + y'\mathrm{T}$, every separate determination of its value gives an equation of condition between x' and y'. The following is the system of equations thus obtained. I have included the mean result of the Greenwich observations for 1868, 1869, and 1870, which have been published since the appearance of the last Greenwich seven-year catalogue. The Radcliffe results are omitted.

The weights have generally been assigned with reference to the entire number of observations on which each result depends, and also on the number of years over which the observations extend. But they have not been supposed to increase proportionally to either the time or the number of observations, so that, although the weight 1 would be assigned to the result of a single average year's work with the best instruments, the weight assigned to seven consecutive years' work by the same observers, and with the same instruments, is much less than 7. On the same principle, greater proportional weight has been given to isolated determinations than to determinations founded on long series of observations.

Observations.	Year.	Equation.	Years.	Weight.
		s.		
Bessel's Bradley	1756	$x' - .64y' = + .06$	7	3
Piazzi	1800	$x' - .20y' = - .08$	(?	2
Maskelyne	1805	$x' - .15y' = - .13$	2	1
Bessel I	1817	$x' - .03y' = + .05$	3	2
Bessel II	1822	$x' + .02y' = \quad .00$	5	4
Pond	1823	$x' + .03y' = + .07$	14	4
Struve	1825	$x' + .05y' = + .04$	5	4
Argelander	1828	$x' + .08y' = + .06$	4:	3
Cambridge	1835	$x' + .15y' = - .03$	5	2
Edinburgh	1838	$x' + .18y' = + .04$	4	2
Airy	1839	$x' + .19y' = - .05$	6	3
Berlin	1841	$x' + .21y' = - .07$	4	2
Cambridge	1841	$x' + .21y' = + .06$	5	2
Edinburgh	1842	$x' + .22y' = - .01$	4	2
Pulkowa	1845	$x' + .25y' = \quad .00$	8:	5
Greenwich	1845	$x' + .25y' = \quad .00$	6	3
Cambridge	1849	$x' + .29y' = + .06$	5	2
Greenwich	1851	$x' + .31y' = + .02$	6	3
Cambridge	1856	$x' + .36y' = - .01$	5	2
Greenwich	1857	$x' + .37y' = - .01$	7	3
Paris	1859	$x' + .39y' = \quad .00$	10	4
Greenwich	1864	$x' + .44y' = - .02$	7	3
Washington	1864	$x' + .44y' = + .05$	4	4
Paris	1865	$x' + .45y' = + .11$	2	2
Washington	1867	$x' + .47y' = + .05$	4	4
Greenwich	1869	$x' + .49y' = - .03$	3	3

Treating these equations by the method of least squares, we are led to the normal equations—

$$\begin{aligned} 74\ x' + 14.9\ y' &= + 1^{s}.02 \\ 14.9\ x' + 7.4\ y' &= + 0^{s}.17 \end{aligned}$$

the solution of which gives—

$$\begin{aligned} x' &= + 0^{s}.016 \\ y' &= - 0^{s}.009 \end{aligned}$$

The common correction to be applied to the star-positions first deduced is therefore—

$$+0^s.016 - .009\ \mathrm{T}$$

T being the fraction of a century after 1820. Applying these constant corrections to the values of x and y previously found, we shall have a set of corrections to the Tabulæ Regiomontanæ which we may suppose to be free from all systematic error whatever, at least so far as it is possible to free them with our existing data.

§ 6.

CORRECTIONS FOR THE TERMS MULTIPLIED BY THE SECOND AND THIRD POWERS OF THE TIME.

We have hitherto proceeded on the supposition that the necessary corrections to the Tabulæ Regiomontanæ increase uniformly with the time. But, on computing the co-efficients of the second and third powers of the time, in the expression for the mean right ascension of the star at any epoch, and comparing them with those found by induction from the mean places of the Tabulæ Regiomontanæ, it is found that this supposition is not correct. In fact, it appears that Bessel computed the second differential or secular variation of the annual variation without taking any account of the effect of proper motion, and that he considered it constant, thus neglecting the third derivative entirely.

The following table shows, 1, the secular variation of the precession actually employed in the Tabulæ Regiomontanæ; 2, the adopted secular variation of the *annual motion* for 1800, computed from the co-efficients of Struve and Peters, using Hill's formulæ in the "Star Tables of the American ephemeris," page 19; 3, the resulting correction to the first value; 4, the variation of the secular variation in one century, or the value of $\frac{d^3\,\mathrm{R.\,A.}}{d\,\mathrm{T}^3}$, the unit of right ascension being $0^s.001$, and the unit of T one century; 5 and 6, the corrections to x and y necessitated by the addition of these terms to the positions of the Tabulæ Regiomontanæ.

These last terms are derived as follows: Representing, for brevity, by a and b the corrections to Bessel's assumed values of $\frac{d^2\,\mathrm{R.\,A.}}{d\,\mathrm{T}^2}$ and $\frac{d^3\,\mathrm{R.\,A.}}{d\,\mathrm{T}^3}$, the right ascensions of the Tabulæ Regiomontanæ should have received the correction—

$$\tfrac{1}{2}\,a\,\mathrm{T}^2 + \tfrac{1}{6}\,b\,\mathrm{T}^3$$

for the epoch of each catalogue before the comparison with the catalogue. T being here counted from 1800, the values of c_1, c_2, etc., already given, would have been thus changed by the following amounts:

$$c_1 = -0.10a + 0.02b$$
$$c_2 \text{ to } c_4 = 0.$$
$$c_5 = -\ .01a$$
$$c_6 = -\ .03a$$
$$c_7 = -\ .03a$$
$$c_8 = -\ .03a$$
$$c_9 = -\ .04a$$
$$c_{10} = -\ .10a - .02b$$
$$c_{11} = -\ .20a - .04b$$
$$c_{12} = -\ .24a - .06b$$

Substituting these values of c_1, etc., in the expressions for x and y, (p. 10,) we find—

$$\Delta x = -.08\,a - .01\,b$$
$$\Delta y = -.13\,a - .06\,b$$

the values of which are given in the last two columns.

Star.	Bessel's $\frac{d^2 \text{R. A.}}{d\ T^2}$	From Struve, (1800.)	a	b	Δx	Δy
γ Pegasi	+ 970	+ 958	− 12	+ 63	0	− 2
α Arietis	+ 2010	+ 1998	− 12	+ 41	0	− 1
α Ceti.	+ 970	+ 959	− 11	+ 14	+ 1	+ 1
α Tauri	+ 1090	+ 1065	− 25	− 39	+ 2	+ 6
β Orionis. . . .	+ 430	+ 407	− 23	− 14	+ 2	+ 4
β Tauri	+ 890	+ 862	− 28	− 95	+ 3	+ 9
α Orionis. . . .	+ 310	+ 303	− 7	− 42	+ 1	+ 4
α Canis Majoris. .	+ 40	− 64	− 104	− 11		
α Canis Minoris .	− 440	− 515	− 75	− 20		
β Geminorum . .	− 1220	− 1216	+ 4	− 64	0	+ 4
α Hydræ	− 150	− 157	− 7	+ 25	0	− 1
α Leonis	− 1020	− 1039	− 19	+ 37	+ 1	0
β Leonis	− 770	− 768	+ 2	+ 63	− 1	− 4
α Virginis . . .	+ 1120	+ 1111	− 9	+ 50	0	− 2
α Bootis	+ 120	+ 202	+ 82	+ 44	− 7	− 13
α^2 Libræ	+ 1550	+ 1537	− 13	+ 17	+ 1	+ 1
α Coronæ . . .	+ 240	+ 228	− 12	+ 17	+ 1	+ 1
α Serpentis . . .	+ 630	+ 609	− 21	+ 5	+ 2	+ 2
α Scorpii	+ 1570	+ 1549	− 21	− 56	+ 2	+ 6
α Herculis . . .	+ 370	+ 353	− 17	− 11	+ 1	+ 3
α Ophiuchi . . .	+ 350	+ 344	− 6	− 13	+ 1	+ 2
α Lyræ	+ 160	+ 108	− 52	− 6	+ 4	+ 7
γ Aquilæ	− 80	− 99	− 19	− 5	+ 2	+ 3
α Aquilæ	− 140	− 180	− 40	− 7	+ 3	+ 5
β Aquilæ	− 150	− 140	+ 10	− 8	− 1	− 1
α^2 Capricorni . . .	− 810	− 834	− 24	− 18	+ 2	+ 4
α Aquarii . . .	− 430	− 444	− 14	+ 35	+ 1	0
α Pegasi	+ 530	+ 523	− 7	+ 56	0	− 2
α Andromedæ . .	+ 1770	+ 1770	0	+ 83	− 1	− 5

The values of x and y, or the correction to the right ascension and annual variation of the Tabulæ Regiomontanæ for the epoch 1820, may now be found by adding to the values of those quantities already found (p. 17) the constants for correction of equinox + 16 and − 9, and the corrections from the above table. After doing this we have, for convenience of application, transferred the epoch to 1800. Adding the co-efficients for the second and third powers of the time, we have the following values of the corrections in thousandths of seconds of time to the right ascensions of the Tabulæ Regiomontanæ, where we put T = fraction of century after 1800:

Corrections to Tabulæ Regiomontanæ.

γ Pegasi,	Δ R. A. =	+26	−138T	− 6T^2	+10T^3	
α Arietis,		− 3	+157	− 6	+ 7	
α Ceti,		+33	+ 81	− 6	+ 2	
α Tauri,		− 3	+ 90	−12	− 6	
β Orionis,		+41	+ 27	−12	− 2	
β Tauri,		+66	−165	−14	−16	
α Orionis		+24	− 10	− 4	− 7	
α Canis Majoris,		+26	+ 64	−52	− 2	+ *q* (Auwers)
α Canis Minoris,		−27	+127	−38	− 3	+ *q* (Auwers)
β Geminorum,		−20	+231	+ 2	−11	
α Hydræ,		−20	+276	− 4	+ 4	
α Leonis,		−29	+216	−10	+ 6	
β Leonis,		0	+193	+ 1	+10	
α Virginis,		−16	+ 67	− 4	+ 8	
α Bootis		− 7	+ 99	+41	+ 7	
α^2 Libræ,		+80	−241	− 6	+ 3	
α Coronæ,		−12	+152	− 6	+ 3	
α Serpentis,		+48	−136	−10	+ 1	
α Scorpii,		+41	−131	−10	− 9	
α Herculis,		− 5	+ 66	− 8	− 2	
α Ophiuchi,		−27	+350	− 3	− 2	
α Lyræ,		+ 2	+ 86	−26	− 1	
γ Aquilæ,		+69	−194	−10	− 1	
α Aquilæ,		+ 7	+ 35	−20	− 1	
β Aquilæ,		+39	−216	+ 5	− 1	
α^2 Capricorni,		− 6	− 6	−12	− 2	
α Aquarii,		−34	+165	− 7	+ 6	
α Pegasi,		+ 9	+ 18	− 4	+ 9	
α Andromedæ,		−12	+185	0	+14	

We have here added the stars Sirius and Procyon to the list because Auwers has determined their irregular proper motions with sufficient accuracy to allow of their being used as standards of comparison for a long time to come. The following are the details of the operations by which Auwers' results have been applied in the above table.

PROCYON.

By his researches on the proper motion of Procyon, Auwers has found a certain correction, q, to its right ascension, defined as follows: Represent by q_1, q_2, etc., to q_6, the several corrections to be applied to the right ascension of Procyon in Wolfers' "Tabulæ Reductionum," in order that the respective differences between the corrected right ascension and the right ascensions of α Tauri, β Orionis, α Orionis, β Geminorum, α Hydræ, and α Leonis, given in the same tables, may be correct. Then Auwers puts—

$$q = \tfrac{1}{6}\,(q_1 + q_2 + q_3 + q_4 + q_5 + q_6)$$

It follows that if we represent by $\varDelta_1$, $\varDelta_2$, etc., to $\varDelta_6$, the definitive corrections to Wolfers' positions of these six stars, the correction to Wolfers' position of Procyon will be—

$$\tfrac{1}{6} \Sigma \varDelta + q$$

But this result requires a small change arising in this way. Wolfers and Auwers have assumed that the corrections to the mean places of the Tabulæ Regiomontanæ increase uniformly with the time. In other words, it is assumed by Auwers that q is of the form—

$$x + yt + \mathrm{P}$$

P being the purely periodic terms depending on the orbital motion. But, on examining the values of the terms depending on the second and third powers of the time in the preceding table it will be seen that the correction is really of the form—

$$x + y\,t - 0^{\mathrm{s}}.031\ \mathrm{T}^2 + \mathrm{P}$$

To determine rigorously the correction to q which would have been introduced had Auwers taken account of the term in T^2 would be difficult. Owing to the extreme minuteness of the correction, we assume that the effect of changing the term would correspond to the effect of a similar change in the equations used in this paper, or—

$$\varDelta x = \varDelta\,\mathrm{R.\,A.}\ (1820) = -.08\,a = +0^{\mathrm{s}}.005$$
$$\varDelta y = -.13\,a = -.13 \times -62 \quad = +0^{\mathrm{s}}.008$$

The correction to Auwers will then be—

$$+3 + 8\,\mathrm{T} - 31\,\mathrm{T}^2$$

T being the fraction of a century after 1800.

The value of this correction will be only —.006 in 1755, and will not exceed $0^{\mathrm{s}}.003$ during the period 1800 to 1860.

We therefore conclude that the correction to the position of Procyon given in the Tabulæ Reductionum is—

$$\varDelta + 3 + 8\,\mathrm{T} - 31\,\mathrm{T}^2 + q$$

It remains to determine $\varDelta$. Subtracting Wolfers' corrections to the positions of the Tabulæ Regiomontanæ, as found in the Tabulæ Reductionum, pp. xxxv, xxxvi, from the corrections given in the preceding table, it seems that our corrections to Wolfers' positions are as follows:

α Tauri	— 25	— 17 T	— 12 T^2	— 6 T^3
β Orionis	+ 2	— 61	— 12	— 2
α Orionis	+ 1	— 99	— 4	— 7
β Geminorum	— 35	+ 15	+ 2	— 14
α Hydræ	— 40	+ 28	— 4	+ 4
α Leonis	— 47	+ 51	— 10	+ 6
Mean	$\varDelta$ = — 24	— 14 T	— 7 T^2	— 3 T^3

The correction to Wolfers' position of Procyon is, therefore,

$$-21 - 6\,\mathrm{T} - 38\,\mathrm{T}^2 - 3\,\mathrm{T}^3 + q$$

Adding Wolfers' correction to Bessel's position of Procyon, which is—

$$-6 + 133\,\mathrm{T}$$

we have the result given in the table for the correction to the right ascension of Procyon in the Tabulæ Regiomontanæ.

SIRIUS.

Auwers' correction to the position of Sirius is given in a form similar to that adopted for Procyon, but the stars of comparison are β Orionis, α Orionis, and Procyon. The positions adopted for comparison are those of the Tabulæ Regiomontanæ, except that the right ascension of Procyon is first corrected by the quantity—

$$-0^s.025 - 0^s.001386\,(t - 1825) - 0^s.0705 \cos 9^\circ.00634\,(t - 179557)$$

or by the quantity—

$$+10 - 139\,\mathrm{T} + \mathrm{P}$$

P being the periodic term. The terms in the correction to the relative motion of Sirius which depend on the second and third powers of the time are—

$$-34\,\mathrm{T}^2 + 2\mathrm{T}^3$$

and, reasoning as in the case of Procyon, we conclude that Auwers' q should be corrected by the quantity—

$$+4 + 9\,\mathrm{T} - 34\,\mathrm{T}^2 + 2\,\mathrm{T}^3$$

The value of this correction for different dates is—

	s.
1760	— .005
1780	+ .001
1800	+ .004
1820	+ .004
1840	+ .002
1860	— .003
1880	— .010

The correction to the right ascension of Sirius in the Tabulæ Regiomontanæ is, therefore,

$$\varDelta + 4 + 9\,\mathrm{T} - 34\,\mathrm{T}^2 + 2\,\mathrm{T}^3 + q$$

$\varDelta$ being the mean correction to the right ascensions of β Orionis, α Orionis, and Procyon, the latter star being, however, first corrected by the expression given above.

Comparing this expression with Auwers' q, (A. N. No. 1382, p. 62,) the value of which is—

$$39 - 119\,\mathrm{T} - 0^s.0705 \cos n\,(t - \mathrm{T})$$

we see that the preliminary correction to the position of Procyon is—

$$q - 29 - 20\,\mathrm{T}$$

Subtracting this correction from the above correction to Procyon, taking the corrections to β Orionis and α Orionis without change, and representing by Δ_1, Δ_2, and Δ_3 the individual corrections to Auwers' assumed positions of the three stars of comparison, we have—

$$\begin{array}{llllll}
\Delta_1 = & +41 & +\ \ 27\ T & -12\ T^2 & -2\ T^3 \\
\Delta_2 = & +24 & -\ \ 10 & -\ \ 4 & -7 \\
\Delta_3 = & +\ \ 2 & +147 & -38 & -3 \\
\Delta\ \ = & +22 & +\ \ 55\ T & -18\ T^2 & -4\ T^3
\end{array}$$

Adding this to the expression which replaces Auwers' q, we have the result given in the above table.

§ 7.

CORRECTIONS TO DIFFERENT CATALOGUES TO REDUCE THEM TO A MEAN SYSTEM.

The preceding investigations have resulted in giving us a set of 29 right ascensions, which we may suppose to be free from all systematic errors whatever, and of which we may suppose the mean accidental error to be much less than that of any one catalogue determination. We may, therefore, suppose any systematic differences which exhibit themselves between the right ascensions of any catalogue and those just obtained to be due to errors of the former, and from the entire body of the differences we may obtain the correction necessary to reduce it to the standard. This correction may be considered to consist of three parts—

1. A constant, which we may consider as a correction to the adopted equinox.

2. Periodic terms depending on the right ascension, which in all recent catalogues we may suppose to be of the form—

$$m \cos \alpha + n \sin \alpha$$

and to which terms of double period—

$$m' \cos 2\alpha + n' \sin 2\alpha$$

may be added, if it be deemed necessary. In some of the older catalogues, especially in Bessel I, the terms of double period appear to be quite sensible, but they ought not to be real in any modern catalogue.

3. A term depending on the declination, which, within the limits in which the present investigations are applicable, may be regarded as proportional to the simple declination. In application, it might be better to suppose it proportional to the sine of the declination. The limits in question may be considered as 40° north declination and 30° south declination, but the correction in question will necessarily become uncertain as we approach either limit.

These three corrections have been obtained in the order in which they are numbered, as follows: Represent by—

$$c_1,\ c_2,\ \ -\ \ -\ \ -\ \ -\ \ c_{29}$$

the several excesses of the standard right ascensions over those of the catalogue to be compared. The mean value of c may then be taken as the correction for equinox, which we may represent by e. Subtract e from each individual c, and represent the residuals by c'_1, c'_2, etc. The values of m and n may then be obtained in the same manner by which the periodic terms of the residuals of the separate catalogues have been obtained. But the addition of Sirius and Procyon to the list of stars will make a slight change in the equations, so that we shall have—

$$11.9\, m = \Sigma c' (\cos \alpha - .03 \sin \alpha)$$
$$17.1\, n = \Sigma c' (\sin \alpha - .04 \cos \alpha)$$

The values of the coefficients—

$$\cos \alpha - .03 \sin \alpha \text{ and } \sin \alpha - .04 \cos \alpha$$

for each star are given in the following table.

Star.	cos a	sin a	Co-efficient for—	
			11.9m	17.1n
α Andromedæ	+ 1.00	.00	+ 1.00	− .04
γ Pegasi	+ 1.00	+ .03	+ 1.00	− .01
α Arietis	+ .87	+ .50	+ .86	+ .47
α Ceti	+ .73	+ .69	+ .71	+ .66
α Tauri	+ .39	+ .92	+ .36	+ .90
β Orionis	+ .22	+ .97	+ .19	+ .96
β Tauri	+ .19	+ .98	+ .16	+ .97
α Orionis	+ .06	+ 1.00	+ .03	+ 1.00
α Canis Majoris	− .16	+ .99	− .19	+ 1.00
α Canis Minoris	− .38	+ .92	− .41	+ .93
β Geminorum	− .40	+ .91	− .43	+ .93
α Hydræ	− .76	+ .64	− .78	+ .67
α Leonis	− .86	+ .51	− .88	+ .54
β Leonis	− 1.00	+ .09	− 1.00	+ .13
α Virginis	− .95	− .32	− .94	− .28
α Bootis	− .85	− .53	− .83	− .50
α^2 Libræ	− .77	− .64	− .75	− .61
α Coronæ Borealis	− .62	− .78	− .60	− .76
α Serpentis	− .59	− .81	− .57	− .79
α Scorpii	− .43	− .90	− .40	− .88
α Herculis	− .23	− .97	− .20	− .96
α Ophiuchi	− .16	− .99	− .13	− .98
α Lyræ	+ .13	− .99	+ .16	− 1.00
γ Aquilæ	+ .41	− .91	+ .44	− .93
α Aquilæ	+ .43	− .90	+ .46	− .92
β Aquilæ	+ .45	− .89	+ .48	− .91
α^2 Capricorni	+ .53	− .85	+ .56	− .87
α Aquarii	+ .86	− .51	+ .88	− .54
α Pegasi	+ .96	− .28	+ .97	− .32

Subtracting from each c' the corresponding value of—

$$m \cos \alpha + n \sin \alpha$$

the residuals ought to be purely accidental errors, unless they are found to depend on the declination. In this case, if we suppose a term proportional to the simple declination, we may represent it in the form—

$$d \times \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

the zero of reference being 10° north for convenience, because that is nearly the mean declination of all the adopted standard stars, and the degrees of declination being divided by 10 in order to have a more convenient factor. We may then find d by solving the equations of condition formed by putting the above expression equal to c'' for each star. The following is a convenient and sufficiently accurate expression for d:

$60d = +2c''$ of α Andromedæ.
$+1$ - - α Arietis.
-1 - - α Ceti.
$+1$ - - α Tauri.
-2 - - β Orionis.
$+2$ - - β Tauri.
-2 - - α Canis Majoris.
$+2$ - - β Geminorum.
-2 - - α Hydræ.
$+1$ - - β Leonis.
-2 - - α Virginis.
$+1$ - - α Bootis.
-2 - - α^2 Libræ.
$+2$ - - α Coronæ.
-2 - - α Scorpii.
$+1$ - - α Herculis.
$+2$ - - α Lyræ.
-2 - - α^2 Capricorni.
-1 - - α Aquarii.

As an example of the method we may discuss the twelve-year series of Paris observations, extending from 1856 to 1867. The different results are shown in the following table. First we give the mean correction to Le Verrier's fundamental catalogue deduced from all the observations, using the mean results given in each volume. Next we have the resulting corrections to Bessel. Subtracting the correction to Bessel for the mean epoch, we have the correction to the standard of this paper, or $-c$. The mean value of c is found to be 32; which is the value of e. Adding this, we have $-c'$.

From the values of c' we find—

$$m = +20$$
$$n = -23$$

Adding $20 \cos \alpha - 23 \sin \alpha$, we have c''. From c'' we have—

$$d = +9$$

Applying $9 \frac{\text{Dec.} - 10^\circ}{10^\circ}$ to $-c''$ we have r, or the definitive corrections to the standard given by the Paris observations.

Star.	Corrections to—		$-c$	$-c'$	Computed periodic terms.	$-c''$	r
	Le Verrier.	Tab. Reg.					
α Andromedæ	− 15	+ 57	− 47	− 15	+ 20	+ 5	+ 21
γ Pegasi	− 16	− 127	− 69	− 37	+ 20	− 17	− 13
α Arietis	− 31	+ 33	− 57	− 25	+ 5	− 20	− 8
α Ceti	+ 34	+ 53	− 27	+ 5	− 1	+ 4	− 2
α Tauri	− 25	+ 49	+ 3	+ 35	− 13	+ 22	+ 27
β Orionis	+ 52	+ 76	+ 23	+ 55	− 18	+ 37	+ 21
β Tauri	− 6	− 59	− 18	+ 14	− 19	− 5	+ 11
α Orionis	+ 16	+ 13	− 3	+ 29	− 22	+ 7	+ 4
α Canis Majoris	(− 228)	+ 39	− 4	+ 28	− 26	+ 2	− 22
α Canis Minoris	(+ 51)	+ 37	− 4	+ 28	− 29	− 1	− 6
β Geminorum	− 6	+ 92	− 24	+ 8	− 29	− 21	− 5
α Hydræ	+ 61	+ 157	+ 12	+ 44	− 30	+ 14	− 2
α Leonis	+ 20	+ 98	0	+ 32	− 29	+ 3	+ 6
β Leonis	+ 4	+ 86	− 32	0	− 22	− 22	− 17
α Virginis	+ 28	0	− 24	+ 8	− 11	− 3	− 21
α Bootis	+ 7	+ 30	− 39	− 7	− 4	− 11	− 2
α^2 Libræ	+ 23	− 66	+ 1	+ 33	0	+ 33	+ 10
α Corona	− 25	+ 18	− 60	− 28	+ 6	− 22	− 7
α Serpentis	+ 28	− 74	− 36	− 4	+ 7	+ 3	0
α Scorpii	+ 46	− 36	+ 6	+ 38	+ 12	+ 50	+ 18
α Herculis	− 11	− 27	− 59	− 27	+ 18	− 9	− 4
α Ophiuchi	− 1	+ 146	− 37	− 5	+ 20	+ 15	+ 18
α Lyræ	− 63	− 48	− 93	− 61	+ 25	− 36	− 10
γ Aquilæ	− 5	− 113	− 63	− 31	+ 29	− 2	− 2
α Aquilæ	− 24	− 44	− 65	− 33	+ 29	− 4	− 5
β Aquilæ	+ 6	− 148	− 60	− 28	+ 29	+ 1	− 3
α^2 Capricorni	+ 36	− 49	− 33	− 1	+ 30	+ 29	+ 8
α Aquarii	+ 10	+ 9	− 55	− 23	+ 29	+ 6	− 4
α Pegasi	− 42	− 42	− 62	− 30	+ 25	− 5	− 1

The systematic corrections obtained in this way for a number of catalogues are given in the following list. The year attached to each catalogue is that to which it is reduced. Systematic corrections much smaller than the accidental errorrs of the catalogue may generally be omitted entirely.

SYSTEMATIC CORRECTIONS TO BE APPLIED TO THE RIGHT ASCENSIONS OF EQUATORIAL AND ZODIACAL STARS IN DIFFERENT CATALOGUES TO REDUCE THEM TO A MEAN SYSTEM.

AUWERS' BRADLEY, (1755.)*

$$\Delta = -0^s.010 + 0^s.003 \cos \alpha - 0^s.007 \sin \alpha$$

The mean value of the periodic terms being less than one-third the probable error of the individual star-places, they may be neglected entirely.

BESSEL'S FUNDAMENTA, 1755.

$$\Delta = -0^s.01$$

DE ZACH'S FIXARUM PRÆCIPUARUM CATALOGUS NOVUS EX OBSERVATIONIBUS ASTRONOMICIS IN SPECULA ASTRONOMICA GOTHANA ANNIS 1787, 1788, 1789, 1790, HABITIS ET AD INITIUM ANNI MDCCC. CONSTRUCTIS.

$$\Delta = +0^s.36 - 0^s.03 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

PIAZZI, 1800.

$$\Delta = +0^s.10 + 0^s.028 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

MASKELYNE, (1805.)

Catalogue in vol. 4 of his observations, second part, p. 112.

$$\Delta = +0^s.145 + 0^s.019 \cos \alpha + 0^s.006 \sin \alpha - 0^s.012 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

AUWERS' CACCIOTORE, (1805.)

$$\Delta = -0^s.006 - 0^s.010 \cos \alpha - 0^s.033 \sin \alpha$$

BESSEL'S FIRST FUNDAMENTAL CATALOGUE, (1815.)

$$\Delta = -0^s.037 - 0^s.037 \cos \alpha + 0^s.037 \sin \alpha$$

BESSEL'S SECOND FUNDAMENTAL CATALOGUE, (1825.)

$$\Delta = +0^s.020 - 0^s.006 \cos \alpha + 0^s.010 \sin \alpha$$

STRUVE, (1825.)

$$\Delta = -0^s.020 + 0^s.007 \cos \alpha + 0^s.005 \sin \alpha + 0^s.008 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

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*Auwers' catalogue being still unpublished, this correction must be understood as applicable only to the preliminary catalogue, in which no correction to Bessel's equinox has been determined or applied.

BRINKLEY, (1824.)

$$\Delta = + 0^s.150$$

ARGELANDER, (1830.)

$$\Delta = + 0^s.017 - 0^s.006 \frac{\text{Dec.} - 10^\circ}{10}$$

GILLISS'S FIRST WASHINGTON CATALOGUE, 1840.

(*From observations made at the old Naval Observatory during the years* 1838–'42. *Washington*, 1846. 8vo.)

$$\Delta = + 0^s.032 \cos \alpha - 0^s.028 \sin \alpha$$

POND, 1830.

$$\Delta = - 0^s.056 - 0^s.015 \sin \alpha$$

(For stars in south declination the additional positive correction $0^s.0015 \times$ south declination in degrees is strongly indicated.)

AIRY'S CAMBRIDGE CATALOGUE.

In the Memoirs of the Royal Astronomical Society, vol. XI.

$$\Delta = - 0^s.024 - 0^s.018 \sin 2\alpha$$

(The term of double period, though *a priori* somewhat improbable, is strongly indicated by the comparisons.)

TAYLOR, (1835.)

General catalogue of the principal fixed stars from observations made at the honorable the East India Company's observatory at Madras in the years 1830–1843.

$$\Delta = - 0^s.047 + 0^s.023 \cos \alpha + 0^s.0011 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

The last term is far within the probable error of the catalogue-positions.

GREENWICH 12-YEAR CATALOGUE.

Catalogue for 1840.

$$\Delta = + 0^s.067 + 0^s.014 \cos \alpha - 0^s.034 \sin \alpha$$

Catalogue for 1845.

$$\Delta = + 0^s.019 + 0^s.007 \cos \alpha - 0^s.025 \sin \alpha$$

ROBINSON'S ARMAGH CATALOGUE, (1840.)

$$\Delta = +0^s.020.$$

(No positions of fundamental stars are given in this catalogue. The correction has, therefore, been derived from a comparison of all the stars south of 45° north polar distance which are common to Armagh and the Greenwich 6-Year Catalogue for 1840, and observed at least five times at each observatory. The differences between these catalogues were corrected for the error of the Greenwich catalogue, and the outstanding differences were presumed to be due to error of the Armagh catalogue.)

PULKOWA, (1845.)

$$\Delta = +0^s.019$$

RADCLIFFE CATALOGUE, 1845.

$$\Delta = -0^s.009 + 0^s.047 \cos \alpha - 0^s.020 \sin \alpha$$

(The positions of the fundamental stars in this catalogue give the correction—

$$\Delta = +0^s.001 + 0^s.055 \cos \alpha - 0^s.021 \sin \alpha$$

In the introduction to the catalogue, Mr. Main gives a comparison of this catalogue with Greenwich, 1845, from which I derive—

$$\text{Greenwich} - \text{Radcliffe} = -0^s.038 + 0^s.032 \cos \alpha + 0^s.005 \sin \alpha$$

Adding the Greenwich correction, this will give, for Radcliffe,

$$\Delta = -0^s.019 + 0^s.039 \cos \alpha - 0^s.020 \sin \alpha$$

The mean result has been adopted.)

GREENWICH 6-YEAR CATALOGUE, (1850.)

$$\Delta = -0^s.003 + 0^s.011 \cos \alpha - 0^s.023 \sin \alpha$$

GREENWICH 7-YEAR CATALOGUE, (1860.)

$$\Delta = +0^s.014 + 0^s.014 \cos \alpha - 0^s.012 \sin \alpha$$

GREENWICH 7-YEAR CATALOGUE, (1864.)

$$\Delta = +0^s.033 + 0^s.010 \cos \alpha - 0^s.010 \sin \alpha$$

PARIS ANNUAL CATALOGUES, 1856–'67.

$$\Delta = +0^s.032 + 0^s.020 \cos \alpha - 0^s.023 \sin \alpha + 0^s.009 \frac{\text{Dec.} - 10^\circ}{10^\circ}$$

WASHINGTON "POSITIONS OF FUNDAMENTAL STARS," (1870.)

(In Appendix III to the Washington Observations for 1867.)

$$\Delta = -0^s.024$$

WASHINGTON ANNUAL RESULTS OF OBSERVATIONS WITH THE OLD TRANSIT-INSTRUMENT, (1862–'65.)

$$\varDelta + = 0^s.006 + 0^s.021 \cos \alpha - 0^s.024 \sin \alpha$$

WASHINGTON ANNUAL RESULTS OF OBSERVATIONS WITH THE TRANSIT CIRCLE, (1866–'72.)

$$\varDelta = + 0^s.006$$

Those of the above corrections which form a considerable part of the probable error of the catalogue-positions are tabulated in the following tables. In the corrections depending on the declinations the constant term is included, except for Paris, where it is included in the first table.

Corrections to different catalogues depending on the right ascension.

R. A.	Airy's Cambridge catalogue.	Taylor's Madras catalogue.	AIRY'S GREENWICH CATALOGUES.					Paris annual catalogues, 1855–'67.	Radcliffe catalogue, 1845.
			1840.	1845.	1850.	1860.	1864.		
h.	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*
0	− .02	− .02	+.081	+.026	+.008	+.028	+.043	+ .052	+ .04
1	− .03	− .02	+.072	+.020	+.002	+.025	+.040	+ .045	+ .03
2	− .04	− .03	+.062	+.013	−.005	+.021	+.037	+ .037	+ .02
3	− .04	− .03	+.053	+.006	−.011	+.015	+.033	+ .030	+ .01
4	− .04	− .04	+.045	+.001	−.017	+.010	+.029	+ .022	− .01
5	− .03	− .04	+.038	−.003	−.022	+.005	+.026	+ .015	− .02
6	− .02	− .05	+.033	−.006	−.026	+.002	+.023	+ .009	− .03
7	− .02	− .05	+.030	−.007	−.028	.0	+.021	+ .005	− .04
8	− .01	− .06	+.031	−.007	−.028	−.003	+.019	+ .002	− .05
9	− .01	− .06	+.033	−.004	−.027	−.004	+.019	+ .002	− .06
10	− .01	− .07	+.038	+.001	−.024	−.004	+.019	+ .003	− .06
11	− .02	− .07	+.044	+.006	−.020	−.003	+.021	+ .007	− .06
12	− .02	− .07	+.053	+.012	−.014	.0	+.023	+ .012	− .06
13	− .03	− .07	+.062	+.018	−.008	+.003	+.026	+ .019	− .05
14	− .04	− .07	+.072	+.025	−.001	+.007	+.029	+ .027	− .04
15	− .04	− .06	+.081	+.032	+.005	+.013	+.033	+ .034	− .03
16	− .04	− .06	+.089	+.037	+.016	+.018	+.037	+ .042	− .02
17	− .03	− .05	+.096	+.041	+.016	+.023	+.040	+ .049	.00
18	− .02	− .05	+.101	+.044	+.020	+.026	+.043	+ .055	+ .01
19	− .02	− .04	+.104	+.045	+.022	+.028	+.045	+ .059	+ .02
20	− .01	− .04	+.103	+.045	+.022	+.031	+.047	+ .062	+ .03
21	− .01	− .03	+.101	+.042	+.021	+.032	+.047	+ .062	+ .04
22	− .01	− .03	+.096	+.037	+.018	+.032	+.047	+ .061	+ .04
23	− .02	− .02	+.090	+.032	+.014	+.031	+.045	+ .057	+ .04
24	− .02	− .02	+.081	+.026	+.008	+.028	+.043	+ .052	+ .04

Corrections depending on the declination.

Dec.	N. P. D.	Piazzi, 1800.	Struve, Posit. Med.	Argelander, 1830.	Paris annual catalogues, 1856–'63.
°	°	*s.*	*s.*	*s.*	*s.*
+40	50	+ .18	+ .004	— .001	+ .027
35	55	+ .17	.000	+ .002	+ .023
30	60	+ .16	— .004	+ .005	+ .018
25	65	+ .14	— .008	+ .008	+ .014
20	70	+ .13	— .012	+ .011	+ .009
15	75	+ .11	— .016	+ .014	+ .004
10	80	+ .10	— .020	+ .017	.0
+ 5	85	+ .09	— .024	+ .020	— .004
0	90	+ .07	— .028	+ .023	— .009
— 5	95	+ .06	— .032	+ .021	— .014
—10	100	+ .04	— .036	+ .029	— .018
—15	105	+ .03	— .040	+ .032	— .022
—20	110	+ .02	— .044	+ .035	— .027
—25	115	.00	— .048	+ .038	— .032

§ 8.

TIVE RIGHT ASCENSIONS OF THE FUNDAMENTAL STARS.

Applying these corrections to the catalogue-positions, we may deduce definitive corrections to the individual right ascensions of the stars under consideration. If, in doing this, we employed only the catalogues used in the first determination, and assigned the same relative weights as in the first discussion, we should reproduce the right ascensions already found. But the weights were first assigned solely with respect to the probable freedom of the catalogue from periodic errors dependent on the right ascension, while, after elimination of these errors, they should be assigned with respect to the purely accidental errors of the determinations, and this change of weights will make a small change in the individual definitive positions. We can also add a number of catalogues not employed in the preliminary determination, particularly the Greenwich and Paris catalogues, which will add considerably to the precision of the results.

The details of the process are shown in the following tables. Under each star is given, in the first column, the difference of excess of catalogue-place, corrected for systematic error over the standard place already deduced.

In two cases several catalogues of small weight have been combined, as the exhibition of the individual results of each catalogue would not be of interest. The first set are the catalogues of—

Piazzi - - - - - - -	1800, weight 1
Maskelyne - - - -	1805, weight 2
Auwers' Cacciotore - -	1805, weight 2
Bessel - - - - - - -	1815, weight 1

which have been combined into a single result for the mean date 1807. The mean systematic correction was so small that only the correction for equinox was actually applied. The next case was Airy's Cambridge catalogue and Pond's general catalogue, which were combined into a single result.

No corrections depending on the declination have been applied, except in the case of Paris and Argelander.

Under the titles Greenwich, 1869, and Washington, 1869, are given the mean results of the Greenwich and Washington observations for the years 1868, 1869, and 1870, without any correction for periodic error.

The weights assigned are constant for each catalogue, except in the case of Bradley, where the weight 2 was assigned to results depending on more than 100 observations, and 1 to those depending on less. The adopted weights and general solution are as follows, the time T being reckoned from 1845:

No.	Catalogue.	Date.	Weight.	T′	C′x	C″x	C′y	C″y
1	Bradley	1755	1 or 2	− .90	.035	.054	− .46	− .63
2	Combined catalogue .	1807	1	− .38	.029	.024	− .20	− .14
3	Bessel II	1823	2	− .22	.055	.048	− .24	− .16
4	Struve.	1824	1	− .21	.027	.023	− .11	− .07
5	Argelander	1828	4	− .17	.108	.095	− .39	− .24
6	Pond and Airy . . .	1830	1	− .15	.026	.023	− .08	− .05
7	Greenwich	1839	2	− .06	.050	.048	− .08	− .05
8	Greenwich	1845	2	.0	.049	.048	− .02	.0
9	Pulkowa	1845	4	.0	.098	.095	− .05	.0
10	Greenwich	1851	3	+ .06	.072	.071	+ .05	+ .06
11	Greenwich	1857	3	+ .12	.070	.071	+ .14	+ .12
12	Paris	1862	4	+ .17	.092	.095	+ .25	+ .21
13	Greenwich	1864	4	+ .19	.090	.095	+ .33	+ .26
14	Washington	1865	5	+ .20	.112	.118	+ .44	+ .35
15	Greenwich	1869	2	+ .24	.044	.047	+ .21	+ .17
16	Washington	1869	2	+ .24	.044	.047	+ .21	+ .17

The equations given by the several catalogues, when solved by least squares, lead to the result that—

$$\Delta \text{ R. A. for } 1845 = \Sigma\, C_x \times r$$

$$\Delta \text{ Ann. variation} = \Sigma\, C_y \times r$$

r representing the correction given by any catalogue, and C_x, C_y, factors constant for each catalogue, except that there will be two systems of these factors, the one corresponding to the stars for which the results of Bradley's observations receive the weight 1, the other to those in which they receive the weight 2. The former are designated by one accent, the latter by two. In the case of C_x the differences are so minute that a single mean value has been actually used.

In the column r', under each star, is given the outstanding residual after subtracting the concluded correction—

$$\Delta x + T' \Delta y$$

Sirius and Procyon are included only for the sake of comparison. No correction to Auwers' places is indicated.

Residual corrections given by catalogues.

No.	Catalogue.	Year.	α Androm.		γ Pegasi.		α Arietis.		α Ceti.		α Tauri.		β Orionis.	
			r	*r′*	*r*	*r′*	*r*	*r′*	*r*	*r′*	*r*	*r′*	*r*	*r′*
1	Bradley	1755	+ 15	+ 12	− 29	− 49	+ 9	+ 4	+ 32	+ 45	+ 24	+ 17	+ 3	+ 6
2	Combined catalogue	1807	+ 9	+ 4	+ 23	+ 17	− 12	− 11	− 24	− 20	− 6	− 18	− 7	− 4
3	Bessel II	1823	− 12	− 18	+ 27	+ 25	− 12	− 10	− 30	− 29	+ 5	− 8	− 25	− 22
4	Struve	1824	− 61	− 67	− 1	− 3	+ 2	+ 5	+ 1	+ 2	− 15	− 28	+ 53	+ 56
5	Argelander . . .	1828	+ 1	− 5	+ 15	+ 14	− 8	− 5	− 10	− 10	+ 2	− 11	− 10	− 7
6	Pond and Airy . .	1830	+ 27	+ 20	+ 40	+ 40	+ 2	+ 5	− 28	− 28	+ 22	+ 8	− 11	− 8
7	Greenwich. . . .	1839	+ 26	+ 19	0	+ 2	− 28	− 24	+ 40	+ 38	+ 42	+ 28	− 13	− 10
8	Greenwich. . . .	1845	+ 6	− 1	− 14	− 11	+ 23	+ 28	− 23	− 26	+ 44	+ 29	− 3	0
9	Pulkowa	1845	+ 8	+ 1	− 3	0	+ 14	+ 19	+ 4	+ 1	− 10	− 25	+ 6	+ 9
10	Greenwich. . . .	1851	+ 23	+ 15	− 7	− 2	0	+ 6	0	− 4	+ 21	+ 6	− 2	0
11	Greenwich. . . .	1857	+ 28	+ 20	− 2	+ 4	− 9	− 3	− 14	− 19	+ 18	+ 2	− 26	− 24
12	Paris	1862	+ 21	+ 13	− 13	− 5	− 8	− 1	− 2	− 7	+ 27	+ 11	+ 21	+ 23
13	Greenwich. . . .	1864	+ 9	+ 1	− 18	− 10	− 6	+ 1	+ 8	+ 2	+ 19	+ 3	− 4	− 2
14	Washington . . .	1865	+ 1	− 7	− 13	− 4	− 7	0	+ 21	+ 15	+ 14	− 3	− 4	− 2
15	Greenwich. . . .	1869	+ 2	− 6	− 21	− 11	− 30	− 23	− 10	− 16	+ 26	+ 9	− 14	− 12
16	Washington . . .	1869	− 22	− 30	− 1	+ 9	− 10	− 3	+ 43	+ 37	+ 11	− 6	+ 6	+ 8

No.	Catalogue.	Year.	β Tauri.		α Orionis.		α Canis Maj.		α Canis Min.		β Gemin.		α Hydræ.	
1	Bradley	1755	+ 4	+ 2	− 9	− 9	0	.	0	.	+ 11	+ 7	− 5	− 12
2	Combined catalogue	1807	+ 32	+ 25	+ 27	+ 26	.	.	.	.	− 4	− 6	− 2	− 4
3	Bessel II	1823	− 4	− 12	+ 2	0	.	.	.	.	− 12	− 13	− 23	− 24
4	Struve	1824	− 22	− 30	− 14	− 16	.	.	.	.	− 23	− 24	+ 25	+ 24
5	Argelander . . .	1828	+ 3	− 6	+ 14	+ 12	.	− 17	.	+ 8	0	− 1	+ 10	+ 10
6	Pond and Airy . .	1830	+ 15	+ 6	+ 32	+ 30	.	+ 5	.	+ 14	+ 10	+ 9	+ 48	+ 48
7	Greenwich. . . .	1839	− 4	− 14	+ 4	+ 2	.	+ 2	.	− 24	+ 11	+ 11	− 15	− 14
8	Greenwich. . . .	1845	+ 6	− 4	− 5	− 7	.	− 6	.	+ 13	+ 3	+ 3	+ 3	+ 4
9	Pulkowa	1845	+ 14	+ 4	− 13	− 15	.	.	.	.	+ 6	+ 6	+ 5	+ 6
10	Greenwich. . . .	1851	+ 17	+ 6	− 5	− 8	.	+ 4	.	+ 2	− 3	− 3	− 6	− 4
11	Greenwich. . . .	1857	+ 34	+ 23	+ 3	0	.	+ 12	.	− 12	+ 7	+ 7	− 4	− 1
12	Paris	1862	+ 11	− 1	+ 4	+ 1	.	− 11	.	− 6	− 5	− 5	− 2	+ 1
13	Greenwich. . . .	1864	+ 16	+ 4	+ 16	+ 13	.	− 17	.	+ 7	+ 6	+ 7	− 8	− 5
14	Washington . . .	1865	− 14	− 26	+ 1	− 2	.	+ 16	.	0	− 11	− 10	− 12	− 9
15	Greenwich. . . .	1869	+ 36	+ 24	+ 2	− 1	.	− 3	.	+ 23	+ 9	+ 10	+ 26	+ 30
16	Washington . . .	1869	+ 19	+ 7	+ 1	− 2	.	+ 1	.	+ 15	− 7	− 6	− 23	− 19

Residual corrections given by catalogues.

No.	Catalogue.	Year.	α Leonis.		β Leonis.		α Virginis.		α Bootis.		α^2 Libræ.		α Coronæ.	
			r	r'	r	r'	r	r'	r	′	r	r'	r	r'
1	Bradley	1755	+ 12	+ 6	+ 1	+ 11	− 5	− 13	− 1	− 6	− 7	− 8	+ 5	− 11
2	Combined catalogue	1807	− 2	− 8	+ 10	+ 17	− 2	0	+ 5	+ 3	+ 3	− 1	− 28	− 35
3	Bessel II	1823	+ 1	− 5	− 26	− 20	+ 22	+ 27	− 3	− 3	− 3	− 8	− 1	− 5
4	Struve	1824	− 4	− 10	− 12	− 7	− 16	− 10	− 17	− 17	− 19	− 24	+ 30	+ 26
5	Argelander . . .	1828	− 8	− 14	− 2	+ 3	0	+ 6	− 9	− 9	+ 19	+ 13	+ 9	+ 6
6	Pond and Airy . .	1830	− 9	− 15	− 3	+ 2	− 15	− 8	− 6	− 6	+ 26	+ 20	+ 16	+ 13
7	Greenwich	1839	+ 38	+ 32	− 10	− 6	− 15	− 6	+ 24	+ 25	+ 28	+ 23	− 5	− 6
8	Greenwich	1845	+ 11	+ 5	− 30	− 26	− 15	− 5	+ 6	+ 7	+ 30	+ 24	+ 9	+ 9
9	Pulkowa	1845	+ 2	− 4	+ 6	+ 10	+ 8	+ 18	+ 10	+ 11	− 11	− 17	− 2	− 2
10	Greenwich	1851	+ 6	+ 1	+ 4	+ 8	− 16	− 5	+ 15	+ 16	+ 4	− 2	+ 28	+ 28
11	Greenwich	1857	+ 16	+ 11	− 1	+ 2	− 36	− 24	+ 8	+ 10	− 9	− 15	+ 15	+ 17
12	Paris	1862	+ 6	+ 1	− 17	− 14	− 21	− 8	− 2	0	+ 10	+ 3	− 7	− 5
13	Greenwich	1864	− 5	− 10	+ 5	+ 8	− 22	− 9	− 6	− 4	+ 16	+ 9	0	+ 3
14	Washington . . .	1865	+ 5	0	− 3	0	+ 1	+ 15	− 12	− 10	0	− 7	− 18	− 15
15	Greenwich	1869	+ 11	+ 6	+ 12	+ 14	− 21	− 7	− 19	− 16	+ 10	+ 3	− 10	− 6
16	Washington . . .	1869	+ 6	+ 1	− 5	− 3	− 14	0	− 10	− 7	+ 20	+ 13	− 25	− 21

No.	Catalogue.	Year.	α Serpentis.		α Scorpii.		α Herculis.		α Ophiuchi.		α Lyræ.		γ Aquilæ.	
1	Bradley	1755	+ 5	+ 1	− 25	− 8	+ 11	+ 10	+ 14	+ 16	+ 2	0	− 1	− 4
2	Combined catalogue	1807	− 44	− 46	+ 27	+ 36	− 38	− 40	− 19	− 23	+ 14	+ 14	− 2	− 4
3	Bessel II	1823	+ 6	+ 5	+ 12	+ 18	+ 12	+ 9	− 32	− 37	+ 3	+ 4	− 1	− 2
4	Struve	1824	+ 38	+ 37	+ 16	+ 22	+ 38	+ 35	+ 40	+ 35	− 45	− 44	+ 10	+ 9
5	Argelander . . .	1828	+ 11	+ 10	− 13	− 7	+ 6	+ 3	+ 10	+ 4	− 21	− 20	+ 14	+ 13
6	Pond and Airy . .	1830	+ 23	+ 23	− 35	− 30	− 29	− 32	+ 3	− 3	− 7	− 6	− 20	− 21
7	Greenwich	1839	− 24	− 24	+ 1	+ 5	− 4	− 7	+ 18	+ 11	+ 3	+ 5	+ 3	+ 2
8	Greenwich	1845	+ 1	+ 1	+ 28	+ 31	− 18	− 21	+ 12	+ 5	0	+ 2	− 5	− 5
9	Pulkowa	1845	− 3	− 3	− 15	− 12	− 19	− 22	− 17	− 24	+ 18	+ 21	+ 8	+ 8
10	Greenwich	1851	0	0	− 37	− 35	+ 22	+ 18	+ 8	0	+ 21	+ 24	− 18	− 18
11	Greenwich	1857	− 4	− 3	− 10	− 8	+ 33	+ 29	+ 24	+ 15	+ 17	+ 20	+ 10	+ 10
12	Paris	1862	0	+ 1	+ 18	+ 19	− 4	− 8	+ 18	+ 9	− 10	− 7	− 2	− 2
13	Greenwich	1864	+ 1	+ 2	− 5	− 5	+ 18	+ 14	+ 22	+ 13	+ 6	+ 9	− 12	− 12
14	Washington . . .	1865	− 4	− 3	+ 16	+ 16	+ 1	− 3	+ 6	− 4	− 5	− 2	+ 5	+ 5
15	Greenwich	1869	− 6	− 5	− 13	− 13	+ 10	+ 6	+ 10	0	− 26	− 23	− 18	− 18
16	Washington . . .	1869	+ 7	+ 8	− 18	− 18	− 3	− 7	− 2	− 12	− 34	− 31	+ 19	+ 19

Residual corrections given by catalogues.

No.	Catalogue.	Year.	α Aquilæ.		β Aquilæ.		α^2 Capricorni.		α Aquarii.		α Pegasi.			
			r	r'	r	r'	r	r'	r	r'	r	r'		
1	Bradley	1755	− 9	− 11	− 7	− 9	− 21	− 6	− 16	− 5	− 2	− 2		
2	Combined catalogue	1807	+ 15	+ 14	− 8	− 10	+ 10	+ 19	+ 4	+ 10	+ 20	+ 19		
3	Bessel II	1823	+ 9	+ 9	+ 31	+ 29	+ 31	+ 38	+ 18	+ 23	+ 7	+ 5		
4	Struve	1824	− 6	− 6	− 3	+ 1	+ 27	+ 34	− 3	+ 2	− 29	− 31		
5	Argelander . . .	1828	− 3	− 3	+ 11	+ 9	− 17	− 10	− 17	− 12	+ 7	+ 5		
6	Pond and Airy . .	1830	− 7	− 7	− 32	− 34	− 59	− 53	+ 4	+ 8	− 2	− 4		
7	Greenwich	1839	+ 23	+ 23	− 7	− 9	− 27	− 22	− 4	0	+ 10	+ 8		
8	Greenwich	1845	− 5	− 5	+ 5	+ 3	+ 5	+ 10	− 13	− 10	+ 2	0		
9	Pulkowa	1845	+ 7	+ 7	+ 1	− 1	− 1	+ 4	− 4	− 1	− 9	− 11		
10	Greenwich	1851	+ 2	+ 3	+ 12	+ 9	− 28	− 24	− 2	+ 1	+ 4	+ 1		
11	Greenwich	1857	0	+ 1	− 10	− 13	− 19	− 16	− 18	− 16	− 9	− 12		
12	Paris	1862	− 5	− 4	− 3	− 6	+ 8	+ 11	− 4	− 2	− 1	− 4		
13	Greenwich	1864	− 7	− 6	− 4	− 7	+ 10	+ 12	− 18	− 16	+ 4	+ 1		
14	Washington . . .	1865	+ 4	+ 5	− 3	− 6	− 5	− 3	+ 11	+ 13	+ 13	+ 10		
15	Greenwich	1869	− 8	− 7	+ 24	+ 21	+ 10	+ 12	− 3	− 2	− 4	− 7		
16	Washington . . .	1869	− 19	− 18	+ 7	+ 4	− 7	− 5	+ 25	+ 26	+ 19	+ 16		

There are still three of Maskelyne's fundamental stars which it is desirable, for the sake of completeness, to add, namely, α Aurigæ, α Cygni, and α Piscis Australis. Although these stars lie a little outside the limits we have set, they are frequently used as clock-stars. The corrections to the positions of the Tabulæ Regiomontanæ were obtained on the same general system with that adopted for the other stars. The tabular positions were corrected for the terms depending on the second and third powers of the time, as given in the following tables, and the catalogue-positions for systematic error given by the formulæ of the last section. From the differences the correction proportional to the time was deduced.

From the residuals r we derive the following definitive corrections to the right ascensions for 1800 and to the annual variations of the first standard:

Definitive corrections to right ascensions of Tabulæ Regiomontanæ.

Star.	Δ R. A.	Δy	Definitive correction.				
α Andromedæ	+ 5	+ 5	− 7	+190 T	+ 0 T^2	+14 T^3	
γ Pegasi	+ 8	− 26	+34	−164	− 6	+10	
α Arietis	0	− 11	− 3	+146	− 6	+ 7	
α Ceti	− 5	+ 17	+28	+ 98	− 6	+ 2	
α Tauri	+ 11	+ 8	+ 8	+ 98	−12	− 6	
α Aurigæ	.	.	− 2	+ 26	−31	−34	
β Orionis	− 3	+ 1	+38	+ 28	−12	− 2	
β Tauri	+ 6	+ 9	+72	−156	−14	−16	
α Orionis	+ 1	+ 3	+25	− 7	− 4	− 7	
α Canis Majoris	.	.	+155	+ 29	−52	− 2	+ P
α Canis Minoris	.	.	− 15	+ 8	−38	− 3	+ P
β Geminorum	+ 2	− 4	−18	+227	+ 2	−11	
α Hydræ	+ 3	− 10	−17	+266	− 4	+ 4	
α Leonis	+ 6	− 1	−23	+215	−10	+ 6	
β Leonis	− 7	+ 7	− 7	+200	+ 1	+10	
α Virginis	− 1	− 19	−17	+ 48	− 4	+ 8	
α Bootis	+ 2	− 7	− 5	+ 92	+41	+ 7	
α^2 Libræ	+ 4	+ 6	+84	−235	− 6	+ 3	
α Coronæ	+ 8	− 17	− 4	+135	− 6	+ 3	
α Serpentis	+ 2	− 5	+50	−141	−10	+ 1	
α Scorpii	− 10	+ 15	+31	−116	−10	− 9	
α Herculis	+ 2	+ 3	− 3	+ 69	− 8	− 2	
α Ophiuchi	+ 3	+ 10	−24	+360	− 3	− 2	
α Lyræ	0	− 4	+ 2	+ 82	−26	− 1	
γ Aquilæ	+ 2	− 3	+71	−197	−10	− 1	
α Aquilæ	+ 1	− 3	+ 8	+ 32	−20	− 1	
β Aquilæ	+ 2	+ 1	+41	−215	+ 5	− 1	
α^2 Capricorni	− 10	+ 12	−16	+ 6	−12	− 3	
α Cygni	.	.	−32	+184	−17	+ 3	
α Aquarii	− 7	+ 8	−41	+173	− 7	+ 6	
α Piscis Australis	.	.	−50	−152	− 6	+11	
α Pegasi	+ 1	+ 3	+10	+ 21	− 4	+ 9	

In the above table P signifies the periodic part of Auwers' correction, which is more convenient to use than q.

The following table gives the definitive right ascensions for every five years from 1750 to 1900.

I conceive that the mean error of these right ascensions, after correction for equinox, will not exceed $0^s.010$ at any time during the nineteenth century.

Mean right ascensions for beginning of each fifth Besselian fictitious year, 1750–1850.

Year.	α ANDROMEDÆ.		γ PEGASI.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	23 55 31.079	3.0665	0 0 23.520	3.0702
1755	46.413	3.0674	38.872	3.0707
1760	23 56 1.752	3.0683	54.227	3.0712
1765	17.095	3.0691	0 1 9.584	3.0716
1770	32.443	3.0700	24.943	3.0721
1775	47.795	3.0709	40.305	3.0726
1780	23 57 3.151	3.0717	55.669	3.0730
1785	18.512	3.0726	0 2 11.035	3.0735
1790	33.876	3.0735	26.404	3.0740
1795	49.246	3.0744	41.775	3.0745
1800	23 58 4.620	3.0753	57.148	3.0749
1805	19.998	3.0761	0 3 12.524	3.0754
1810	35.381	3.0770	27.902	3.0759
1815	50.768	3.0779	43.283	3.0764
1820	23 59 6.160	3.0788	58.666	3.0769
1825	21.556	3.0797	0 4 14.052	3.0774
1830	36.956	3.0806	29.440	3.0778
1835	52.361	3.0815	44.830	3.0783
1840	0 0 7.771	3.0824	0 5 0.223	3.0788
1845	23.185	3.0833	15.618	3.0793
1850	38.603	3.0842	31.016	3.0798
1855	54.026	3.0851	46.416	3.0803
1860	0 1 9.454	3.0860	0 6 1.819	3.0808
1865	24.886	3.0869	17.224	3.0813
1870	40.323	3.0879	32.632	3.0818
1875	55.764	3.0888	48.042	3.0823
1880	0 2 11.210	3.0897	0 7 3.455	3.0828
1885	26.661	3.0906	18.870	3.0833
1890	42.116	3.0915	34.288	3.0838
1895	57.575	3.0925	49.708	3.0843
1900	0 3 13.040	3.0934	0 8 5.131	3.0848

Mean right ascensions, &c.—Continued.

Year.	α ARIETIS.		α CETI.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	1 53 8.365	3.3430	2 49 14.423	3.1170
1755	25.083	3.3440	30.009	3.1175
1760	41.805	3.3450	45.598	3.1179
1765	58.533	3.3460	2 50 1.189	3.1184
1770	1 54 15.266	3.3470	16.782	3.1189
1775	32.003	3.3480	32.377	3.1194
1780	48.746	3.3490	47.975	3.1198
1785	1 55 5.493	3.3500	2 51 3.576	3.1203
1790	22.245	3.3510	19.179	3.1208
1795	39.003	3.3520	34.784	3.1213
1800	55.765	3.3530	50.391	3.1218
1805	1 56 12.533	3.3540	2 52 6.001	3.1222
1810	29.305	3.3550	21.614	3.1227
1815	46.082	3.3560	37.228	3.1232
1820	1 57 2.865	3.3570	52.846	3.1237
1825	19.652	3.3580	2 53 8.465	3.1242
1830	36.445	3.3590	24.087	3.1246
1835	53.242	3.3600	39.712	3.1251
1840	1 58 10.045	3.3610	55.338	3.1256
1845	26.852	3.3620	2 54 10.968	3.1261
1850	43.665	3.3630	26.599	3.1266
1855	1 59 0.482	3.3640	42.233	3.1271
1860	17.305	3.3650	57.870	3.1275
1865	34.133	3.3661	2 55 13.509	3.1280
1870	50.966	3.3671	29.150	3.1285
1875	2 0 7.803	3.3681	44.794	3.1290
1880	24.646	3.3691	2 56 0.440	3.1295
1885	41.494	3.3701	16.088	3.1300
1890	58.347	3.3711	31.739	3.1304
1895	2 1 15.206	3.3721	47.393	3.1309
1900	32.069	3.3732	2 57 3.049	3.1314

Mean right ascensions, &c.—Continued.

Year.	α TAURI.		α AURIGÆ.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	4 21 36.293	3.4227	4 58 15.977	4.4004
1755	53.408	3.4232	37.981	4.4014
1760	4 22 10.526	3.4238	59.990	4.4023
1765	27.646	3.4243	4 59 22.004	4.4032
1770	44.769	3.4248	44.023	4.4042
1775	4 23 1.894	3.4254	5 0 6.046	4.4051
1780	19.022	3.4259	28.073	4.4060
1785	36.153	3.4265	50.106	4.4069
1790	53.286	3.4270	5 1 12.142	4.4078
1795	4 24 10.423	3.4275	34.184	4.4087
1800	27.562	3.4281	56.230	4.4096
1805	44.704	3.4286	5 2 18.280	4.4105
1810	4 25 1.848	3.4291	40.335	4.4114
1815	18.995	3.4296	5 3 2.394	4.4122
1820	36.144	3.4302	24.457	4.4131
1825	53.297	3.4307	46.525	4.4140
1830	4 26 10.452	3.4312	5 4 8.597	4.4148
1835	27.609	3.4318	30.673	4.4157
1840	44.769	3.4323	52.754	4.4165
1845	4 27 1.932	3.4328	5 5 14.839	4.4174
1850	19.097	3.4333	36.928	4.4182
1855	36.265	3.4339	59.022	4.4190
1860	53.436	3.4344	5 6 21.119	4.4199
1865	4 28 10.609	3.4349	43.221	4.4207
1870	27.785	3.4354	5 7 5.326	4.4215
1875	44.963	3.4359	27.436	4.4223
1880	4 29 2.144	3.4364	49.550	4.4232
1885	19.327	3.4370	5 8 11.668	4.4240
1890	36.514	3.4375	33.790	4.4248
1895	53.702	3.4380	55.916	4.4256
1900	4 30 10.894	3.4385	5 9 18.045	4.4264

Mean right ascensions, &c.—Continued.

Year.	β Orionis.		β Tauri.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. *m.* *s.*	*s.*	*h.* *m.* *s.*	*s.*
1750	5 2 32.084	2.8757	5 10 30.599	3.7775
1755	46.463	2.8759	49.488	3.7779
1760	5 3 0.843	2.8761	5 11 8.378	3.7784
1765	15.224	2.8763	27.272	3.7788
1770	29.606	2.8765	46.167	3.7793
1775	43.989	2.8767	5 12 5.064	3.7797
1780	58.373	2.8769	23.964	3.7802
1785	5 4 12.758	2.8771	42.866	3.7806
1790	27.144	2.8773	5 13 1.770	3.7811
1795	41.531	2.8775	20.677	3.7815
1800	55.919	2.8777	39.585	3.7819
1805	5 5 10.309	2.8779	58.496	3.7824
1810	24.699	2.8781	5 14 17.409	3.7828
1815	39.090	2.8783	36.324	3.7832
1820	53.482	2.8785	55.241	3.7836
1825	5 6 7.875	2.8787	5 15 14.160	3.7840
1830	22.269	2.8789	33.081	3.7845
1835	36.665	2.8791	52.005	3.7849
1840	51.061	2.8793	5 16 10.930	3.7853
1845	5 7 5.458	2.8795	29.858	3.7857
1850	19.856	2.8797	48.787	3.7861
1855	34.256	2.8799	5 17 7.719	3.7865
1860	48.656	2.8801	26.652	3.7869
1865	5 8 3.057	2.8803	45.588	3.7873
1870	17.459	2.8805	5 18 4.526	3.7877
1875	31.862	2.8807	23.465	3.7881
1880	46.267	2.8809	42.407	3.7885
1885	5 9 0.672	2.8811	5 19 1.350	3.7889
1890	15.078	2.8813	20.296	3.7893
1895	29.485	2.8815	39.243	3.7897
1900	43.893	2.8817	58.193	3.7901

Mean right ascensions, &c.—Continued.

Year.	α ORIONIS.		α CANIS MAJORIS.*	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	s.	h. m. s.	s.
1750	5 41 38.680	3.2429	6 34 7.882	2.6446
1755	54.895	3.2431	21.105	2.6445
1760	5 42 11.111	3.2432	34.327	2.6445
1765	27.327	3.2434	47.550	2.6445
1770	43.545	3.2435	6 35 0.772	2.6444
1775	59.763	3.2437	13.994	2.6444
1780	5 43 15.982	3.2439	27.216	2.6444
1785	32.201	3.2440	40.438	2.6444
1790	48.422	3.2442	53.660	2.6443
1795	5 44 4.643	3.2443	6 36 6.881	2.6443
1800	20.865	3.2445	20.102	2.6443
1805	37.088	3.2446	33.324	2.6442
1810	53.311	3.2448	46.545	2.6442
1815	5 45 9.535	3.2449	59.766	2.6442
1820	25.760	3.2451	6 37 12.986	2.6441
1825	41.986	3.2452	26.207	2.6441
1830	58.212	3.2454	39.427	2.6441
1835	5 46 14.439	3.2455	52.647	2.6440
1840	30.667	3.2456	6 38 5.867	2.6440
1845	46.896	3.2458	19.087	2.6440
1850	5 47 3.125	3.2459	32.307	2.6439
1855	19.355	3.2461	45.527	2.6439
1860	35.586	3.2462	58.746	2.6439
1865	51.817	3.2464	6 39 11.965	2.6438
1870	5 48 8.050	3.2465	25.184	2.6438
1875	24.282	3.2466	38.403	2.6437
1880	40.516	3.2468	51.622	2.6437
1885	56.750	3.2469	6 40 4.840	2.6437
1890	5 49 12.985	3.2470	18.058	2.6436
1895	29.220	3.2472	31.276	2.6436
1900	45.457	3.2473	44.494	2.6436

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* The corrections, P, on p. 69, are to be applied to these positions of α Canis Majoris.

Mean right ascensions, &c.—Continued.

Year.	α Canis Minoris.*		β Geminorum.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	s.	h. m. s.	s.
1750	7 26 12.027	3.1507	7 29 58.793	3.6964
1755	27.780	3.1505	7 30 17.274	3.6958
1760	43.532	3.1502	35.751	3.6952
1765	59.282	3.1499	54.225	3.6946
1770	7 27 15.031	3.1497	7 31 12.697	3.6940
1775	30.779	3.1494	31.165	3.6934
1780	46.525	3.1492	49.631	3.6928
1785	7 28 2.271	3.1489	7 32 8.093	3.6922
1790	18.015	3.1487	26.553	3.6916
1795	33.757	3.1484	45.009	3.6910
1800	49.499	3.1482	7 33 3.462	3.6904
1805	7 29 5.239	3.1479	21.913	3.6898
1810	20.978	3.1476	40.360	3.6892
1815	36.715	3.1474	58.804	3.6885
1820	52.452	3.1471	7 34 17.246	3.6879
1825	7 30 8.187	3.1469	35.684	3.6873
1830	23.920	3.1466	54.119	3.6867
1835	39.653	3.1463	7 35 12.551	3.6861
1840	55.384	3.1461	30.980	3.6855
1845	7 31 11.113	3.1458	49.405	3.6848
1850	26.842	3.1456	7 36 7.828	3.6842
1855	42.569	3.1453	26.248	3.6836
1860	58.295	3.1450	44.664	3.6829
1865	7 32 14.019	3.1448	7 37 3.077	3.6823
1870	29.742	3.1445	21.487	3.6817
1875	45.464	3.1442	39.894	3.6810
1880	7 33 1.185	3.1440	58.298	3.6804
1885	16.904	3.1437	7 38 16.699	3.6798
1890	32.622	3.1434	35.097	3.6791
1895	48.338	3.1432	53.491	3.6785
1900	7 34 4.053	3.1429	7 39 11.882	3.6778

* The corrections, P, on p. 71, are to be applied to these positions of α Canis Minoris.

Mean right ascensions, &c.—Continued.

Year.	α HYDRÆ.		α LEONIS.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	9 15 17.906	2.9512	9 55 1.762	3.2148
1755	32.662	2.9512	17.835	3.2143
1760	47.418	2.9511	33.905	3.2138
1765	9 16 2.173	2.9510	49.973	3.2133
1770	16.928	2.9509	9 56 6.038	3.2128
1775	31.682	2.9508	22.100	3.2122
1780	46.436	2.9507	38.160	3.2117
1785	9 17 1.190	2.9507	54.217	3.2112
1790	15.943	2.9506	9 57 10.272	3.2107
1795	30.695	2.9505	26.324	3.2102
1800	45.448	2.9504	42.373	3.2096
1805	9 18 0.200	2.9503	58.420	3.2091
1810	14.951	2.9503	9 58 14.465	3.2086
1815	29.702	2.9502	30.507	3.2081
1820	44.453	2.9501	46.546	3.2076
1825	59.203	2.9500	9 59 2.582	3.2071
1830	9 19 13.953	2.9500	18.617	3.2066
1835	28.703	2.9499	34.648	3.2061
1840	43.452	2.9498	50.677	3.2056
1845	58.201	2.9497	10 0 6.704	3.2050
1850	9 20 12.950	2.9497	22.728	3.2045
1855	27.698	2.9496	38.749	3.2040
1860	42.446	2.9495	54.768	3.2035
1865	57.193	2.9495	10 1 10.784	3.2030
1870	9 21 11.940	2.9494	26.798	3.2025
1875	26.687	2.9493	42.810	3.2020
1880	41.433	2.9492	58.818	3.2015
1885	56.179	2.9492	10 2 14.825	3.2010
1890	9 22 10.925	2.9491	30.829	3.2005
1895	25.670	2.9490	46.830	3.2000
1900	40.416	2.9490	10 3 2.829	3.1995

Mean right ascensions, &c.—Continued.

Year.	β LEONIS.		α VIRGINIS.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	11 36 17.250	3.0745	13 12 3.448	3.1381
1755	32.622	3.0741	19.140	3.1386
1760	47.992	3.0737	34.834	3.1392
1765	11 37 3.360	3.0733	50.531	3.1397
1770	18.725	3.0729	13 13 6.231	3.1403
1775	34.089	3.0725	21.934	3.1408
1780	49.451	3.0722	37.639	3.1414
1785	11 38 4.811	3.0718	53.348	3.1419
1790	20.169	3.0714	13 14 9.059	3.1425
1795	35.525	3.0710	24.772	3.1430
1800	50.879	3.0706	40.489	3.1436
1805	11 39 6.231	3.0702	56.208	3.1441
1810	21.581	3.0699	13 15 11.930	3.1447
1815	36.929	3.0695	27.655	3.1452
1820	52.276	3.0691	43.382	3.1458
1825	11 40 7.620	3.0687	59.113	3.1464
1830	22.963	3.0683	13 16 14.846	3.1469
1835	38.304	3.0680	30.582	3.1475
1840	53.642	3.0676	46.321	3.1481
1845	11 41 8.980	3.0672	13 17 2.063	3.1486
1850	24.315	3.0669	17.807	3.1492
1855	39.648	3.0665	33.555	3.1498
1860	54.980	3.0661	49.305	3.1503
1865	11 42 10.309	3.0658	13 18 5.058	3.1509
1870	25.637	3.0654	20.814	3.1515
1875	40.963	3.0650	36.573	3.1520
1880	56.288	3.0647	52.334	3.1526
1885	11 43 11.610	3.0643	13 19 8.099	3.1532
1890	26.931	3.0640	23.866	3.1538
1895	42.250	3.0636	39.637	3.1544
1900	57.567	3.0633	55.410	3.1549

Mean right ascensions, &c.—Continued.

Year.	α Bootis.		α^2 Libræ.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	s.	h. m. s.	s.
1750	14 4 15.978	2.7320	14 37 5.726	3.2881
1755	29.638	2.7321	22.168	3.2888
1760	43.299	2.7322	38.614	3.2896
1765	56.960	2.7323	55.064	3.2904
1770	14 5 10.622	2.7324	14 38 11.518	3.2911
1775	24.284	2.7325	27.976	3.2919
1780	37.946	2.7326	44.437	3.2927
1785	51.609	2.7327	14 39 0.902	3.2934
1790	14 6 5.273	2.7328	17.371	3.2942
1795	18.937	2.7329	33.844	3.2950
1800	32.601	2.7330	50.321	3.2957
1805	46.266	2.7331	14 40 6.802	3.2965
1810	59.932	2.7332	23.286	3.2973
1815	14 7 13.598	2.7333	39.775	3.2980
1820	27.265	2.7334	56.267	3.2988
1825	40.932	2.7335	14 41 12.763	3.2996
1830	54.599	2.7336	29.263	3.3004
1835	14 8 8.267	2.7337	45.766	3.3011
1840	21.936	2.7338	14 42 2.274	3.3019
1845	35.605	2.7339	18.785	3.3026
1850	49.275	2.7340	35.301	3.3034
1855	14 9 2.945	2.7341	51.820	3.3042
1860	16.616	2.7342	14 43 8.343	3.3050
1865	30.288	2.7344	24.870	3.3058
1870	43.960	2.7345	41.401	3.3065
1875	57.633	2.7346	57.935	3.3073
1880	14 10 11.306	2.7347	14 44 14.474	3.3081
1885	24.980	2.7348	31.016	3.3089
1890	38.654	2.7350	47.562	3.3096
1895	52.329	2.7351	14 45 4.113	3.3104
1900	14 11 6.005	2.7352	20.667	3.3112

Mean right ascensions, &c.—Continued.

Year.	α CORONÆ.		α SERPENTIS.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	15 24 6.587	2.5360	15 31 58.355	2.9431
1755	19.267	2.5361	15 32 13.071	2.9434
1760	31.948	2.5363	27.789	2.9437
1765	44.630	2.5364	42.508	2.9440
1770	57.312	2.5365	57.229	2.9443
1775	15 25 9.994	2.5366	15 33 11.952	2.9446
1780	22.678	2.5367	26.675	2.9449
1785	35.362	2.5368	41.401	2.9452
1790	48.046	2.5369	56.128	2.9455
1795	15 26 0.731	2.5370	15 34 10.856	2.9458
1800	13.416	2.5372	25.586	2.9462
1805	26.102	2.5373	40.318	2.9465
1810	38.789	2.5374	55.051	2.9468
1815	51.476	2.5375	15 35 9.785	2.9471
1820	15 27 4.164	2.5376	24.521	2.9474
1825	16.852	2.5377	39.259	2.9477
1830	29.541	2.5378	53.998	2.9480
1835	42.231	2.5380	15 36 8.739	2.9483
1840	54.921	2.5381	23.481	2.9486
1845	15 28 7.612	2.5382	38.225	2.9489
1850	20.303	2.5383	52.970	2.9492
1855	32.995	2.5384	15 37 7.717	2.9495
1860	45.687	2.5386	22.465	2.9498
1865	58.380	2.5387	37.215	2.9501
1870	15 29 11.074	2.5388	51.966	2.9504
1875	23.768	2.5389	15 38 6.719	2.9507
1880	36.463	2.5390	21.473	2.9510
1885	49.159	2.5392	36.229	2.9513
1890	15 30 1.855	2.5393	50.987	2.9516
1895	14.552	2.5394	15 39 5.746	2.9520
1900	27.249	2.5395	20.506	2.9523

Mean right ascensions, &c.—Continued.

Year.	α Scorpii.		α Herculis.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	16 14 7.423	3.6487	17 3 15.554	2.7286
1755	25.669	3.6495	29.198	2.7288
1760	43.918	3.6503	42.842	2.7290
1765	16 15 2.172	3.6511	56.487	2.7291
1770	20.429	3.6519	17 4 10.133	2.7293
1775	38.690	3.6527	23.780	2.7295
1780	56.956	3.6534	37.428	2.7297
1785	16 16 15.225	3.6542	51.077	2.7299
1790	33.498	3.6550	17 5 4.727	2.7300
1795	51.775	3.6558	18.378	2.7302
1800	16 17 10.056	3.6566	32.029	2.7304
1805	28.341	3.6573	45.681	2.7306
1810	46.629	3.6581	59.335	2.7307
1815	16 18 4.922	3.6589	17 6 12.989	2.7309
1820	23.218	3.6596	26.644	2.7311
1825	41.518	3.6604	40.300	2.7313
1830	59.822	3.6612	53.956	2.7314
1835	16 19 18.130	3.6619	17 7 7.614	2.7316
1840	36.442	3.6627	21.273	2.7318
1845	54.757	3.6635	34.932	2.7320
1850	16 20 13.076	3.6642	48.592	2.7321
1855	31.399	3.6650	17 8 2.253	2.7323
1860	49.726	3.6657	15.915	2.7325
1865	16 21 8.057	3.6665	29.578	2.7327
1870	26.391	3.6673	43.242	2.7328
1875	44.730	3.6680	56.906	2.7330
1880	16 22 3.072	3.6688	17 9 10.572	2.7332
1885	21.417	3.6695	24.238	2.7333
1890	39.767	3.6703	37.905	2.7335
1895	58.120	3.6710	51.573	2.7337
1900	16 23 16.477	3.6718	17 10 5.242	2.7339

Mean right ascensions, &c.—Continued.

Year.	α OPHIUCHI.		α LYRÆ.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	17 23 20.430	2.7781	18 28 28.585	2.0298
1755	34.320	2.7783	38.734	2.0299
1760	48.212	2.7784	48.883	2.0299
1765	17 24 2.105	2.7786	59.033	2.0300
1770	15.998	2.7788	18 29 9.183	2.0300
1775	29.893	2.7790	19.334	2.0301
1780	43.788	2.7791	29.484	2.0301
1785	57.684	2.7793	39.635	2.0302
1790	17 25 11.581	2.7795	49.786	2.0303
1795	25.479	2.7797	59.938	2.0303
1800	39.377	2.7798	18 30 10.089	2.0304
1805	53.277	2.7800	20.241	2.0304
1810	17 26 7.177	2.7802	30.394	2.0305
1815	21.079	2.7803	40.546	2.0305
1820	34.981	2.7805	50.699	2.0306
1825	48.884	2.7807	18 31 0.852	2.0306
1830	17 27 2.788	2.7809	11.005	2.0307
1835	16.692	2.7810	21.159	2.0307
1840	30.598	2.7812	31.313	2.0308
1845	44.504	2.7814	41.467	2.0308
1850	58.411	2.7815	51.621	2.0309
1855	17 28 12.319	2.7817	18 32 1.776	2.0310
1860	26.228	2.7819	11.931	2.0310
1865	40.138	2.7820	22.086	2.0311
1870	54.049	2.7822	32.241	2.0311
1875	17 29 7.960	2.7824	42.397	2.0312
1880	21.872	2.7825	52.553	2.0312
1885	35.785	2.7827	18 33 2.709	2.0313
1890	49.699	2.7829	12.865	2.0313
1895	17 30 3.614	2.7830	23.022	2.0314
1900	17.530	2.7832	33.179	2.0314

Mean right ascensions, &c.—Continued.

Year.	γ Aquilæ.		α Aquilæ.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	19 34 22.396	2.8536	19 38 34.939	2.9302
1755	36.664	2.8536	49.590	2.9301
1760	50.932	2.8535	19 39 4.240	2.9300
1765	19 35 5.200	2.8535	18.890	2.9299
1770	19.467	2.8534	33.539	2.9298
1775	33.734	2.8534	48.188	2.9297
1780	48.001	2.8534	19 40 2.836	2.9296
1785	19 36 2.268	2.8533	17 484	2.9295
1790	16.534	2.8533	32.132	2.9295
1795	30.800	2.8532	46.779	2.9294
1800	45.066	2.8532	19 41 1.425	2.9293
1805	59.332	2.8531	16.071	2.9292
1810	19 37 13.597	2.8531	30.717	2.9291
1815	27.863	2.8530	45.362	2.9290
1820	42.128	2.8530	19 42 0.007	2.9289
1825	56.392	2.8529	14.652	2.9288
1830	19 38 10.657	2.8529	29.296	2.9287
1835	24.921	2.8528	43.939	2.9286
1840	39.185	2.8528	58.582	2.9286
1845	53.448	2.8527	19 43 13.225	2.9285
1850	19 39 7.712	2.8527	27.867	2.9284
1855	21.975	2.8526	42.508	2.9283
1860	36.238	2.8526	57.150	2.9282
1865	50.500	2.8525	19 44 11.790	2.9281
1870	19 40 4.763	2.8524	26.430	2.9280
1875	19.025	2.8524	41.070	2.9279
1880	33.287	2.8523	55.710	2.9278
1885	47.548	2.8523	19 45 10.349	2.9277
1890	19 41 1.810	2.8522	24.987	2.9276
1895	16.071	2.8522	39.625	2.9275
1900	30.331	2.8521	54.262	2.9274

Mean right ascensions, &c.—Continued.

Year.	β AQUILÆ.		α² CAPRICORNI.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	19 43 1.874	2.9490	20 4 9.754	3.3439
1755	16.619	2.9490	26.473	3.3435
1760	31.364	2.9489	43.189	3.3431
1765	46.108	2.9488	59.902	3.3426
1770	19 44 0.852	2.9488	20 5 16.614	3.3422
1775	15.595	2.9487	33.324	3.3418
1780	30.339	2.9486	50.032	3.3414
1785	45.082	2.9486	20 6 6.738	3.3410
1790	59.824	2.9485	23.442	3.3406
1795	19 45 14.567	2.9484	40.144	3.3402
1800	29.308	2.9483	56.844	3.3397
1805	44.050	2.9483	20 7 13.542	3.3393
1810	58.791	2.9482	30.237	3.3389
1815	19 46 13.532	2.9481	46.931	3.3385
1820	28.273	2.9481	20 8 3.622	3.3381
1825	43.013	2.9480	20.311	3.3376
1830	57.752	2.9479	36.999	3.3372
1835	19 47 12.492	2.9479	53.684	3.3368
1840	27.231	2.9478	20 9 10.367	3.3364
1845	41.970	2.9477	27.048	3.3360
1850	56.708	2.9476	43.726	3.3355
1855	19 48 11.446	2.9476	20 10 0.403	3.3351
1860	26.184	2.9475	17.078	3.3347
1865	40.921	2.9474	33.750	3.3343
1870	55.658	2.9473	50.421	3.3339
1875	19 49 10.394	2.9473	20 11 7.090	3.3334
1880	25.131	2.9472	23.756	3.3330
1885	39.866	2.9471	40.420	3.3326
1890	54.602	2.9471	57.082	3.3322
1895	19 50 9.337	2.9470	20 12 13.742	3.3317
1900	24.072	2.9469	30.400	3.3313

Mean right ascensions, &c.—Continued.

Year.	α CYGNI.		α AQUARII.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	20 32 54.937	2.0414	21 52 56.049	3.0888
1755	20 33 5.144	2.0415	21 53 11.492	3.0886
1760	15.352	2.0416	26.935	3.0884
1765	25.561	2.0417	42.376	3.0881
1770	35.770	2.0418	57.816	3.0879
1775	45.979	2.0419	21 54 13.255	3.0877
1780	56.189	2.0420	28.693	3.0875
1785	20 34 6.399	2.0421	44.130	3.0872
1790	16.610	2.0422	59.565	3.0870
1795	26.822	2.0423	21 55 15.000	3.0868
1800	37.034	2.0424	30.433	3.0866
1805	47.246	2.0425	45.865	3.0863
1810	57.459	2.0426	21 56 1.296	3.0861
1815	20 35 7.673	2.0428	16.726	3.0859
1820	17.887	2.0429	32.155	3.0857
1825	28.101	2.0430	47.583	3.0855
1830	38.316	2.0431	21 57 3.010	3.0852
1835	48.532	2.0432	18.435	3.0850
1840	58.748	2.0433	33.860	3.0848
1845	20 36 8.965	2.0434	49.283	3.0846
1850	19.182	2.0435	21 58 4.706	3.0844
1855	29.399	2.0436	20.127	3.0842
1860	39.618	2.0437	35.548	3.0840
1865	49.836	2.0438	50.967	3.0838
1870	20 37 0.056	2.0439	21 59 6.385	3.0835
1875	10.276	2.0440	21.802	3.0833
1880	20.496	2.0441	37.218	3.0831
1885	30.717	2.0443	52.633	3.0829
1890	40.939	2.0444	22 0 8.048	3.0827
1895	51.161	2.0445	23.461	3.0825
1900	20 38 1.383	2.0446	38.873	3.0823

Mean right ascensions, &c.—Continued.

Year.	α Piscium Australis.		α Pegasi.	
	R. A.	Ann. Var.	R. A.	Ann. Var.
	h. m. s.	*s.*	*h. m. s.*	*s.*
1750	22 43 46.710	3.3551	22 52 19.531	2.9775
1755	22 44 3.483	3.3540	34.419	2.9778
1760	20.250	3.3529	49.309	2.9780
1765	37.012	3.3518	22 53 4.199	2.9783
1770	53.768	3.3507	19.091	2.9785
1775	22 45 10.518	3.3496	33.985	2.9788
1780	27.264	3.3485	48.879	2.9790
1785	44.003	3.3474	22 54 3.775	2.9793
1790	22 46 0.737	3.3463	18.672	2.9795
1795	17.466	3.3452	33.570	2.9798
1800	34.189	3.3441	48.470	2.9801
1805	50.907	3.3430	22 55 3.371	2.9803
1810	22 47 7.619	3.3419	18.273	2.9806
1815	24.326	3.3408	33.177	2.9809
1820	41.028	3.3397	48.082	2.9811
1825	57.724	3.3387	22 56 2.988	2.9814
1830	22 48 14.414	3.3376	17.896	2.9817
1835	31.100	3.3365	32.805	2.9819
1840	47.779	3.3354	47.715	2.9822
1845	22 49 4.454	3.3343	22 57 2.627	2.9825
1850	21.123	3.3333	17.540	2.9828
1855	37.786	3.3322	32.455	2.9830
1860	54.445	3.3311	47.370	2.9833
1865	22 50 11.097	3.3300	22 58 2.288	2.9836
1870	27.745	3.3290	17.206	2.9839
1875	44.387	3.3279	32.126	2.9841
1880	22 51 1.024	3.3268	47.048	2.9844
1885	17.656	3.3258	22 59 1.971	2.9847
1890	34.282	3.3247	16.895	2.9850
1895	50.903	3.3236	31.821	2.9853
1900	22 52 7.518	3.3226	46.748	2.9856

Periodic terms to be applied to the right ascensions of Sirius and Procyon.

α CANIS MAJORIS.

Year.	Year.	Year.	P	
			s.	
1750.6	1800.0	1849.4	+.026	— 20
1751.6	1801.0	1850.4	+.006	— 20
1752.6	1802.0	1851.4	—.014	— 17
1753.6	1803.0	1852.4	—.031	— 16
1754.6	1804.0	1853.4	—.047	— 15
1755.6	1805.0	1854.4	—.062	— 14
1756.6	1806.0	1855.4	—.076	— 12
1757.6	1807.0	1856.4	—.088	— 11
1758.6	1808.0	1857.4	—.099	— 10
1759.6	1809.0	1858.4	—.109	— 9
1760.6	1810.0	1859.4	—.118	— 8
1761.6	1811.0	1860.4	—.126	— 6
1762.6	1812.0	1861.4	—.132	— 6
1763.6	1813.0	1862.4	—.138	— 5
1764.6	1814.0	1863.4	—.143	— 4
1765.6	1815.0	1864.4	—.147	— 2
1766.6	1816.0	1865.4	—.149	— 2
1767.6	1817.0	1866.4	—.151	— 1
1768.6	1818.0	1867.4	—.152	0
1769.6	1819.0	1868.4	—.152	+ 1
1770.6	1820.0	1869.4	—.151	+ 2
1771.6	1821.0	1870.4	—.149	+ 3
1772.6	1822.0	1871.4	—.146	+ 4
1773.6	1823.0	1872.4	—.142	+ 5
1774.6	1824.0	1873.4	—.137	+ 6
1775.6	1825.0	1874.4	—.131	+ 7
1776.6	1826.0	1875.4	—.124	+ 7
1777.6	1827.0	1876.4	—.117	+ 9
1778.6	1828.0	1877.4	—.108	+ 10
1779.6	1829.0	1878.4	—.098	+ 12
1780.6	1830.0	1879.4	—.086	+ 12
1781.6	1831.0	1880.4	—.074	+ 13

Periodic terms, &c.—Continued.

α Canis Majoris—Continued.

Year.	Year.	Year.	P	
			s.	
1782.6	1832.0	1881.4	−.061	+15
1783.6	1833.0	1882.4	−.046	+16
1784.6	1834.0	1883.4	−.030	+18
1785.6	1835.0	1884.4	−.012	+19
1786.6	1836.0	1885.4	+.007	+20
1787.6	1837.0	1886.4	+.027	+22
1788.6	1838.0	1887.4	+.049	+23
1789.6	1839.0	1888.4	+.072	+24
1790.6	1840.0	1889.4	+.096	+24
1791.6	1841.0	1890.4	+.120	+21
1792.6	1842.0	1891.4	+.141	+11
1793.6	1843.0	1892.4	+.152	−5
1794.6	1844.0	1893.4	+.147	−17
1795.6	1845.0	1894.4	+.130	−23
1796.6	1846.0	1895.4	+.107	−25
1797.6	1847.0	1896.4	+.082	−24
1798.6	1848.0	1897.4	+.058	−23
1799.6	1849.0	1898.4	+.035	−21
1800.6	1850.0	1899.4	+.014	−20
1801.6	1851.0	1900.4	−.006	−18
1802.6	1852.0	1901.4	−.024	

Periodic terms, &c.—Continued.

α CANIS MINORIS.

Year.	Year.	Year.	Year.	P	
				s.	
1750.0	1790.0	1830.0	1870.0	—.045	— 8
1751.0	1791.0	1831.0	1871.0	—.053	— 7
1752.0	1792.0	1832.0	1872.0	—.060	— 5
1753.0	1793.0	1833.0	1873.0	—.065	— 3
1754.0	1794.0	1834.0	1874.0	—.068	— 2
1755.0	1795.0	1835.0	1875.0	—.070	0
1756.0	1796.0	1836.0	1876.0	—.070	+ 2
1757.0	1797.0	1837.0	1877.0	—.068	+ 3
1758.0	1798.0	1838.0	1878.0	—.065	+ 5
1759.0	1799.0	1839.0	1879.0	—.060	+ 7
1760.0	1800.0	1840.0	1880.0	—.053	+ 8
1761.0	1801.0	1841.0	1881.0	—.045	+ 9
1762.0	1802.0	1842.0	1882.0	—.036	+ 10
1763.0	1803.0	1843.0	1883.0	—.026	+ 10
1764.0	1804.0	1844.0	1884.0	—.016	+ 10
1765.0	1805.0	1845.0	1885.0	—.006	+ 11
1766.0	1806.0	1846.0	1886.0	+.005	+ 10
1767.0	1807.0	1847.0	1887.0	+.015	+ 11
1768.0	1808.0	1848.0	1888.0	+.026	+ 10
1769.0	1809.0	1849.0	1889.0	+.036	+ 9
1770.0	1810.0	1850.0	1890.0	+.045	+ 8
1771.0	1811.0	1851.0	1891.0	+.053	+ 7
1772.0	1812.0	1852.0	1892.0	+.060	+ 5
1773.0	1813.0	1853.0	1893.0	+.065	+ 3
1774.0	1814.0	1854.0	1894.0	+.068	+ 2
1775.0	1815.0	1855.0	1895.0	+.070	0
1776.0	1816.0	1856.0	1896.0	+.070	— 2
1777.0	1817.0	1857.0	1897.0	+.068	— 3
1778.0	1818.0	1858.0	1898.0	+.065	— 5
1779.0	1819.0	1859.0	1899.0	+.060	— 6
1780.0	1820.0	1860.0	1900.0	+.054	— 8
1781.0	1821.0	1861.0	1901.0	+.046	— 9

Periodic terms, &c.—Continued.

α CANIS MINORIS—Continued.

Year.	Year.	Year.	Year.	P	
				s.	
1782.0	1822.0	1862.0	1902.0	+.037	−10
1783.0	1823.0	1863.0	1903.0	+.027	−10
1784.0	1824.0	1864.0	1904.0	+.017	−11
1785.0	1825.0	1865.0	1905.0	+.006	−11
1786.0	1826.0	1866.0	1906.0	−.005	−10
1787.0	1827.0	1867.0	1907.0	−.015	−12
1788.0	1828.0	1868.0	1908.0	−.027	−10
1789.0	1829.0	1869.0	1909.0	−.037	−9
1790.0	1830.0	1870.0	1910.0	−.046	

HILL'S FORMULÆ FOR THE SECULAR VARIATION OF THE ANNUAL MOTION OF THE STARS.

[From Star-Tables of the American Ephemeris, p. xix.]

These formulæ, being more complete than those usually employed, are given here, for convenience of reference, in a slightly modified form.

Put—

μ, the proper motion in right ascension, expressed in seconds of time;

μ', the same in declination, expressed in seconds of arc;

p, p', the annual precessions, expressed in the same way with μ and μ', respectively.

We then have—

$$p = m + n \sin\alpha \tan\delta$$

$$p' = n \cos\alpha$$

$$\frac{d\alpha}{dt} = p + \mu$$

$$\frac{d\delta}{dt} = p' + \mu'$$

$$100\,\frac{d\mu}{dt} = [7.9878]\,\mu \cos\alpha \tan\delta + [6.8117]\,\mu' \sin\alpha \sec^2\delta$$

$$100\,\frac{d\mu'}{dt} = -\,[9.1640]\,\mu \sin\alpha$$

$$\begin{aligned} 100\,\frac{d^2\alpha}{dt^2} = &+ .00322 \\ &- [6.6338]\,p \\ &+ [7.9878]\,(p + 2\,\mu) \cos\alpha \tan\delta \\ &+ [6.8117]\,(p' + 2\,\mu') \sin\alpha \sec^2\delta \\ &+ [6.9866]\,\mu\,\mu' \tan\delta \end{aligned}$$

$$\begin{aligned} 100\,\frac{d^2\delta}{dt^2} = &- [6.6338]\,p' \\ &- [9.1640]\,(p + 2\,\mu) \sin\alpha \\ &- [8.7367]\,\mu^2 \sin 2\,\delta \end{aligned}$$

Struve's values of m *and* n.

Year.	*m*	*n*	log *n*	*n*	log *n*
	s.	s.		″	
1750	3.06987	1.33767	0.12635	20.0650	1.30244
1800	3.07082	1.33738	0.12626	20.0607	1.30235
1850	3.07177	1.33710	0.12616	20.0564	1.30225
1900	3.07272	1.33681	0.12607	20.0521	1.30216

APPENDIX IV.

WASHINGTON ZONES.

TABLE OF CONTENTS.

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The Instrument	V
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INTRODUCTION.

The following zones of stars were observed with the Transit Instrument in the years 1846, 1847, 1848, and 1849, and form the complement of the zones observed with the Mural Circle in the same years; it having been the intention that the Transit Instrument should furnish for the reductions the standard right ascensions and the Mural Circle the standard declinations.

§ 1.

THE INSTRUMENT.

The instrument employed in making these observations was designated in those years as the West Transit Instrument. It was made by Ertel & Son, of Munich. The objective had a focal length of 7 feet 1 inch and a clear aperture of 5.3 inches. A description of this instrument and its mountings, together with a plate, may be found in the annual volume of the Observatory for 1845.

The system of wires used in the observations of right ascension consisted of seven vertical wires. These wires were lettered in order from the clamp side of the axis, and the equatorial reductions of each wire to the mean of the seven were as follows:

Wires.	1846.	1847.	1848.	1849, Jan. 23.	1849.
	s.	s.	s.	s.	s.
A	+ 37.686	+ 37.66	+ 37.66	+ 37.482	+ 37.536
B	+ 25.030	+ 24.97	+ 24.97	+ 25.086	+ 25.005
C	+ 12.389	+ 12.37	+ 12.37	+ 12.536	+ 12.535
D	− 0.138	− 0.16	− 0.16	− 0.077	0.000
E	− 12.515	− 12.58	− 12.58	− 12.570	− 12.499
F	− 24.922	− 24.72	− 24.72	− 25.002	− 25.020
G	− 37.532	− 37.54	− 37.54	− 37.457	− 37.548

In order to observe differences of declination, the diaphragm, which carried a wire movable by a micrometer-screw, and commonly used in determining the values of the collimation and level errors, was turned round 90° and provided with a system of ten wires. The value of one revolution of the micrometer-screw was nearly 24″.8 The books and papers containing the determinations of a value of one revolution of the micrometer-screw, and the values of the intervals of the wires, together with the tables of reduction prepared by Professor Keith, have not yet been found. The only way of recovering these values will be by a comparison of the stars common to the zones observed with the Transit Instrument and the Mural Circle.

§ 2.

In the following table are given, for the year 1849, the corrections of the clock and its hourly rates, and also the quantities *m*, *n*, *c*, which furnish the reduction of the observations of right ascension to the plane of the meridian. The similar quantities, for the years 1846, 1847, and 1848 are given in the observations near the bottom of the page. These quantities are given for sidereal time.

Date.		Corr.	Hourly rate.	*m*	*n*	*c*	Zone.
1849.	h.	s.	s.				
Jan. 23,	5	− 2.21	*l.* 0.019	. .	. .	. .	210
27,	5	− 6.33	*l.* 0.025	. .	. .	. .	211
Feb. 10,	7	− 25.56	*l.* 0.019	− 0.572	+ 0.813	+ 0.031	212
13,	7	− 26.91	*l.* 0.004	− 0.589	+ 0.836	+ 0.031	213
13,	7	− 26.91	*l.* 0.004	− 0.589	+ 0.836	+ 0.031	214
19,	7	− 25.26	0.000	. .	. .	. .	215
19,	7	− 25.26	0.000	. .	. .	. .	216
23,	7	+ 33.88	0.000	. .	. .	. .	217
Mar. 7,	7	+ 28.32	*g.* 0.055	. .	. .	. .	218
12,	9	+ 28.07	*g.* 0.020	. .	. .	. .	219
16,	9	+ 24.74	*l.* 0.010	. .	. .	. .	220
16,	9	+ 24.74	*l.* 0.010	. .	. .	. .	221
19,	9	+ 23.66	*l.* 0.020	. .	. .	. .	222
22,	9	+ 23.63	*l.* 0.043	. .	. .	. .	223
22,	9	+ 23.63	*l.* 0.043	. .	. .	. .	224
23,	9	+ 24.66	*l.* 0.043	. .	. .	. .	225
23,	9	+ 24.66	*l.* 0.043	. .	. .	. .	226
29,	9	+ 24.61	*g.* 0.035	. .	. .	. .	227
30,	9	+ 23.76	*g.* 0.035	. .	. .	. .	228
April 2,	10	+ 24.45	*l.* 0.032	− 0.665	+ 1.026	+ 0.021	229
5,	10	+ 26.88	*l.* 0.060	. .	. .	. .	230
5,	10	+ 26.88	*l.* 0.060	. .	. .	. .	231
10,	10	+ 34.53	*l.* 0.018	. .	. .	. .	232
11,	10	+ 35.62	*l.* 0.080	. .	. .	. .	233
11,	10	+ 35.62	*l.* 0.080	. .	. .	. .	234
12,	10	+ 38.03	*l.* 0.077	. .	. .	. .	235
14,	12	+ 42.02	*l.* 0.092	. .	. .	. .	236
16,	12	+ 47.06	*l.* 0.095	. .	. .	. .	237
20,	12	− 4.23	*l.* 0.084	. .	. .	. .	238
May 2,	13	+ 10.03	*l.* 0.072	. .	. .	. .	239
11,	14	+ 20.16	*l.* 0.052	. .	. .	. .	240
19,	15	+ 33.11	*l.* 0.022	. .	. .	. .	241
23,	15	+ 40.97	*l.* 0.071	. .	. .	. .	242
June 18,	16	+ 21.12	*l.* 0.082	− 0.674	+ 1.306	+ 0.075	243
20,	16	+ 25.56	*l.* 0.092	. .	. .	. .	244
22,	16	+ 30.01	*l.* 0.093	. .	. .	. .	245

The readings of the meteorological instruments employed in the reductions appear to have been taken, for the most part, from the observing-books of the Mural Circle.

§ 3.

The method of reduction was the same as that used for the Mural Zones, and which has been described on pages XIX and XX of the introduction to those zones.

The observers were Professor Reuel Keith, U. S. N., who observed from the beginning until the end of the observations; Professor Mark H. Beecher, U. S. N., who began observing in the early part of 1847 and continued until the end; and Lieutenants John J. Almy and William A. Parker, U. S. N. A few zones were observed in 1847 by Professor Joseph S. Hubbard, U. S. N.

The adjustments of the instrument were made by Professor Keith, who also made observations for determining the value of a revolution of the screw of the micrometer, and for determining the values of the intervals of the wires used in observing differences of declination.

The proofs have been compared with the observing-books and made to agree with them. The results deduced by Dr. Gould, and his notes to the observations, have been printed without change. In reading the proofs I have been assisted chiefly by Mr. A. N. Skinner. Professor Nourse assisted in reading a few of the signatures.

A. HALL,
Professor of Mathematics, U. S. N.

SEPTEMBER 14, 1872.

INDEX OF ZONES.

In the following index, D denotes the declination of the middle of the zone, and the following columns give the extent in right ascension, and the number of the zone, the page on which it will be found, and the number of stars it contains.

The whole number of observations of stars in these zones is 12,033; of which—

Professor Keith made	4,881
Professor Beecher made	3,109
Professor Hubbard made	752
Lieutenant Almy made	2,146
Lieutenant Parker made	1,145

D = −41° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m. 8 2 to 11 0	222	235	93

D = −39° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
9 16 to 9 58	1	3	8
14 17 to 15 0	2	3	12
15 47 to 17 5	3	3	10
9 37 to 11 12	4	4	15
9 39 to 10 27	5	4	21
11 10 to 12 49	6	4	43
16 10 to 16 55	34	36	23
16 54 to 18 5	43	43	43
18 59 to 20 0	60	61	31
18 28 to 19 0	65	64	22
20 7 to 20 58	78	80	15
21 3 to 22 58	94	92	35
23 8 to 23 31	96	94	11
23 30 to 0 29	97	94	10
0 14 to 3 0	103	99	36
11 57 to 14 17	228	246	75

D = −38° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
11 4 to 12 59	7	5	52
14 30 to 19 3	21	20	37
9 38 to 10 14	216	229	10

D = −38° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m. 14 1 to 15 29	8	7	28
15 15 to 15 39	23	22	12
15 59 to 16 43	24	22	14
15 27 to 18 12	29	28	80
17 44 to 19 0	47	46	35
19 47 to 0 2	71	70	62
8 15 to 11 15	223	237	96

D = −37° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
11 30 to 14 1	232	252	98

D = −36° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
9 39 to 11 47	9	7	13
14 32 to 15 33	10	8	9
14 48 to 18 15	22	21	50
16 40 to 16 57	38	40	12
18 5 to 21 0	56	55	46
20 58 to 23 58	74	74	70
0 31 to 1 39	92	91	23
7 34 to 9 42	220	233	70

D = −36° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
11 43 to 13 4	214	227	24

D = −35° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
10 47 to 13 41	11	8	44
14 36 to 17 43	12	9	40
17 6 to 17 35	31	33	15
18 34 to 20 20	41	42	50
17 20 to 18 32	44	44	50
20 15 to 21 4	61	61	29
21 1 to 21 59	68	67	27
22 56 to 0 5	69	68	21
19 56 to 20 45	75	75	33
22 23 to 22 59	85	87	17
8 33 to 9 14	219	233	19
13 27 to 14 40	226	243	38

D = −35° 0′.

19 28 to 19 56	67	67	9
12 35 to 13 47	224	239	45

D = −34° 25′.

9 17 to 11 34	13	10	21
14 3 to 17 0	19	17	77
17 50 to 19 16	20	19	63
16 5 to 16 15	37	40	7
17 2 to 17 56	39	40	37
20 8 to 0 0	73	72	80
22 54 to 23 20	88	89	12
1 6 to 2 53	98	94	55
0 0 to 1 3	100	97	20
7 25 to 10 2	218	231	95
11 32 to 12 36	221	235	18

D = −33° 15′.

10 54 to 13 2	14	10	60
14 25 to 17 50	15	12	80
16 44 to 18 41	26	25	90
19 48 to 20 45	27	27	35
0 1 to 0 57	93	92	16
1 57 to 3 2	102	98	19
7 54 to 9 56	213	226	55

D = −31° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
14 38 to 15 28	28	28	18
15 37 to 21 12	30	30	145
21 20 to 22 46	48	47	27
18 14 to 18 35	62	62	16
22 18 to 1 2	87	88	50
6 0 to 8 31	217	229	88
8 21 to 12 0	225	240	148

D = −31° 15′.

10 52 to 13 55	115	107	64
20 6 to 21 48	130	130	46
22 55 to 0 58	131	131	38

D = −30° 40′.

14 44 to 16 46	18	16	18
16 26 to 19 30	25	23	113
19 52 to 21 5	49	48	34
19 32 to 20 0	72	72	17
20 59 to 0 58	77	78	104
0 56 to 3 2	99	96	54
9 6 to 11 56	107	102	58
13 40 to 17 6	119	111	119
17 17 to 19 1	120	113	87
19 35 to 21 56	134	134	85
11 55 to 13 59	227	244	75
11 30 to 14 1	232	252	98

D = −30° 0′.

16 43 to 16 53	46	46	8
8 33 to 9 35	104	100	48
9 14 to 13 0	109	103	104
14 16 to 16 0	110	105	26
15 13 to 21 2	122	117	104
15 8 to 19 6	123	119	67
23 45 to 1 24	140	146	46

D = −29° 25′.

13 47 to 16 46	17	14	111
14 54 to 19 22	32	33	91
18 1 to 18 18	40	41	12
19 31 to 21 45	59	59	80
21 25 to 23 57	76	76	80

29° 25′—Continued.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
21 25 to 23 57	79	80	75
0 39 to 1 28	80	82	19
0 0 to 0 30	89	89	12
1 32 to 2 53	101	97	40
10 22 to 10 25	108	103	2
10 28 to 10 51	114	107	9
17 29 to 20 42	125	121	78
18 41 to 20 48	126	123	66
12 6 to 14 1	241	265	67

D = −28° 45′.

Right Ascension.	Zone.	Page.	No. Stars.
9 48 to 11 0	111	106	21
11 1 to 11 3	112	106	3
14 46 to 15 0	113	106	4
11 51 to 14 49	116	108	51
15 53 to 17 25	117	109	36
19 36 to 21 0	128	126	58
22 29 to 1 1	138	141	126
2 1 to 4 0	139	144	97
6 58 to 9 1	215	227	52

D = −28° 10′.

Right Ascension.	Zone.	Page.	No. Stars.
11 52 to 13 57	16	13	33
15 12 to 16 11	33	35	34
16 22 to 16 49	42	43	25
21 42 to 23 9	50	49	25
17 10 to 18 44	51	49	50
18 45 to 21 17	52	50	75
21 11 to 23 3	81	83	54
23 16 to 0 54	82	84	50
1 0 to 3 0	95	93	46
13 41 to 15 56	118	110	33
19 59 to 21 48	132	132	57

D = −27° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
20 9 to 1 56	127	124	74
12 29 to 13 1	234	256	19

D = −26° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
16 2 to 19 3	36	37	137
19 0 to 19 33	63	62	25
19 31 to 22 8	70	68	100
22 11 to 23 56	84	85	58

D = −26° 55′—Continued.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
23 56 to 2 27	90	89	67
8 59 to 10 36	105	101	24
9 50 to 10 59	106	101	20
15 12 to 17 20	121	115	56
20 10 to 23 24	133	133	61
23 24 to 2 2	135	136	75
2 57 to 3 58	157	167	24
17 25 to 17 50	177	189	15
17 53 to 19 52	178	189	60
6 10 to 7 37	210	224	37
4 4 to 4 49	211	224	16
10 23 to 11 3	236	259	23

D = −26° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
22 19 to 2 2	136	138	144
2 37 to 3 59	155	163	44
6 22 to 8 14	156	164	100
16 4 to 18 28	165	176	58
4 15 to 5 14	212	225	30

D = −25° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
17 31 to 19 50	53	52	89
20 47 to 22 30	54	54	54
22 15 to 23 59	85	87	22
20 7 to 3 0	129	127	127
23 52 to 0 20	148	158	13
4 17 to 4 54	152	162	9
5 44 to 6 11	160	170	17
7 14 to 9 4	161	171	58
8 36 to 10 59	162	172	70
14 4 to 15 47	163	174	25
15 5 to 19 49	164	174	106
11 48 to 15 1	235	257	100

D = −25° 0′.

Right Ascension.	Zone.	Page.	No. Stars.
0 29 to 3 58	149	159	68
7 8 to 7 35	150	160	17
7 17 to 7 38	153	162	8
7 41 to 8 28	159	170	25
15 5 to 16 27	166	178	36
16 52 to 16 59	172	184	5
16 37 to 19 38	174	185	100
17 34 to 18 24	175	187	31
9 14 to 11 0	230	250	70
13 7 to 15 5	231	251	46

D = −24° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
18 15 to 21 42	57	56	108
21 50 to 23 25	64	63	45
21 20 to 21 50	83	85	17
19 55 to 20 12	91	91	13
21 57 to 0 0	137	141	37
1 52 to 3 53	151	161	33
15 11 to 17 27	168	180	62
10 10 to 14 0	229	247	115

D = −23° 45′.

Right Ascension.	Zone.	Page.	No. Stars.
22 58 to 1 26	141	147	160
2 27 to 5 0	142	151	177
6 7 to 8 4	154	162	61
5 54 to 7 42	158	167	125
19 15 to 21 41	186	202	79
10 24 to 12 56	238	261	83
14 55 to 16 17	239	263	55
13 42 to 14 59	240	264	48
16 16 to 16 34	242	267	9

D = −23° 10′.

Right Ascension.	Zone.	Page.	No. Stars.
22 7 to 0 1	143	154	29
1 29 to 2 32	144	155	21
15 51 to 17 20	243	267	41

D = −22° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
22 16 to 0 19	145	155	76
3 8 to 4 23	146	157	37
20 59 to 22 1	176	188	31
20 13 to 22 31	179	190	70
18 55 to 20 35	192	208	50
10 12 to 14 31	237	259	109

D = −21° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
22 27 to 23 26	147	158	19
18 26 to 22 16	182	194	95
22 31 to 0 32	189	205	44
15 55 to 18 32	245	270	69

D = −21° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
19 18 to 21 47	180	192	65
22 38 to 23 27	187	204	19
22 35 to 23 56	188	204	40
15 45 to 17 51	244	268	74

D = −20° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
17 16 to 18 12	171	184	26
16 34 to 17 6	170	184	9
18 1 to 20 31	184	197	86
20 4 to 21 49	190	206	69
23 8 to 0 32	191	208	37

D = −20° 0′.

Right Ascension.	Zone.	Page.	No. Stars.
15 42 to 20 29	169	181	124
22 36 to 0 18	198	215	36

D = −19° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
20 29 to 22 1	181	193	42
18 54 to 20 38	183	196	54
22 42 to 0 9	200	217	35
3 10 to 4 4	203	218	22

D = −18° 45′.

Right Ascension.	Zone.	Page.	No. Stars.
17 57 to 21 45	185	199	134
20 13 to 22 0	193	210	59
23 33 to 23 53	206	221	6
1 49 to 2 18	207	221	11
21 35 to 22 18	208	222	10
0 0 to 2 57	209	222	74

D = −17° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
20 32 to 21 14	194	211	14
22 38 to 23 59	199	216	37

D = −16° 55′.

Right Ascension. h. m. h. m.	Zone.	Page.	No. Stars.
19 48 to 20 54	195	211	23
20 5 to 22 0	196	212	70
23 6 to 2 1	197	213	79

D = −16° 15′.

Right Ascension. h. m. h. m.	Zone.	Page.	No. Stars.
23 0 to 23 20	201	217	9
1 44 to 2 56	202	218	22

D = −15° 40′.

Right Ascension. h. m. h m.	Zone.	Page.	No. Stars.
21 33 to 22 27	204	219	21
20 46 to 0 12	205	219	89

D = −9° 20′.

Right Ascension. h. m. h. m.	Zone.	Page.	No. Stars.
18 57 to 20 57	167	178	53

ZONES OF STARS

OBSERVED AT THE NAVAL OBSERVATORY

WITH

THE MERIDIAN TRANSIT INSTRUMENT

IN THE

YEARS 1846-'47-'48-'49.

ZONES OF STARS

OBSERVED WITH THE

MERIDIAN TRANSIT INSTRUMENT AT THE NAVAL OBSERVATORY IN THE YEARS 1846–'47–'48–'49.

Zone 1. March 21. A. $D_\circ = -39^\circ\ 0'\ 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.	.		r.	′ ″	″	h. m. s.	° ′ ″
1	7	. .	53.5	9.5	25.7	42.0	58.5	14.6	9 16 25.88	— 16.86	VII.	7	4.41	—31 21.4	. .	9 16 9.02	
2	9	59.5	16.4	32.5	48.5	4.5	20.5	37.5	21 48.49	16.82	VII.	5	2.0	20 55.4	. .	21 31.67	
3	10	. .	. .	33.5	49.2	5.5	21.5	38.5	27 49.38	16.77	VII.	5	2.9	20 59.9	. .	27 32.61	
4	9	. .	. .	16.5	32.2	. .	. .	. .	33 32.12	16.72	IV.	4	2.10	15 59.3	. .	33 15.40	
5	9	18.0	34.5	50.5	6.5	22.5	38.6	55.4	38 6.57	16.69	VII.	6	3.42	25 49.5	. .	37 49.88	
6	8	21.2	37.2	53.2	9.2	25.3	42.2	58.5	44 9.53	16.63	VII.	5	8.41	24 18.8	. .	43 52.90	
7	8	55.8	11.8	28.2	44.0	0.3	16.3	33.0	48 44.11	15.59	VII.	4	0.40	15 13.6	. .	48 28.52	
8	7	. .	5.3	22.4	37.9	54.0	10.2	. .	9 57 37.74	— 16.50	VI.	7	3.18	—30 39.4	. .	9 57 21.24	

Zone 2. April 6. K. $D_\circ = -39^\circ\ 1'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	15.2	31.7	. .	. .	. .	. .	14 17 47.33	— 14.80	IV.	2	8.25	— 9 7.7	— 55.2	14 17 32.53	— 39 11 32.9
2	8	. .	. .	3.7	20.0	. .	. .	. .	21 19.80	14.74	.	8	. .	. .	. .	21 5.06	
3	8	. .	. .	. .	. .	21.1	. .	53.2	22 4.91	14.73	VI.	7	13.48	35 59.2	54.6	21 50.18	38 23.8
4	7	. .	2.4	18.4	34.7	50.8	. .	. .	27 34.56	14.63	VI.	6	3.29	30 47.5	53.9	27 19.93	33 11.4
5	11	. .	. .	. .	. .	37.8	54.1	. .	29 21.77	14.60	VI.	3	8.22	14 7.1	53.7	29 7.17	16 30.8
6	8	43.9	0.1	. .	. .	. .	. .	. .	38 32.41	14.45	III.	3	10.33	15 13.6	52.2	38 17.96	17 35.8
7	8	. .	. .	25.1	41.6	. .	. .	. .	39 41.38	14.41	VI.	9	11.1	44 36.1	52.1	39 26.97	46 58.2
8	8	. .	56.7	13.2	. .	. .	. .	. .	44 28.76	14.35	III.	1	11.55	5 23.0	51.4	44 14.41	7 44.4
9	7	. .	44.2	0.7	16.8	. .	. .	. .	49 16.48	14.28	II.	3	11.8	15 31.4	50.6	49 2.20	17 52.0
10	9	. .	. .	. .	. .	59.2	15.3	. .	50 43.08	14.25	V.	2	9.58	9 24.5	50.4	50 28.83	11 44.9
11	9	. .	5.6	22.0	. .	. .	. .	. .	55 37.92	14.17	III.	5	13.54	26 57.6	49.6	55 23.75	29 17.2
12	11	. .	. .	. .	. .	30.4	. .	. .	14 59 14.34	— 14.11	V.	9	1.55	—39 58.9	— 48.9	14 59 0.23	— 39 42 17.8

Zone 3. April 6. K. $D_\circ = -39^\circ\ 1'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	29.8	46.1	. .	. .	. .	50.6	. .	15 47 18.45	— 13.36	IV.	5	6.0	—22 57.1	— 33.5	15 47 5.09	— 39 25 0.6
2	10	. .	43.1	59.4	15.7	. .	. .	. .	16 0 15.59	13.17	IV.	9	5.5	41 35.3	30.6	16 0 2.42	43 35.0
3	11	. .	31.3	47.9	3.8	. .	. .	. .	5 3.56	13.10	V.	3	5.2	12 25.7	29.5	4 50.46	14 25.2
4	10	. .	46.3	2.5	. .	. .	. .	. .	10 18.34	13.03	IV.	3	7.38	13 44.9	28.2	10 5.31	15 43.1
5	9	. .	8.2	24.6	. .	56.6	. .	. .	34 40.26	12.70	IV.	1	8.55	4 22.1	22.2	34 27.56	6 14.3
6	6	. .	. .	. .	45.6	. .	. .	. .	36 45.42	12.67	VI.	1	8.00	3 54.0	21.5	36 32.75	5 45.5
7	8	. .	. .	. .	. .	. .	. .	46.8	36 58.09	12.67	VII.	3	6.59	13 23.9	21.5	36 45.42	15 15.4
8	9	. .	0.0	16.2	32.3	. .	. .	. .	16 45 32.06	12.56	III.	3	7.13	13 32.1	19.3	16 45 19.50	15 21.4
9	7	18.6	34.8	51.3	7.3	. .	. .	. .	17 2 7.11	12.36	II.	4	4.5	16 57.4	14.8	17 1 54.75	18 42.2
10	8	. .	44.2	0.6	17.0	. .	. .	. .	17 4 16.71	— 12.34	IV.	7	8.22	—33 13.7	— 14.2	17 4 4.37	— 39 34 57.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
March 21, 6	— 23.15	— 0.001	— 0.203	+ 0.325	— 0.108
April 6, 6	— 25.68	— 0.007	— 0.207	+ 0.195	+ 0.116

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 1	March 21, 9 16	30.227	53.0	45.0
Zone 2	April 3,	32.156	55.0	

REMARKS.

(1) 1 to 8. Instrument evidently not firmly clamped. Declinations rejected.

Zone 4. April 9. A. $D_{\circ}=-39^{\circ}\ 2'\ 30''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	17.5	34.0	50.5	6.6	22.8	38.6	55.0	9 38 6.43	— 16.77	I.	4	11.25	—20 40.2	— 7.9	9 37 49.66	— 39 23 18.1
2	8	20.6	36.9	53.2	9.4	25.8	41.7	58.0	44 9.37	16.73	II.	5	11.16	25 36.6	9.4	43 52.64	28 16.0
3	9	. .	11.6	28.0	44.2	0.2	16.2	32.2	48 43.96	16.69	II.	6	9.25	27 42.5	10.6	48 27.27	30 23.1
4	10	. .	50.0	6.3	22.6	38.5	54.6	11.0	52 22.36	16.66	II.	5	9.52	24 54.5	11.4	52 5.70	27 35.0
5	7	. .	49.5	5.6	21.9	37.9	53.7	10.2	9 58 21.57	16.61	II.	3	4.52	12 20.4	12.7	9 58 4.96	15 3.1
6	8	. .	17.9	34.1	. .	6.5	22.3	38.8	10 5 50.07	16.55	II.	3	5.14	12 31.6	14.4	10 5 33.52	15 16.0
7	10	7.2	23.6	40.1	56.2	12.2	28.5	44.5	11 56.04	16.49	I.	6	5.14	26 36.3	15.8	11 39.55	29 22.1
8	10	54.5	9.8	26.3	42.5	58.6	14.9	31.1	18 42.53	16.43	I.	6	4.42	26 19.4	17.2	18 26.10	29 6.6
9	9	17.5	33.9	50.2	6.4	22.5	38.8	54.9	25 6.31	16.37	II.	6	6.3	27 0.9	18.6	24 49.94	29 49.5
10	7	. .	. .	. .	. .	26.3	42.5	58.8	27 10.24	16.35	V.	6	1.27	25 11.4	18.9	26 53.89	28 0.3
11	10	. .	7.5	24.0	39.5	56.5	12.2	28.8	38 39.96	16.22	II.	6	3.9	25 32.6	21.3	38 23.74	28 23.9
12	9	. .	59.0	15.2	31.8	47.9	3.8	20.0	46 31.55	16.14	II.	7	10.35	34 20.9	22.7	46 15.41	37 13.6
13	8	53.6	10.0	26.4	42.5	58.6	14.9	31.1	53 42.44	16.06	I.	5	7.45	23 49.7	23.9	53 26.38	26 43.6
14	7	. .	53.8	9.7	26.6	42.6	58.4	14.6	10 57 26.16	16.01	II.	6	6.23	27 11.1	24.6	10 57 10.15	30 5.7
15	8	. .	. .	. .	18.0	34.0	49.9	6.2	11 12 17.80	— 15.83	.	8	7.39	—37 52.4	— 27.0	11 12 1.97	— 39 40 49.4

Zone 5. April 13. K. $D_{\circ}=-39^{\circ}\ 2'\ 30''$.

1	10	. .	0.4	. .	33.2	. .	. .	. .	9 39 32.88	— 16.37	V.	5	9.56	—24 56.7	— 7.2	9 39 16.51	— 39 27 33.9
2	10	. .	. .	. .	. .	. .	27.1	43.3	40 54.80	16.36	VII.	4	9.37	9 45.4	7.7	40 38.44	22 23.1
3	.	. .	. .	. .	. .	25.1	41.2	57.3	44 8.88	16.34	.	.	. .	. . .	. .	43 52.54	
4	8	. .	. .	36.0	52.0	. .	. .	. .	46 51.77	16.32	IV.	3	10.17	15 6.6	9.7	46 35.45	17 46.3
5	7	. .	. .	27.5	43.8	. .	. .	. .	48 43.54	16.31	IV.	6	7.19	27 39.8	10.3	48 27.23	30 20.1
6	8	. .	. .	. .	. .	51.	7.4	. .	50 35.01	16.30	VII.	9	3.45	40 54.0	10.9	50 18.71	43 34.9
7	10	. .	. .	. .	. .	. .	. .	10.3	52 21.77	16.28	VII.	6	2.03	24 58.8	11.5	52 5.49	27 40.3
8	7	48.7	5.2	21.3	37.1	. .	. .	. .	58 37.13	16.24	VI.	3	4.38	12 13.2	13.4	58 20.89	14 56.6
9	8	. .	. .	. .	. .	12.7	. .	45.1	9 59 56.48	16.23	VII.	4	5.40	17 45.1	13.9	9 59 40.25	20 29.0
10	9	. .	51.2	7.3	24.0	. .	. .	. .	10 3 23.69	16.21	VI.	9	5.11	41 38.1	14.9	10 3 7.48	44 23.0
11	8	. .	17.2	. .	49.6	. .	. .	. .	5 49.40	16.18	IV.	3	5.10	12 29.8	15.7	5 33.22	15 15.5
12	7	. .	. .	23.1	39.5	. .	. .	. .	7 39.24	16.17	III.	7	8.49	33 27.3	16.2	7 23.07	36 13.5
13	7	. .	. .	. .	. .	. .	. .	37.6	7 49.15	16.17	VII.	7	4.40	31 20.4	16.3	7 32.98	34 6.7
14	9	. .	. .	. .	. .	. .	. .	27.9	9 39.47	16.15	VII.	7	7.54	32 58.8	16.9	9 23.32	35 45.7
15	9	. .	. .	39.6	. .	. .	. .	. .	11 55.54	16.13	V.	6	5.10	26 34.2	17.6	11 39.41	29 21.8
16	9	. .	. .	22.2	. .	. .	. .	. .	14 38.28	16.11	III.	8	2.8	35 4.4	18.4	14 22.17	37 52.8
17	9	. .	. .	. .	. .	. .	38.1	. .	15 5.86	16.11	VII.	9	1.16	29 36.8	18.6	14 49.75	32 25.4
18	9	13.0	29.6	. .	. .	. .	. .	. .	19 1.88	16.08	III.	6	4.45	26 21.6	19.7	18 45.80	29 11.3
19	10	. .	. .	. .	34.7	. .	. .	. .	22 34.52	16.05	IV.	6	4.44	26 21.1	20.7	22 18.47	29 11.8
20	9	16.8	33.2	49.9	5.8	. .	. .	. .	25 5.66	16.02	V.	6	5.58	26 58.6	21.5	24 49.64	29 50.1
21	7	. .	37.0	53.6	9.3	. .	. .	. .	10 27 9.32	— 16.00	IV.	5	10.3	—25 0.1	— 22.2	10 26 53.32	— 39 27 52.3

Zone 6. April 13. K. $D_{\circ}=-39^{\circ}\ 2'\ 30''$.

1	10	. .	. .	9.3	25.2	41.6	. .	. .	11 10 25.17	— 15.54	V.	3	8.13	—14 2.5	— 33.7	11 10 9.63	— 39 27 6.2
2	9	8.4	24.5	40.6	56.7	. .	. .	. .	12 56.79	15.51	IV.	5	9.4	24 30.4	34.3	12 41.28	27 34.7
3	9	. .	23.7	39.9	56.3	12.1	. .	. .	16 56.10	15.46	VI.	8	8.28	38 17.2	35.3	16 40.64	41 22.5
4	9	. .	. .	. .	. .	28.3	44.6	. .	18 12.27	15.45	VI.	7	10.28	34 17.3	35.6	17 56.82	37 22.9
5	9	. .	. .	. .	. .	. .	35.1	51.3	11 19 2.85	— 15.44	VII.	7	7.32	—27 45.6	— 35.8	11 18 47.41	— 39 30 51.4

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
April 9, 6	— 24.01	+ 0.019	— 0.207	+ 0.195	+ 0.116
13, 6	— 23.44	+ 0.008	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 6	April 13,	29.814	49.0	

REMARKS.

(4) 10. Micrometer reading assumed as 6 $2^{r}.27$ instead of 6 $1^{r}.27$.
(6) 5. Micrometer reading assumed as 6 $7^{r}.32$ instead of 7 $7^{r}.32$.

ZONE 6. APRIL 13. K. $D_{\circ}=-39^{\circ}\ 2'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
6	11	. .	. .	47.2	3.4	19.6	. .	. .	11 22 3.33	— 15.41	V.	7	9.13	—33 39.5	— 36.5	11 21 47.92	— 39 36 46.0
7	8	. .	. .	23.3	39.3	55.1	. .	. .	24 39.04	15.37	IV.	4	6.21	18 6.6	37.0	24 23.67	21 13.6
8	6	. .	. .	. .	. .	. .	18.0	34.4	26 45.86	15.35	VII.	7	9.13	33 39.9	37.5	25 30.51	36 47.4
9	9	. .	59.3	15.5	32.0	. .	. .	. .	29 31.76	15.32	IV.	8	8.54	38 30.6	38.1	29 16.44	41 38.7
10	7	. .	7.8	24.2	40.6	56.4	. .	. .	31 40.22	15.29	VI.	5	10.33	25 15.3	38.6	31 24.93	28 23.9
11	11	. .	. .	27.6	. .	. .	. .	. .	34 43.79	15.25	VI.	8	14.24	41 17.8	39.2	34 28.54	44 27.0
12	10	. .	43.3	59.6	15.5	32.0	. .	. .	38 15.59	15.21	IV.	6	4.41	26 19.6	40.0	38 0.38	29 29.6
13	5	. .	. .	. .	. .	54.5	10.6	26.8	39 38.39	15.19	VII.	8	8.54	37 59.5	40.5	39 23.20	41 9.8
14	9	. .	. .	. .	. .	. .	. .	34.4	41 45.85	15.15	VII.	5	8.48	24 21.7	40.6	41 30.70	27 32.3
15	8	. .	. .	28.1	44.1	0.3	16.4	. .	43 44.06	15.13	IV.	5	7.4	23 29.6	41.1	42 28.93	26 40.7
16	8	. .	. .	8.3	. .	40.6	. .	. .	44 24.32	15.12	VI.	5	10.37	25 17.3	41.3	44 9.20	28 28.6
17	9	. .	42.8	. .	. .	. .	. .	3.8	49 15.25	15.06	II.	6	8.57	28 29.2	42.3	49 0.19	31 41.5
18	9	. .	26.8	43.3	59.8	. .	. .	. .	51 59.47	15.02	IV.	8	10.43	39 25.9	42.8	51 44.45	42 38.7
19	11	. .	. .	15.6	. .	48.4	. .	. .	55 32.05	14.97	V.	8	11.45	39 57.3	43.4	55 17.08	43 10.7
20	12	. .	. .	42.3	58.4	. .	. .	. .	57 58.27	14.94	IV.	7	4.57	31 29.6	43.9	57 43.33	34 43.5
21	11	. .	. .	22.2	38.2	55.0	. .	. .	11 59 38.29	14.91	IV.	5	2.46	21 18.6	44.2	11 59 23.38	24 32.8
22	11	. .	. .	59.0	15.2	31.4	. .	. .	12 3 15.18	14.87	V.	9	3.46	40 55.2	44.9	12 3 0.31	44 10.1
23	12	. .	. .	35.6	. .	. .	. .	. .	5 51.26	14.84	IV.	3	3.16	11 31.9	45.3	5 36.42	14 47.2
24	12	. .	. .	40.2	. .	. .	. .	. .	7 55.89	14.81	IV.	3	6.54	13 22.5	45.7	7 41.08	16 38.2
25	7	. .	. .	42.6	58.5	14.8	31.0	. .	10 58.49	14.77	VII.	2	4.27	7 6.4	46.2	10 43.72	10 22.6
26	7	. .	. .	. .	. .	31.6	. .	. .	11 15.45	14.76	VI.	5	8.51	24 23.5	46.2	11 0.69	27 39.7
27	12	. .	. .	. .	15.5	. .	. .	. .	14 15.32	14.72	VI.	2	7.1	8 24.9	46.7	14 0.60	11 41.6
28	11	. .	. .	44.5	0.8	16.9	. .	. .	16 0.63	14.70	V.	6	9.4	28 33.0	47.0	15 45.93	31 50.0
29	8	. .	. .	. .	. .	12.8	. .	45.4	17 56.71	14.67	VII.	4	11.45	20 50.4	47.3	17 42.04	24 7.7
30	11	. .	. .	. .	. .	. .	3.2	19.5	19 31.01	14.65	VII.	7	15.56	37 3.5	47.6	19 16.36	40 21.1
31	.	. .	12.8	29.1	. .	. .	. .	. .	22 45.07	14.60	.	.	. .	. . .	48.1	22 30.47	
32	9	. .	. .	. .	. .	59.6	. .	31.8	24 43.34	14.57	VII.	5	7.16	23 35.0	48.4	24 28.77	26 53.4
33	9	. .	29.2	45.7	. .	. .	. .	. .	30 1.53	14.50	II.	5	5.32	22 43.0	49.2	29 47.03	26 2.2
34	.	. .	. .	. .	. .	. .	54.8	11.0	32 22.50	14.46	.	.	. .	. . .	49.5	32 8.04	
35	9	. .	. .	. .	. .	. .	. .	3.9	33 15.06	14.45	V.	4	7.55	18 54.3	49.7	33 0.61	22 13.8
36	9	. .	. .	. .	25.3	. .	. .	. .	34? 25.12	14.43	VI.	1	7.8	3 27.9	49.8	34 10.69	6 47.6
37	5	. .	. .	. .	. .	46.8	2.8	19.3	36 30.64	14.40	V.	4	6.24	18 8.0	50.1	36 16.24	21 28.1
38	9	. .	. .	. .	. .	. .	. .	45.0	36 56.41	14.40	VII.	5	3.52	21 51.5	50.2	36 42.01	25 11.7
39	9	. .	. .	23.2	. .	. .	. .	. .	38 39.13	14.37	II.	6	5.54	26 56.4	50.4	38 24.76	30 16.8
40	8	. .	. .	. .	. .	. .	26.6	. .	39 54.39	14.35	V.	6	3.16	25 36.4	50.6	39 40.04	28 57.0
41	10	. .	. .	46.7	3.1	. .	. .	. .	45 2.87	14.27	V.	8	8.48	38 27.5	51.2	44 48.60	41 48.7
42	9	. .	. .	. .	32.7	48.2	4.6	. .	47 32.33	14.24	VI.	4	6.30	18 11.0	51.6	47 18.09	21 32.6
43	9	. .	5.8	22.5	38.6	54.6	. .	. .	12 48 38.34	— 14.22	VI.	5	7.14	—23 34.3	— 51.7	12 48 24.12	— 39 26 56.0

ZONE 7. APRIL 15. K. $D_{\circ}=-38^{\circ}\ 3'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	12	. .	. .	19.5	. .	51.5	. .	. .	11 4 35.36	— 16.00	V.	4	10.16	—20 6.1	— 19.5	11 4 19.36	— 38 24 5.6
2	6	. .	45.8	1.8	17.8	33.9	. .	. .	8 17.78	15.96	V.	8	2.58	35 29.2	20.4	8 1.82	39 29.6
3	7	. .	. .	. .	. .	. .	. .	47.8	10 0.05	15.94	VII.	6	5.29	26 43.2	20.9	9 44.11	30 44.1
4	6	. .	53.6	9.7	25.6	41.3	57.4	. .	15 25.38	15.88	VI.	3	5.54	12 52.5	22.1	15 9.50	16 54.6
5	11	. .	. .	. .	. .	34.8	. .	6.7	20 18.96	15.83	VI.	7	6.42	32 22.2	23.3	20 3.13	36 25.5
6	6	. .	9.8	25.8	42.2	. .	. .	. .	23 41.66	15.79	IV.	4	10.42	20 19.3	24.0	23 25.87	24 23.3
7	11	. .	. .	. .	55.7	. .	. .	. .	11 24 55.52	— 15.78	VI.	4	6.15	—18 3.7	— 24.3	11 24 39.74	— 38 22 8.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
April 15,	9	— 23.94	— 0.010	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

		Date.		Barom.	THERMOM.	
					At.	Ex.
		1846.	h. m.	in.	°	°
Zone	7	April 15,	11 4	30.042	54.0	45.5

REMARKS.

(6) 8. Minutes assumed as 25 instead of 26.
(6) 13. Minutes assumed as 39 instead of 40.
(6) 14. Minutes of transit one larger than Mural Z., April 13.
(6) 15. Minutes assumed as 42 instead of 43.

ZONE 7. APRIL 15. K. D_0 = −38° 3′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
8	11	. .	51.2	7.2	. .	. .	. .	. .	11 29 23.18	− 15.73	V.	8	9.28	−38 46.9	− 25.2	11 29 7.45	− 38 42 52.1
9	6	. .	. .	. .	25.7	41.7	. .	. .	30 25.64	15.72	VI.	6	7.8	27 33.8	25.4	30 9.92	31 39.2
10	8	. .	. .	. .	33.0	48.8	. .	. .	31 32.84	15.70	VI.	4	11.52	20 54.6	25.7	31 17.14	25 0.3
11	9	. .	. .	. .	. .	29.8	46.1	. .	32 14.18	15.69	VII.	6	10.2	29 1.6	25.9	31 58.49	33 7.5
12	8	. .	. .	. .	. .	. .	. .	53.2	33 5.26	15.68	VII.	3	9.49	14 51.3	26.0	32 49.58	18 57.3
13	8	. .	. .	. .	. .	2.5	. .	34.0	35 46.34	15.65	VII.	5	5.56	22 54.5	26.6	35 30.69	27 1.1
14	9	. .	. .	. .	. .	. .	36.1	52.2	36 4.37	15.65	VII.	7	6.53	32 27.5	26.6	35 48.72	36 34.1
15	10	. .	0.7	16.8	. .	. .	. .	. .	43 32.46	15.56	V.	5	3.23	21 37.5	28.2	43 16.90	25 45.7
16	11	. .	. .	. .	37.0	53.1	. .	. .	44 37.01	15.55	VI.	8	6.31	37 17.0	28.4	44 21.46	41 25.4
17	11	. .	. .	. .	. .	. .	0.3	. .	46 28.56	15.53	VI.	5	8.32	24 14.0	28.7	46 13.03	28 22.7
18	11	. .	. .	. .	. .	34.0	50.0	6.0	47 18.21	15.52	VII.	6	7.15	27 37.0	28.9	47 2.69	31 45.9
19	5	. .	. .	. .	34.2	50.0	. .	. .	48 34.09	15.51	V.	10	6.1	47 5.3	29.1	48 18.58	51 14.4
20	12	. .	. .	. .	7.5	23.2	. .	. .	50 7.30	15.49	VI.	4	7.16	18 34.6	29.4	49 51.81	22 44.0
21	9	. .	. .	. .	. .	. .	. .	44.5	51 56.95	15.47	VII.	9	9.25	43 45.5	29.8	51 41.48	47 54.3
22	9	. .	. .	. .	. .	. .	49.9	5.8	53 18.14	15.45	VII.	8	4.42	36 21.4	30.0	53 2.69	40 31.4
23	11	. .	. .	. .	. .	. .	. .	31.2	54 43.34	15.43	VII.	2	5.45	7 46.9	30.3	54 27.91	11 57.2
24	8	. .	. .	. .	. .	. .	39.7	56.1	55 8.20	15.43	VII.	2	5.10	7 29.2	30.4	54 52.77	11 39.6
25	6	. .	. .	. .	. .	. .	47.1	3.8	56 15.73	15.40	VII.	2	2.37	6 11.7	30.6	56 0.33	10 22.3
26	8	. .	17.8	. .	49.8	. .	. .	. .	11 58 49.59	15.39	IV.	4	7.53	18 53.7	31.1	11 58 34.20	23 4.8
27	8	. .	14.6	31.0	. .	. .	. .	. .	12 10 46.62	15.21	IV.	4	14.10	22 4.8	33.1	12 10 31.41	26 17.9
28	7	. .	. .	. .	. .	17.2	33.2	. .	11 1.35	15.21	VI.	7	13.56	36 1.6	33.2	10 46.14	40 14.8
29	7	. .	. .	. .	. .	. .	36.0	52.2	12 4.38	15.20	VII.	6	8.54	28 27.1	33.3	11 49.18	32 40.4
30	10	. .	. .	. .	. .	. .	. .	7.2	14 19.52	15.17	VII.	5	10.24	25 10.4	33.7	14 4.35	29 24.1
31	7	. .	. .	. .	. .	19.4	35.1	. .	15 3.47	15.16	VI.	3	14.35	17 16.6	33.8	14 48 31	21 30.4
32	6	. .	. .	. .	. .	0.2	29.1	45.1	16 57.38	15.13	VII.	5	8.17	24 6.0	34.1	16 42.25	28 20.1
33	10	. .	8.1	24.6	. .	. .	. .	. .	19 40.28	15.09	IV.	6	7.19	27 39.6	34.5	19 25.19	31 54.1
34	8	. .	. .	. .	20.8	36.5	. .	. .	20 20.63	15.08	VI.	7	13.53	36 0.7	34.6	20 5.55	40 15.3
35	8	. .	. .	. .	38.9	54.7	. .	. .	21 38.80	15.07	VI.	9	14.30	46 20.5	34.9	21 23.73	50 35.4
36	6	. .	17.6	33.7	49.8	. .	. .	. .	28 49.50	14.97	IV.	5	13.37	26 48.8	35.9	28 34.53	31 4.7
37	7	. .	19.7	35.7	51.8	. .	. .	. .	30 51.60	14.94	IV.	6	13.37	30 51.2	36.2	30 36.66	35 7.4
38	9	. .	. .	. .	. .	. .	. .	54.5	31 6.93	14.94	VII.	8	5.18	36 39.6	36.2	30 51.99	40 55.8
39	8	. .	. .	. .	. .	. .	48.8	4.6	33 16.99	14.91	VII.	7	10.2	34 3.3	36.5	33 2.08	38 19.8
40	10	. .	. .	. .	28.0	43.6	. .	. .	34 27.79	14.89	VI.	8	7.34	37 48.9	36.6	34 12.90	42 5.5
41	9	. .	. .	. .	. .	. .	28.2	44.4	35 56.60	14.87	VII.	8	5.13	36 37.1	36.9	35 41.73	40 54.0
42	10	. .	. .	12.1	28.0	43.8	. .	. .	39 27.98	14.83	VI.	8	2.35	35 17.3	37.5	39 13.15	39 34.8
43	12	. .	. .	. .	57.3	. .	. .	. .	43 57.13	14.76	IV.	5	3.9	21 30.5	37.9	43 42.37	25 48.4
44	7	. .	. .	. .	. .	2.7	. .	. .	45 46.82	14.74	IV.	6	3.10	25 33.4	38.1	45 32.08	29 51.5
45	6	. .	. .	. .	. .	. .	44.2	0.4	46 12.59	14.73	VII.	7	2.39	30 18.7	38.2	45 57.86	34 36.9
46	9	. .	. .	. .	. .	. .	13.5	29.7	47 41.90	14.71	VII.	8	6.39	37 20.7	38.3	47 27.19	41 39.0
47	7	. .	18.2	44.3	. .	. .	. .	. .	49 50.10	14.68	III.	5	6.14	23 5.4	38.6	49 35.42	27 24.0
48	7	. .	. .	. .	49.0	5.2	. .	. .	51 49.06	14.65	VII.	3	7.6	13 28.6	38.8	51 34.41	17 47.4
49	10	. .	. .	23.8	39.8	. .	. .	. .	52 39.65	14.64	V.	5	9.46	24 51.7	38.9	52 25.01	29 10.6
50	6	. .	. .	. .	41.4	57.3	. .	. .	53 41.36	14.63	VI.	9	10.25	44 16.3	39.0	53 26.73	48 35.3
51	10	. .	. .	. .	. .	. .	7.3	23.2	55 35.54	14.60	VII.	8	8.50	38 27.1	39.2	55 20.94	42 46.3
52	10	. .	. .	. .	. .	46.8	2.8	. .	12 58 30.96	− 14.56	VI.	7	14.42	−36 25.5	− 39.5	12 58 16.40	− 38 40 45.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(7) 25. Minutes of transit assumed as 56 instead of 57; *vide* Lacaille 4993 and Gilliss' Santiago Observations.

ZONE 8. APRIL 15. K. $D_0 = -37° 55' 40''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	10	..	..	..	34.5	49.6	..	..	14 1 34.06	— 13.64	VI.	9	14.00	—46 5.3	— 10.4	14 1 20.42	— 38 41 55.7
2	11	..	..	52.5	8.7	..	..	..	6 8.53	13.57	VI.	7	8.11	33 7.4	10.8	5 54.96	28 58.2
3	11	..	..	..	..	29.2	..	0.8	8 13.31	13.54	VII.	8	10.16	39 10.8	11.0	7 59.77	35 1.8
4	10	..	..	..	..	..	..	2.8	9 15.02	13.52	VII.	3	10.36	15 15.1	11.1	9 1.50	11 6.2
5	9	..	..	35.9	51.3	7.7	..	..	13 51.42	13.44	V.	1	6.55	3 22.4	11.4	13 37.98	59 13.8
6	10	..	..	..	23.2	39.2	..	..	15 23.14	13.43	VII.	2	0.00	4 52.6	11.6	15 9.71	0 44.2
7	9	..	..	42.5	58.3	14.1	..	..	18 58.10	13.38	VI.	3	8.40	14 16.7	11.8	17 44.72	10 8.5
8	5.6	..	35.9	52.0	7.8	..	..	..	22 7.66	13.33	IV.	3	12.4	16 0.3	12.0	21 54.33	11 52.3
9	11	..	..	6.3	23.2	..	..	..	22.78	(13.29)	VI.	7	14.50	36 29.6	(12.2)	9.49	32 21.8
10	6	..	..	12.3	28.0	43.8	..	..	29 27.80	13.22	VI.	3	4.50	12 20.1	12.5	29 14.67	8 12.6
11	10	..	..	42.0	..	13.6	..	..	36 57.65	13.11	VI.	2	11.51	10 52.8	12.9	35 44.54	6 45.7
12	10	..	..	54.7	10.6	26.6	..	..	39 10.60	13.08	VI.	6	7.51	27 55.5	13.0	38 57.52	23 48.5
13	10	..	56.9	13.2	29.0	..	..	..	43 28.83	13.02	V.	4	7.8	18 30.5	13.2	43 15.81	14 23.7
14	9	..	..	..	19.9	36.1	..	..	45 20.00	12.99	VI.	10	3.6	45 36.3	13.2	45 7.01	41 29.5
15	9	..	..	0.6	16.2	32.1	..	..	49 16.24	12.93	V.	5	7.56	23 55.9	13.4	49 3.31	19 49.3
16	11	..	..	47.6	..	19.9	..	..	14 59 3.87	12.79	VI.	8	3.42	35 51.3	13.7	14 58 57.08	31 45.0
17	6	..	..	28.2	43.8	0.0	..	..	15 0 43.83	12.77	VI.	4	4.5	16 57.8	13.7	15 0 31.06	12 51.5
18	10	..	..	..	..	39.9	55.2	..	1 23.77	12.76	VII.	3	8.7	13 59.6	13.7	1 11.01	9 53.3
19	11	..	..	58.9	14.8	30.0	..	..	8 14.40	12.66	VII.	4	6.40	18 16.1	13.8	8 1.74	14 9.9
20	11	..	..	12.2	28.4	..	0.1	..	12 28.27	12.60	VII.	9	11.38	44 53.0	13.9	12 15.67	40 46.9
21	5	..	18.3	34.2	50.0	6.2	..	..	15 49.82	12.55	VI.	3	11.55	15 55.0	13.9	15 37.27	11 48.9
22	6	..	..	31.8	47.9	3.9	..	..	19 47.65	12.49	V.	3	1.20	10 33.8	13.9	19 35.16	6 27.7
23	9	..	..	..	..	51.3	..	23.3	20 35.29	12.48	VII.	2	5.55	7 52.0	14.0	20 22.81	3 46.0
24	7	..	..	..	..	..	3.1	19.5	22 31.52	12.46	VII.	2	10.44	10 18.5	13.9	22 19.06	6 12.4
25	10	..	37.2	..	9.4	..	..	..	25 9.24	12.42	V.	8	13.13	40 41.0	13.9	24 56.82	36 34.9
26	9	..	..	..	57.1	..	..	..	27 56.93	12.38	V.	8	10.45	39 26.0	13.9	27 44.55	35 19.9
27	6	..	..	..	..	10.3	..	..	28 54.42	12.36	VI.	9	9.34	43 50.3	13.9	28 42.06	39 44.2
28	6	..	..	..	..	..	..	51.4	15 29 3.72	— 12.36	VII.	9	5.57	—42 0.0	— 13.9	15 28 51.36	— 38 37 53.9

ZONE 9. APRIL 16. A. $D_0 = -36° 39' 10''$.

1	9	53.0	8.9	24.6	40.4	55.6	11.5	27.5	9 39 40.25	— 16.45	V.	6	7.58	—27 59.2	— 10.5	9 39 23.78	— 37 7 19.7
2	11	..	..	59.0	15.1	30.5	46.2	1.7	9 45 14.87	16.42	VI.	9	4.15	41 8.0	11.6	9 44 58.45	20 29.6
3	8	..	..	28.0	44.3	59.8	15.1	30.8	10 22 43.96	16.18	IV.	8	8.6	38 4.8	18.8	10 22 27.78	17 33.6
4	8	..	35.0	50.8	6.9	22.2	38.0	53.3	27 6.60	16.14	III.	9	5.37	41 49.7	19.6	26 50.46	21 19.3
5	9	..	..	..	..	23.0	38.1	53.5	38 6.95	16.06	VI.	9	5.41	41 51.5	21.5	37 50.89	21 23.0
6	9	1.0	17.0	33.0	48.5	4.0	19.2	35.0	50 48.23	15.94	II.	5	6.0	22 57.0	23.3	50 32.29	2 30.3
7	8.9	29.0	45.0	1.1	16.5	32.2	47.6	3.4	10 55 16.39	15.90	II.	5	4.15	22 3.8	23.9	10 55 0.49	1 37.7
8	12	..	..	..	19.0	35.0	50.6	6.0	11 9 19.13	15.76	IV.	4	11.45	20 51.4	25.9	11 9 3.37	37 0 27.3
9	7	..	..	18.2	33.2	49.2	4.7	20.3	18 33.37	15.66	III.	3	11.29	15 42.9	27.0	18 17.71	36 55 19.9
10	8	..	..	..	..	..	21.0	36.8	32 49.81	15.53	VI.	8	6.	37 0.7	28.5	32 34.28	37 16 39.2
11	9	..	..	..	16.3	32.0	47.2	3.5	38 16.20	15.46	V.	2	5.32	7 41.7	29.1	38 0.74	36 47 20.8
12	9	..	..	42.8	58.2	13.5	29.0	44.9	44 57.92	15.39	III.	3	10.34	15 15.0	29.7	44 42.53	54 54.7
13	6	..	..	..	..	..	41.2	57.2	11 47 10.07	— 15.36	VI.	3	9.42	—15 18.7	— 29.9	11 46 54.71	— 36 54 58.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
April 15,	9	— 23.94	— 0.010	— 0.280	+ 0.344	+ 0.120
16,	9	— 23.83	— 0.012	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(9) 13. Micrometer reading assumed as $10^{r}.42$ instead of $9^{r}.42$.

Zone 10. April 16. A. $D_{\circ}=-36^{\circ}\ 40'\ 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	4	5.2	21.2	37.0	52.8	8.3	23.8	39.3	14 32 52.53	— 13.16	II.	6	6.51	−28 25.6	— 17.6	14 32 39.37	— 37 8 43.2
2	5	53.0	8.8	24.6	40.2	56.0	11.6	27.1	43 40.22	13.00	II.	7	2.25	30 42.8	16.3	43 27.22	10 58.4
3	7	. .	. .	. .	59.5	15.0	30.9	46.4	49 59.46	12.91	IV.	8	4.47	36 24.0	15.4	49 46.55	16 39.4
4	9	. .	11.4	26.5	. .	57.5	13.0	29.0	55 42.03	12.83	III.	4	9.4	24 29.0	14.6	55 29.20	4 43.6
5	9	. .	. .	8.0	23.0	39.3	54.5	10.5	14 59 23.33	12.78	III.	4	10.22	20 9.3	14.1	14 59 10.55	37 0 23.4
6	9	. .	. .	10.8	26.0	41.5	57.2	13.5	15 3 26.05	12.73	III.	4	3.52	16 51.8	13.5	15 3 13.32	36 57 5.3
7	7	59.2	15.0	31.5	47.0	2.5	18.1	33.8	12 46.73	12.60	I.	5	10.38	25 17.5	12.0	12 34.13	37 5 29.5
8	9	. .	. .	. .	. .	10.0	25.5	42.0	18 54.55	12.51	VII.	5	12.	25 59.0	10.9	18 42.04	37 6 9.9
9	8	. .	. .	50.5	6.0	22.2	37.6	53.1	15 33 6.13	— 12.32	IV.	3	12.	−15 58.7	— 8.4	15 32 53.81	— 36 56 7.1

Zone 11. April 17. K. $D_{\circ}=-35^{\circ}\ 22'\ 10''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	. .	48.3	3.7	10 47 17.51	— 16.54	VII.	4	3.53	−16 54.4	— 34.2	10 47 0.97	— 35 39 38.6
2	11	. .	. .	11.0	26.5	. .	. .	. .	52 26.29	16.50	V.	4	8.38	19 17.0	34.9	52 9.79	42 1.9
3	8	. .	59.3	14.7	. .	. .	. .	. .	10 57 30.14	16.45	III.	7	6.7	32 4.0	35.5	10 57 13.69	54 49.5
4	10	. .	31.4	47.0	. .	. .	. .	. .	11 9 1.96	16.35	IV.	2	4.5	6 58.6	36.8	11 8 45.61	29 45.4
5	8	. .	. .	. .	48.7	4.0	. .	. .	10 48.54	16.33	IV.	4	10.30	20 13.7	37.0	10 32.21	43 0.7
6	9	. .	47.7	3.4	18.3	. .	. .	. .	15 18.35	16.29	IV.	4	4.8	17 0.4	37.4	15 2.06	35 39 47.8
7	10	. .	0.8	16.4	. .	. .	. .	. .	19 31.86	16.24	IV.	9	3.23	40 41.0	37.9	19 15.62	36 3 28.9
8	10	. .	. .	. .	18.5	33.7	. .	. .	25 18.27	16.19	VI.	2	3.59	6 55.3	38.3	25 2.08	35 29 43.6
9	10	. .	50.3	6.1	21.4	. .	. .	. .	30 21.29	16.14	IV.	7	4.11	31 5.3	38.8	30 5.15	53 54.1
10	11	. .	. .	. .	. .	. .	14.3	30.2	30 43.77	16.13	VII.	5	2.31	21 11.0	38.8	30 27.64	43 59.8
11	10	. .	18.4	54.1	. .	. .	. .	. .	36 48.96	16.07	IV.	1	10.25	5 10.8	39.2	36 32.89	28 0.0
12	9	. .	. .	. .	. .	55.7	. .	. .	37 40.23	16.06	V.	2	13.40	11 49.5	39.3	37 24.17	34 38.8
13	9	. .	. .	. .	. .	. .	. .	52.1	38 5.64	16.05	VII.	2	12.41	11 19.2	39.4	37 49.59	35 34 8.6
14	9	. .	. .	39.1	54.9	. .	. .	. .	43 54.69	15.99	V.	9	8.27	43 14.8	39.7	43 38.70	36 6 4.5
15	8	. .	27.3	43.1	58.4	. .	. .	. .	45 58.20	15.96	IV.	4	13.43	21 51.4	39.9	45 42.24	35 44 41.3
16	8	. .	. .	39.3	54.4	9.7	. .	. .	54.22	. .	V.	1	8.18	4 6.5	. .	. . .	. . .
17	10	. .	. .	5.7	21.3	. .	. .	. .	11 55 21.22	15.86	VII.	10	4.58	46 30.6	40.4	11 55 5.36	36 9 21.0
18	10	. .	. .	29.5	. .	. .	1.5	. .	12 1 44.57	15.80	VI.	6	9.17	28 38.8	40.7	12 1 28.77	35 51 29.5
19	8	48.2	. .	. .	. .	. .	50.2	. .	5 34.53	15.75	VI.	1	13.29	6 43.7	40.9	5 18.78	29 34.6
20	9	. .	5.0	. .	. .	. .	. .	21.5	5 35.44	15.75	VII.	4	10.58	20 27.3	40.9	5 19.69	43 18.2
21	9.10	. .	. .	58.0	13.2	. .	. .	. .	10 12.96	15.70	IV.	1	14.24	7 11.8	41.1	9 57.26	30 2.9
22	10	. .	. .	. .	. .	56.2	11.5	27.0	12 40.78	15.67	VII.	5	10.11	25 3.9	41.1	12 25.11	47 55.0
23	12	. .	. .	29.9	45.3	0.7	. .	. .	17 45.19	15.61	V.	5	12.16	26 2.6	41.3	17 29.58	48 53.9
24	10	. .	45.8	1.3	16.8	32.1	. .	. .	20 16.65	15.58	V.	6	11.18	29 40.3	41.3	20 1.07	52 31.6
25	11	. .	. .	38.5	53.6	8.8	. .	. .	25 53.42	15.51	V.	2	10.29	10 12.9	41.4	25 37.91	33 4.3
26	11	. .	. .	. .	5.9	21.1	36.2	. .	27 5.66	15.50	VII.	4	6.36	18 14.8	41.4	26 50.16	41 6.2
27	9	. .	23.0	38.6	54.2	. .	24.7	. .	29 53.95	15.46	VI.	7	4.51	31 25.3	41.5	29 38.49	54 16.8
28	12	. .	. .	0.8	16.0	. .	. .	. .	35 15.80	15.40	V.	3	11.00	15 28.8	41.5	35 0.40	38 20.3
29	7.8	. .	. .	. .	8.0	23.2	38.3	54.4	36 7.80	15.39	VII.	2	7.30	8 41.8	41.5	35 52.41	31 33.3
30	12	. .	23.7	39.3	54.6	. .	. .	. .	40 54.47	15.33	V.	5	5.45	22 49.7	41.5	40 39.14	45 41.2
31	9	. .	10.4	26.2	41.1	56.5	. .	. .	50 41.00	15.20	V.	1	9.57	4 56.6	41.4	50 25.80	27 48.0
32	12	. .	. .	40.8	56.1	11.5	. .	. .	52 56.00	15.17	VI.	4	15.06	22 33.1	41.3	52 40.83	45 24.4
33	11	. .	. .	40.7	55.7	. .	. .	. .	12 58 55.56	15.09	V.	1	9.29	4 42.4	41.1	12 58 40.47	27 33.5
34	10	. .	. .	26.8	42.3	. .	. .	. .	13 1 42.06	15.06	V.	4	12.0	20 59.2	41.1	13 1 27.00	43 50.3
35	8	. .	29.0	44.6	0.0	15.1	. .	. .	13 5 59.68	— 15.00	VI.	3	3.23	−11 37.3	— 40.9	13 5 44.68	— 35 34 28.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
April 17,	9	— 24.50	— 0.012	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 10	April 16,		30.337	54.	46.
Zone 11	17,		29.950	63.0	62.5

REMARKS.

(10) 1. Micrometer reading assumed as $8^{r}.51$ instead of $6^{r}.51$.
(10) 2. Micrometer reading assumed as $3^{r}.25$ instead of $2^{r}.25$.
(10) 4. Micrometer assumed as 5 instead of 4.

ZONE 11. APRIL 17. K. D$_\circ$=−35° 22′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
36	4.5	. .	. .	10.2	26.0	41.3	56.4	. .	13 12 25.75	− 14.92	VI.	7	6.35	−32 18.0	− 40.6	13 12 10.83	− 35 55 8.6
37	12	. .	. .	. .	. .	. .	55.0	. .	13 24.37	14.91	VII.	5	5.43	22 48.2	40.6	13 9.46	35 45 38.8
38	10	. .	. .	. .	. .	. .	58.7	. .	24 27.94	14.76	VII.	9	6.13	42 6.5	40.0	24 13.18	36 4 56.5
39	10	. .	36.6	52.2	7.9	. .	. .	. .	28 7.49	14.72	VII.	5	10.56	25 26.6	39.8	27 52.77	35 48 16.4
40	10	. .	. .	46.1	. .	16.4	. .	. .	31 0.96	14.68	VI.	1	11.36	5 46.5	39.6	30 46.28	28 36.1
41	12	. .	. .	. .	47.2	. .	. .	. .	35 47.03	14.61	VI.	5	10.32	25 15.4	39.2	35 32.42	48 4.6
42	7	. .	. .	56.7	. .	27.6	. .	. .	37 11.88	14.59	V.	1	14.13	7 6.1	39.1	36 57.29	29 55.2
43	11	. .	. .	. .	. .	. .	44.0	59.2	39 13.18	14.56	VII.	6	8.52	28 25.9	39.0	38 58.62	51 14.9
44	10	. .	. .	. .	10.9	. .	41.5	. .	13 41 10.78	− 14.54	VII.	6	9.17	−28 38.5	− 38.8	13 40 56.24	− 35 51 27.3

ZONE 12. APRIL 17. K. D$_\circ$=−35° 21′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	20.2	35.8	. .	. .	14 36 20.17	− 13.84	VI.	2	5.41	− 7 46.9	− 48.7	14 36 6.33	− 35 30 25.6
2	7	47.4	3.3	18.8	34.4	49.5	. .	. .	38 34.19	13.80	VI.	8	6.50	37 25.4	48.4	38 20.39	36 0 3.8
3	9	. .	. .	33.2	. .	. .	. .	34.7	44 48.43	13.72	III.	6	4.20	26 8.7	47.2	44 34.71	35 48 45.9
4	10	. .	. .	. .	7.6	. .	38.1	. .	49 7.50	13.65	VI.	1	9.35	4 45.3	46.7	48 53.85	27 22.0
5	8	. .	. .	. .	53.0	. .	23.1	. .	49 52.71	13.64	VI.	1	6.1	2 56.9	46.6	49 39.07	25 33.5
6	11	. .	45.3	0.9	16.2	. .	. .	. .	54 16.04	13.59	VI.	4	7.57	18 56.0	45.9	54 2.45	41 31.9
7	7	. .	32.2	48.0	3.3	18.4	. .	. .	56 3.04	13.56	V.	4	6.6	18 0.1	45.6	55 49.48	40 35.7
8	11	. .	16.0	31.7	47.2	. .	. .	. .	14 59 46.96	13.51	VI.	6	9.1	28 30.7	44.9	14 59 33.45	51 5.6
9	7	8.2	23.7	39.3	54.2	. .	. .	. .	15 3 54.26	13.46	V.	2	7.27	8 40.8	44.2	15 3 40.80	31 15.0
10	4.5	44.9	0.7	16.0	31.5	46.7	2.0	. .	10 31.32	13.37	VI.	4	10.23	20 9.9	43.0	12 17.95	42 42.9
11	11	. .	40.4	56.0	11.2	. .	. .	. .	15 11.08	13.31	VI.	3	14.49	17 24.4	42.1	14 57.77	35 39 56.5
12	8	. .	. .	. .	. .	. .	. .	42.0	16 55.87	13.29	VII.	8	14.24	41 15.9	41.7	16 42.58	36 3 47.6
13	9	. .	3.9	19.5	34.8	50.1	. .	. .	47 34.54	12.89	VI.	2	3.20	6 35.6	35.3	47 21.65	35 39 0.9
14	8	. .	. .	. .	. .	. .	. .	35.9	47 49.57	12.89	VII.	5	4.23	22 7.7	35.3	47 36.68	44 33.0
15	11	. .	42.2	57.7	13.0	. .	. .	. .	52 12.91	12.83	VI.	5	6.11	23 2.8	34.3	52 0.08	45 27.1
16	11	. .	25.7	41.2	56.3	. .	. .	. .	55 56.34	12.79	V.	5	5.24	22 39.1	33.4	55 43.55	45 2.5
17	8	42.4	58.1	13.8	29.0	. .	. .	. .	15 57 28.93	12.77	IV.	6	5.48	26 53.3	33.0	15 57 16.16	49 16.3
18	12	. .	52.2	8.0	23.2	. .	. .	. .	16 14 23.05	12.56	VI.	4	10.5	20 0.8	28.9	16 14 10.49	42 19.7
19	12	. .	. .	9.6	. .	. .	. .	. .	25 24.70	12.43	V.	3	12.56	16 27.4	26.2	25 12.27	38 43.6
20	8	. .	. .	43.3	58.5	13.8	. .	. .	25 58.35	12.43	VI.	3	7.57	13 56.0	26.0	25 45.92	35 36 12.0
21	8	. .	. .	40.4	56.4	10.2	. .	. .	39 56.10	12.28	VII.	9	13.51	45 58.3	22.4	39 43.82	36 8 10.7
22	10	. .	. .	. .	50.3	5.9	21.2	. .	43 50.39	12.24	VII.	8	4.11	36 4.6	21.3	43 38.15	35 58 15.9
23	7	. .	18.2	33.8	49.2	4.5	. .	. .	49 49.00	12.17	V.	4	9.31	19 43.8	19.7	49 36.83	41 53.5
24	8	4.5	20.2	35.7	51.2	. .	. .	. .	56 51.00	12.10	V.	5	11.38	25 48.4	17.6	56 38.90	47 56.0
25	9	. .	. .	. .	20.7	. .	. .	. .	16 58 20.53	12.09	V.	1	8.39	4 17.4	17.3	16 58 8.44	26 24.7
26	6.7	. .	. .	18.1	33.4	48.6	3.7	. .	17 5 33.16	12.02	VI.	2	12.54	11 26.1	15.1	17 5 21.14	33 31.2
27	10	. .	. .	31.1	46.7	2.0	. .	. .	8 46.54	11.98	VI.	7	7.56	32 59.0	14.3	8 34.56	55 3.3
28	7.8	. .	14.6	30.3	45.5	0.1	. .	. .	11 45.23	11.96	VI.	5	7.6	23 30.5	13.4	11 33.27	45 33.9
29	10	. .	. .	35.9	51.2	. .	. .	. .	15 51.00	11.92	V.	3	9.22	14 39.2	12.2	15 39.08	36 41.4
30	10	. .	52.9	8.2	. .	39.0	. .	. .	19 23.54	11.89	V.	5	3.44	21 48.5	11.2	19 11.65	43 49.7
31	10	. .	. .	. .	. .	. .	44.3	0.0	20 13.67	11.88	VII.	5	9.3	24 29.4	10.5	20 1.79	46 29.9
32	9	. .	51.5	7.0	22.3	. .	. .	. .	23 22.13	11.85	V.	3	10.33	15 15.1	10.0	23 10.28	37 15.1
33	11	. .	. .	15.2	30.7	46.0	. .	. .	27 30.45	11.81	V.	3	11.2	15 29.8	8.8	27 18.64	37 28.8
34	9	. .	13.7	29.2	44.5	. .	. .	. .	30 44.29	11.78	V.	2	12.47	11 22.7	7.9	30 32.51	33 20.6
35	9	. .	. .	9.9	25.1	40.3	. .	. .	32 24.96	11.77	VI.	4	12.18	21 8.1	7.4	32 13.19	43 5.5
36	8	. .	39.5	55.4	10.3	25.8	. .	. .	17 34 10.20	− 11.75	V.	1	10.57	− 5 26.9	− 6.8	17 33 58.45	− 35 27 23.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°
Zone 12	April 17,	29.960	61.0	56.5

REMARKS.

(12) 10. Minutes assumed as 12 instead of 10.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
ZONE 12. APRIL 17. K. $D_0 = -35° 21' 50''$—Continued.																	
									h. m. s.	s.			r.	' "	"	h. m. s.	° ' "
37	8.9	. .	50.3	5.9	21.4	36.5	. .	. .	17 37 21.16	— 11.73	VI.	6	7.59	—27 59.4	— 5.9	17 37 9.43	— 35 49 55.3
38	10	. .	. .	. .	51.2	6.9	22.1	. .	39 51.34	11.70	VII.	2	3.46	6 48.4	5.1	39 39.64	28 43.5
39	7	. .	33.7	49.6	4.7	20.1	. .	. .	42 4.54	11.68	VI.	3	5.34	12 43.6	4.6	41 52.86	34 38.2
40	10	. .	. .	. .	. .	33.2	48.0	4.1	17 43 17.66	— 11.67	VII.	6	9.23	—28 41.5	— 4.1	17 43 5.99	— 35 50 35.6
ZONE 13. APRIL 18. A. $D_0 = -34° 8' 0'$.																	
1	8	. .	. .	39.5	54.5	9.5	25.0	40.0	9 17 54.51	— 16.03	VII.	6	8.34	—28 16.7	— 5.4	9 17 38.48	— 34 36 22.1
2	10	25.5	40.4	56.0	11.2	26.2	41.2	56.6	34 11.00	15.96	II.	5	3.55	21 54.0	10.6	33 55.04	30 4.6
3	12	49.0	4.5	19.5	34.8	50.0	. .	20.0	45 34.67	15.91	II.	5	8.40	24 18.1	14.2	45 18.76	32 32.3
4	9	. .	31.6	47.0	2.0	17.1	32.0	47.5	50 1.84	15.89	II.	3	8.9	14 2.4	15.6	49 45.95	22 18.0
5	9	15.0	30.0	45.5	1.0	15.9	31.0	46.0	54 0.65	15.87	I.	6	6.57	27 26.7	16.8	53 44.78	35 43.5
6	9	53.5	9.0	24.3	39.5	54.6	9.4	24.9	9 58 39.26	15.85	I.	4	3.29	16 40.3	18.3	9 58 23.41	24 58.6
7	10	. .	. .	. .	. .	. .	46.8	2.0	10 0 16.51	15.84	VI.	4	7.32	18 43.6	18.8	10 0 0.67	27 2.4
8	7	48.2	3.8	19.0	34.1	49.1	4.4	19.5	5 34.03	15.81	I.	6	5.39	26 48.2	20.4	5 18.22	35 8.6
9	9	. .	34.2	50.0	4.6	20.0	34.9	50.3	8 4.69	15.79	II.	5	3.35	21 43.9	21.1	7 48.90	30 5.0
10	8	. .	. .	59.5	14.4	29.5	45.5	. .	24 14.30	15.69	.	3	5.10	12 32.0	25.8	23 58.61	20 57.8
11	8	27.0	42.5	57.5	12.6	28.5	43.0	58.2	38 12.77	15.58	II.	6	2.8	25 1.7	29.6	37 57.19	33 31.3
12	7	33.0	48.0	3.2	18.9	33.8	48.8	4.0	46 18.61	15.51	II.	7	8.11	33 6.3	31.7	46 3.10	41 38.0
13	8	. .	5.0	20.2	35.5	51.0	6.0	21.0	48 35.56	15.49	II.	7	8.34	33 18.0	32.3	48 20.07	41 50.3
14	8	. .	. .	. .	26.6	42.5	56.5	11.0	10 51 26.60	15.47	IV.	9	9.4	43 33.0	33.0	10 51 11.13	52 6.0
15	9	7.0	23.0	38.5	53.2	8.9	23.6	39.0	11 0 53.37	15.40	II.	7	4.24	31 11.5	35.4	11 0 37.97	39 46.9
16	11	39.0	54.2	. .	25.2	40.0	55.0	10.2	3 24.78	15.37	I.	6	4.52	26 24.4	36.0	3 9.41	35 0.4
17	9	. .	. .	26.2	41.4	56.8	12.0	27.0	5 41.46	15.36	III.	6	5.24	26 41.0	36.5	5 26.10	35 17.5
18	7	24.1	39.2	54.8	10.0	25.0	40.1	55.5	14 9.89	15.28	I.	7	9.11	33 36.4	38.5	13 54.61	42 14.9
19	9	6.0	22.0	37.5	52.5	7.5	22.9	37.8	20 52.41	15.22	II.	7	11.34	34 49.0	40.0	20 37.19	43 29.0
20	8	20.2	36.0	51.0	6.1	21.0	36.2	51.4	28 6.10	15.16	III.	8	8.35	38 18.3	41.5	27 50.94	46 59.8
21	7	. .	. .	. .	11.0	26.2	41.2	56.2	11 34 10.92	— 15.10	IV.	8	7.17	—37 38.9	— 42.8	11 33 55.82	— 34 46 21.7
ZONE 14. APRIL 20. K. $D_0 = -32° 51' 20''$.																	
1	8	. .	25.8	40.7	55.6	. .	. .	. .	10 54 55.35	— 15.96	IV.	3	8.25	—14 10.9	— 46.9	10 54 39.39	— 33 6 17.8
2	10	. .	. .	. .	. .	. .	48.7	. .	57 19.00	15.94	VI.	3	11.46	15 52.4	47.6	57 3.06	8 0.0
3	10	. .	. .	. .	. .	. .	. .	40.8	10 57 55.92	15.93	.	.	. .	. . . .	. .	57 39.99	
4	10	. .	. .	. .	. .	16.1	. .	45.8	11 0 1.10	15.92	VII.	7	10.37	34 19.7	48.4	10 58 45.18	26 28.1
5	9	. .	. .	. .	. .	. .	. .	22.2	0 37.34	15.92	VII.	6	8.11	28 5.0	48.6	11 0 21.42	20 13.6
6	9	. .	. .	. .	. .	. .	. .	8.9	1 24.16	15.91	VII.	8	7.32	37 45.7	48.8	1 8.25	29 54.5
7	9	. .	24.7	. .	. .	. .	24.8	39.6	5 54.91	15.87	VII.	9	8.37	43 18.5	50.1	5 39.04	35 28.6
8	10	. .	. .	. .	39.4	. .	. .	. .	7 39.24	15.86	IV.	7	8.19	33 10.4	50.6	7 23.38	25 21.0
9	10	. .	. .	57.1	12.1	. .	. .	. .	9 11.98	15.85	IV.	7	8.14	33 7.9	51.0	8 56.13	25 18.9
10	9	. .	. .	. .	7.2	21.9	36.9	. .	10 7.04	15.84	VII.	9	2.45	40 20.4	51.2	9 51.20	32 31.6
11	8	. .	. .	. .	38.4	53.2	. .	. .	11 38.19	15.82	V.	1	7.55	3 55.9	51.6	11 22.37	56 7.5
12	11	. .	. .	36.1	51.3	. .	. .	. .	14 51.09	15.80	V.	7	9.41	33 51.8	52.5	14 35.29	26 4.3
13	11	. .	. .	. .	50.3	. .	. .	. .	15 50.14	15.79	IV.	7	7.34	32 47.8	52.8	15 34.35	25 0.6
14	8	. .	58.9	14.0	29.2	. .	. .	. .	17 28.98	15.78	I.	8	3.11	35 33.7	53.2	17 13.20	27 46.9
15	8	. .	57.2	. .	. .	. .	. .	. .	19 27.13	15.76	IV.	6	5.34	26 46.1	53.8	19 11.37	18 59.9
16	8	. .	. .	. .	. .	. .	53.6	8.6	11 19 23.78	— 15.76	VII.	6	9.27	—28 43.4	— 53.7	11 19 8.02	— 33 20 57.1

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
April 18, 9	— 23.60	+ 0.023	— 0.280	+ 0.344	+ 0.120
20, 10	— 24.25	— 0.019	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 13	April 18,	30.057	67.	64.5
Zone 14	20,	30.088	64.0	63.5

REMARKS.

(12) 37. Differs 1^{m} from observation July 14.
(14) 3. Minutes assumed as 57.
(14) 4. Hours and minutes assumed as 10^{h} 59^{m} instead of 11^{h} 0^{m}.
(14) 7. Minutes of transit 1 larger than Mural Z., April 20.

ZONE 14. APRIL 20. K. $D_0 = -32° 51' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
17	12	. .	58.4	13.6	. .	. .	. .	. .	11 22 28.20	— 15.74	V.	3	8.39	—14 18.0	— 54.6	11 22 12.46	— 33 6 32.6
18	8	. .	. .	. .	2.3	17.2	. .	47.7	23 2.37	15.73	VII.	4	11.52	20 55.0	54.7	22 46.64	13 9.7
19	9	. .	. .	46.4	. .	. .	. .	. .	27 0.99	15.70	III.	2	12.41	11 20.4	55.7	26 45.29	3 36.1
20	9	. .	. .	. .	. .	32.9	. .	2.8	27 17.98	15.70	VII.	6	14.4	31 3.5	55.8	27 2.28	23 19.3
21	8	. .	. .	. .	. .	35.0	. .	4.9	32 20.53	15.65	VII.	7	5.0	31 29.2	57.1	32 4.88	23 46.3
22	9	. .	. .	. .	48.3	3.2	. .	. .	33 48.17	15.63	VI.	3	7.3	13 29.2	57.5	33 32.54	5 46.7
23	8	. .	. .	1.3	16.0	30.8	. .	. .	36 15.83	15.62	VI.	3	1.2	10 26.7	58.1	36 0.21	2 44.8
24	8	. .	43.8	58.8	13.8	. .	. .	. .	40 13.52	15.58	IV.	3	3.27	11 40.2	59.0	39 57.94	3 59.2
25	11	. .	. .	. .	. .	. .	10.6	25.7	40 40.82	15.57	VII.	5	5.26	22 39.8	59.2	40 25.25	14 59.0
26	12	. .	. .	. .	. .	55.1	9.9	. .	43 40.16	15.55	VII.	7	11.39	34 51.1	59.9	43 24.61	27 11.0
27	5	. .	. .	21.2	36.0	50.7	5.6	. .	45 35.82	15.53	V.	2	14.17	12 8.9	60.3	45 20.29	4 29.2
28	11	. .	7.1	22.2	. .	. .	. .	. .	48 37.09	15.50	V.	7	5.53	31 56.5	61.1	48 21.59	23 17.6
29	12	1.8	. .	. .	. .	. .	. .	. .	52 46.72	15.47	IV.	2	8.32	9 14.6	62.0	52 31.25	1 36.6
30	7	15.9	31.0	46.1	1.0	. .	. .	. .	54 0.87	15.45	IV.	4	11.16	20 37.2	62.3	53 45.42	12 59.5
31	11	. .	. .	. .	. .	. .	. .	56.3	54 11.41	15.45	VII.	5	12.12	26 5.1	62.3	53 55.96	18 27.4
32	7	15.7	30.7	45.5	. .	. .	. .	. .	58 0.65	15.42	V.	6	12.15	30 8.8	63.2	57 45.23	22 32.0
33	11	. .	. .	16.9	. .	. .	. .	. .	11 59 31.87	15.40	V.	7	12.4	35 4.1	63.5	11 59 16.47	27 27.6
34	12	. .	. .	38.3	. .	. .	. .	. .	12 1 53.13	15.38	IV.	6	5.4	26 30.9	64.0	12 1 37.75	18 54.9
35	9.10	. .	. .	. .	53.1	7.8	. .	. .	4 52.92	15.35	VI.	7	11.1	34 32.1	64.7	4 37.57	26 56.8
36	5	. .	. .	. .	. .	57.1	11.9	. .	5 42.15	15.34	VII.	5	10.27	25 12.0	64.9	5 26.81	17 36.9
37	8	. .	. .	. .	. .	. .	16.6	32.1	6 46.95	15.33	VII.	1	8.52	4 24.3	65.1	6 31.62	56 49.4
38	10	. .	. .	. .	45.6	0.2	. .	. .	8 45.36	15.32	VII.	7	9.17	33 39.2	65.5	8 30.04	26 4.7
39	9	. .	. .	. .	54.3	. .	24.3	39.1	13 54.33	15.26	VII.	8	9.40	38 50.4	66.5	13 39.07	31 16.9
40	9	. .	. .	. .	. .	30.2	. .	. .	15 15.21	15.25	VII.	4	5.3	17 28.1	66.8	14 59.96	9 54.9
41	10	. .	50.4	5.3	. .	. .	. .	. .	17 20.38	15.23	IV.	8	7.47	37 53.8	67.2	17 5.15	30 21.0
42	10	49.2	4.4	19.7	. .	. .	. .	. .	19 34.40	15.20	IV.	5	11.27	25 42.8	67.6	19 19.20	18 10.4
43	10	24.1	39.2	54.1	. .	. .	. .	. .	27 8.79	15.12	IV.	2	9.46	9 52.0	69.1	26 53.67	33 2 21.1
44	7	. .	. .	. .	24.4	39.3	. .	. .	28 24.24	15.11	IV.	1	4.52	2 23.5	69.3	28 9.13	32 54 52.8
45	10	. .	. .	54.2	. .	. .	. .	. .	31 9.04	15.08	IV.	6	6.30	27 14.4	69.8	30 53.96	33 19 44.2
46	10	. .	. .	. .	. .	55.3	. .	. .	32 40.33	15.06	VI.	5	5.55	22 54.7	70.1	32 25.27	15 24.8
47	9	23.6	38.8	. .	9.0	. .	. .	. .	35 8.85	15.04	V.	8	4.1	35 59.4	70.5	34 53.81	28 29.9
48	8	19.1	34.3	49.3	4.3	. .	. .	. .	40 4.14	14.98	V.	5	4.18	22 5.9	71.3	39 49.16	14 37.2
49	9	6.8	21.9	37.2	. .	. .	. .	. .	41 51.91	14.96	IV.	5	9.18	24 37.6	71.6	41 36.95	17 9.2
50	5	. .	. .	33.7	48.7	3.4	. .	. .	42 48.46	14.95	V.	4	7.6	18 30.8	71.8	42 33.51	11 2.6
51	11	. .	. .	. .	. .	. .	6.3	21.3	43 36.65	14.94	VII.	4	8.9	19 2.2	71.9	43 21.71	11 34.1
52	10	. .	. .	. .	. .	. .	35.2	. .	45 5.44	14.93	VII.	6	4.28	26 12.2	72.1	44 50.51	18 44.3
53	10	. .	30.8	45.9	1.0	. .	. .	. .	49 0.85	14.88	IV.	8	3.47	35 52.4	72.7	48 45.97	28 25.1
54	10	. .	. .	. .	. .	53.6	8.2	. .	49 38.56	14.87	VII.	3	2.43	11 17.5	72.8	49 23.69	3 50.3
55	9	. .	9.5	24.2	39.6	. .	. .	. .	52 39.32	14.85	V.	6	10.53	29 27.4	73.3	52 24.47	22 0.7
56	8	. .	. .	46.5	1.7	16.5	. .	. .	55 1.55	14.82	V.	8	5.35	36 47.0	73.7	54 46.73	29 20.7
57	7	. .	. .	. .	. .	. .	14.9	. .	55 45.10	14.82	VII.	7	10.34	34 18.2	73.7	55 30.28	26 51.9
58	7	11.4	26.6	. .	. .	. .	. .	. .	12 58 56.54	14.77	II.	6	5.3	26 30.2	74.2	12 58 41.77	19 4.4
59	8	. .	50.6	5.8	. .	. .	. .	. .	13 0 20.58	14.76	III.	6	5.12	26 34.9	74.4	13 0 5.82	19 9.3
60	10	. .	. .	. .	. .	10.9	25.8	. .	13 1 56.00	— 14.74	V.	9	2.58	—40 27.5	— 74.7	13 1 41.26	— 33 33 2.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 15. APRIL 20. K. $D_0 = -32° 51' 20''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	″	′ ″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	22.1	36.9	. .	14 26 7.15	− 13.75	VII.	5	8.23	−24 9.3	− 45.2	14 25 53.40	− 33 16 14.5
2	10	. .	2.9	18.1	. .	. .	. .	. .	32 32.87	13.67	IV.	5	12.5	26 2.0	44.6	32 19.20	18 6.6
3	8.9	. .	. .	. .	25.3	40.3	. .	. .	33 25.20	13.66	V.	1	14.31	7 16.2	44.5	33 11.54	59 20.7
4	10	. .	58.1	13.3	28.1	. .	. .	. .	37 27.93	13.61	IV.	3	11.28	15 43.5	44.1	37 14.32	7 47.6
5	9	. .	51.7	6.8	. .	. .	. .	. .	40 21.68	13.58	IV.	7	4.43	31 21.2	43.8	40 8.10	23 25.0
6	9	. .	25.5	40.8	. .	. .	. .	. .	43 55.27	13.54	V.	2	6.47	8 21.4	43.3	43 41.73	0 24.7
7	9	. .	. .	36.3	. .	. .	. .	. .	44 50.89	13.52	IV.	3	4.52	12 23.2	43.2	44 37.37	4 26.4
8	8	. .	. .	. .	. .	. .	26.8	42.1	44 57.07	13.52	VI.	2	8.50	9 23.4	43.2	44 43.55	1 26.6
9	7	. .	. .	. .	46.7	1.4	. .	. .	46 46.48	13.50	VI.	5	5.9	22 31.5	43.0	46 32.98	14 34.5
10	11	. .	58.3	13.5	. .	. .	. .	. .	49 28.07	13.47	IV.	3	4.50	12 22.2	42.7	49 14.60	4 24.9
11	11	. .	. .	. .	57.7	. .	. .	. .	51 57.54	13.44	VII.	4	4.42	17 17.5	42.4	51 44.10	9 19.9
12	9	. .	. .	. .	4.0	. .	33.2	48.9	52 3.76	13.44	VII.	5	4.41	22 17.0	42.4	51 50.32	14 19.4
13	11	. .	. .	. .	. .	51.1	5.9	. .	53 36.15	13.42	VII.	5	4.39	22 16.0	42.2	53 22.73	14 18.2
14	11	. .	. .	27.2	42.1	. .	. .	. .	55 41.84	13.39	V.	2	8.32	9 14.5	41.9	55 28.45	1 16.4
15	11	22.9	38.3	. .	8.3	. .	. .	. .	14 58 8.18	13.36	V.	7	5.19	31 39.3	41.6	14 57 54.82	23 40.9
16	8	. .	11.7	26.8	41.4	. .	. .	. .	15 2 41.36	13.31	IV.	3	4.4	11 59.0	41.0	15 2 28.05	33 4 0.0
17	11	. .	. .	. .	47.0	1.8	. .	. .	4 46.79	13.28	V.	1	10.1	4 59.6	40.7	4 33.51	32 51 0.3
18	11	. .	. .	. .	. .	. .	. .	21.7	5 36.84	13.27	VI.	6	8.17	28 8.3	40.5	5 23.57	33 20 8.8
19	8	. .	43.9	59.1	. .	. .	. .	. .	10 14.02	13.22	II.	8	5.31	36 44.8	39.9	10 0.80	28 44.7
20	8	. .	48.5	3.6	18.7	. .	. .	. .	13 18.64	13.18	V.	9	11.49	44 56.0	39.4	13 5.46	36 55.4
21	8	. .	23.1	38.2	52.9	. .	. .	. .	18 52.77	13.11	II.	2	8.2	8 59.2	38.6	18 39.66	0 57.8
22	8	. .	57.4	12.6	27.5	. .	. .	. .	21 27.22	13.08	IV.	3	3.22	11 37.7	38.2	21 14.14	3 35.9
23	7.8	. .	. .	. .	. .	. .	35.0	50.0	22 5.18	13.08	VII.	6	4.15	26 5.6	38.1	21 52.10	33 18 3.7
24	8	. .	. .	56.2	10.9	25.9	. .	. .	34 10.74	12.94	V.	1	6.59	3 27.6	36.1	33 57.80	32 55 23.7
25	11	. .	20.3	35.8	50.6	. .	. .	. .	35 50.26	12.92	V.	2	6.45	8 20.4	35.8	35 37.34	33 0 16.2
26	11	. .	58.2	. .	. .	. .	. .	. .	38 27.90	12.89	IV.	2	5.49	7 52.1	35.3	38 15.01	32 59 47.4
27	11	. .	. .	. .	. .	. .	17.2	. .	38 47.54	12.88	VII.	2	9.20	9 38.3	35.3	38 34.66	33 1 33.6
28	11	. .	56.4	11.4	. .	. .	. .	. .	41 26.19	12.85	IV.	4	10.18	20 7.9	34.8	41 13.34	12 2.7
29	5	. .	. .	. .	. .	. .	. .	24.3	41 39.31	12.85	VII.	4	6.10	18 2.0	34.8	41 26.46	9 56.8
30	7	46.3	1.2	16.2	. .	. .	. .	. .	47 31.38	12.79	IV.	8	10.42	39 22.3	33.7	47 18.59	31 16.0
31	7	. .	. .	. .	. .	. .	2.0	. .	47 32.16	12.79	VII.	8	10.36	39 18.8	33.7	47 19.37	33 31 12.5
32	7	. .	5.1	20.4	35.0	. .	. .	. .	50 34.83	12.75	III.	1	10.27	5 12.8	33.2	50 22.08	32 57 6.0
33	11	. .	. .	45.4	0.2	. .	. .	. .	53 0.09	12.73	V.	5	3.45	21 49.2	32.7	52 47.36	33 13 41.9
34	11	. .	33.2	48.3	. .	. .	. .	. .	55 3.21	12.71	V.	7	7.39	32 50.1	32.3	54 50.50	24 42.4
35	10	. .	. .	49.0	4.1	. .	. .	. .	56 4.01	12.69	V.	9	8.46	43 23.5	32.1	55 51.32	35 15.6
36	10	. .	23.4	38.6	. .	. .	. .	. .	15 57 53.37	12.67	V.	5	12.4	26 1.5	31.8	15 57 40.70	17 53.3
37	6.7	. .	. .	14.2	29.1	43.9	. .	. .	16 0 28.91	12.65	III.	4	3.22	16 37.5	31.3	16 0 16.26	8 28.8
38	11	. .	. .	9.2	. .	. .	. .	. .	2 23.85	12.63	IV.	3	11.28	15 43.5	30.9	2 11.22	33 7 34.4
39	7	. .	. .	45.7	0.3	15.2	. .	. .	12 0.15	12.53	VI.	1	8.42	4 19.6	29.0	11 47.62	32 56 8.6
40	9	31.9	46.9	2.2	17.0	. .	. .	. .	16 16.88	12.48	IV.	4	12.20	21 9.6	28.0	16 4.40	33 12 57.6
41	10	. .	29.9	45.1	59.9	. .	. .	. .	19 59.65	12.45	III.	2	4.42	7 18.2	27.3	19 47.20	32 59 5.5
42	11	. .	8.0	23.6	. .	. .	. .	. .	22 38.04	12.42	IV.	4	3.43	16 48.2	26.7	22 25.62	33 8 34.9
43	9.10	. .	. .	15.2	. .	45.2	. .	. .	23 30.08	12.42	V.	4	11.9	20 33.6	26.5	23 17.66	12 20.1
44	11	. .	21.3	. .	51.5	. .	. .	. .	25 51.35	12.39	V.	8	8.0	38 0.3	26.0	25 38.96	28 46.3
45	8	. .	. .	24.9	40.2	54.9	. .	. .	30 39.96	12.34	VII.	7	11.26	34 44.4	25.0	30 27.62	26 29.4
46	8.9	. .	30.7	45.7	0.7	15.7	. .	. .	36 0.74	12.29	V.	9	6.14	42 6.6	23.8	35 48.45	32 50.4
47	8	. .	32.1	47.3	2.3	. .	. .	. .	38 2.16	12.27	V.	7	9.5	33 33.6	23.4	37 49.89	25 17.0
48	11	. .	. .	. .	23.1	. .	. .	. .	39 22.94	12.26	VII.	7	13.28	35 46.1	23.1	39 10.68	27 29.2
49	9	. .	4.9	19.9	34.7	. .	. .	. .	16 43 34.54	− 12.22	V.	2	9.51	− 9.54.4	− 22.1	16 43 22.32	− 33 1 36.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 15. APRIL 20. K. $D_0 = -32° 51' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	52.0	6.8	21.7	. .	16 44 51.89	− 12.20	V.	4	13.18	−21 38.9	− 21.8	16 44 39.69	− 33 13 20.7
51	7	. .	. .	7.8	22.7	37.4	. .	. .	46 22.52	12.19	V.	5	7.55	23 55.6	21.4	46 10.33	15 37.0
52	7	. .	. .	. .	37.3	52.1	. .	. .	47 37.11	12.18	VI.	2	8.35	9 15.8	21.2	47 24.93	0 57.0
53	8	. .	. .	. .	43.9	. .	13.6	. .	48 43.79	12.16	VI.	6	12.59	30 30.9	20.9	48 31.63	22 11.8
54	8.9	. .	. .	. .	. .	. .	56.6	11.6	49 26.79	12.15	VII.	5	11.31	25 44.4	20.8	49 14.64	17 25.2
55	8.9	. .	38.3	53.6	. .	. .	. .	. .	51 8.18	12.14	II.	3	13.21	16 40.4	20.4	50 56.04	8 20.8
56	10	. .	. .	. .	47.7	. .	. .	. .	52 47.54	12.12	VI.	5	13.32	26 45.8	19.9	52 35.42	18 25.7
57	10	. .	12.9	28.0	. .	. .	. .	. .	55 43.03	12.10	V.	9	4.44	41 21.1	19.3	55 30.93	33 0.4
58	11	. .	14.3	29.4	. .	. .	. .	. .	16 59 44.22	12.06	V.	6	4.39	26 18.3	18.3	16 59 32.16	17 56.6
59	10	. .	51.5	6.7	. .	. .	. .	. .	17 2 21.57	12.04	IV.	7	9.4	33 33.2	17.7	17 2 9.53	25 10.9
60	8.9	. .	. .	. .	9.3	24.2	39.1	. .	3 9.24	12.03	VI.	8	7.44	37 52.0	17.5	2 57.21	29 29.5
61	6	55.8	. .	25.8	. .	. .	. .	. .	5 40.85	11.92	III.	6	13.1	30 32.1	16.9	5 28.93	22 9.0
62	7	. .	. .	. .	. .	27.2	41.2	. .	6 11.85	11.92	VII.	8	15.54	41 59.6	16.8	5 59.93	33 36.4
63	9.10	. .	36.2	. .	. .	. .	. .	. .	9 6.10	11.98	II.	5	9.36	24 46.5	16.0	8 54.12	16 22.5
64	10	. .	. .	. .	19.8	. .	. .	. .	12 19.64	11.95	V.	5	7.59	23 57.6	15.3	12 7.69	15 32.9
65	11	. .	. .	. .	20.9	. .	. .	. .	13 20.74	11.94	VI.	2	13.23	11 41.5	15.0	13 8.80	3 16.5
66	9	. .	. .	. .	44.7	. .	. .	. .	14 44.54	11.93	IV.	3	6.34	13 14.8	14.6	14 32.61	4 49.4
67	11	. .	. .	. .	0.0	. .	. .	. .	18 59.84	11.89	VI.	7	12.58	35 31.3	13.6	18 47.95	27 4.9
68	8	. .	. .	9.4	. .	. .	. .	. .	20 24.52	11.88	IV.	9	9.42	43 51.8	13.2	20 12.64	35 25.0
69	9	. .	. .	. .	. .	7.6	. .	. .	21 52.72	11.86	VI.	9	2.34	40 15.2	12.9	21 40.86	33 31 48.1
70	9	. .	. .	13.4	. .	. .	. .	. .	23 27.87	11.85	III.	1	9.41	4 49.5	12.5	23 16.02	32 56 22.0
71	10	. .	. .	21.8	. .	. .	. .	21.8	26 36.68	11.83	IV.	4	10.49	20 23.6	11.7	26 24.85	33 11 55.3
72	10	. .	29.3	44.6	. .	. .	. .	. .	28 59.03	11.81	IV.	1	11.24	5 41.7	11.1	28 47.22	32 57 12.8
73	10	. .	. .	. .	46.9	. .	. .	. .	29 46.74	11.80	V.	8	13.14	40 39.1	10.9	29 34.94	33 32 10.0
74	10	. .	. .	. .	. .	. .	47.3	. .	30 17.57	11.80	VII.	2	12.26	11 12.4	10.7	30 5.77	2 43.1
75	7	. .	. .	3.0	18.2	. .	. .	. .	32 17.99	11.78	IV.	7	9.5	33 33.7	10.2	32 6.21	33 25 3.9
76	7	. .	. .	13.5	28.3	. .	. .	. .	33 28.07	11.78	V.	1	13.19	6 39.8	9.9	33 16.29	32 58 9.7
77	10	. .	54.3	9.6	. .	. .	. .	. .	41 24.01	11.71	IV.	1	9.27	4 42.5	7.9	41 12.30	32 56 10.4
78	10	. .	. .	27.7	43.3	. .	. .	. .	44 42.96	11.68	IV.	9	7.39	42 49.6	7.0	44 31.28	33 34 16.6
79	9	35.5	50.3	. .	. .	. .	. .	. .	47 20.25	11.66	VII.	3	4.20	12 6.6	6.3	47 8.59	3 32.9
80	8	. .	45.9	0.0	15.1	. .	. .	. .	17 50 15.24	− 11.64	IV.	7	5.38	−37 49.0	− 5.6	17 50 3.60	− 33 23 14.6

ZONE 16. APRIL 27. K. $D_0 = -27° 52' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	21.9	. .	50.0	. .	11 52 21.77	− 15.54	V.	10	6.31	−47 15.6	− 11.5	11 52 6.23	− 28 39 57.1
2	9	2.9	17.2	31.3	. .	. .	. .	. .	55 45.57	15.52	III.	7	7.42	32 51.2	11.8	55 30.05	25 33.0
3	12	. .	. .	. .	17.7	. .	46.1	. .	57 17.76	15.51	VI.	6	8.28	28 13.7	11.9	57 2.25	20 55.6
4	10	44.0	58.3	12.6	. .	. .	. .	. .	11 59 26.64	15.49	V.	5	9.21	24 39.2	12.1	59 11.15	17 21.3
5	10	. .	. .	. .	. .	24.0	37.9	52.4	12 0 9.81	15.49	VII.	4	11.50	20 54.3	12.2	11 59 54.32	13 36.5
6	10	. .	49.4	. .	17.8	. .	. .	. .	4 17.77	15.46	IV.	9	4.5	41 0.4	12.5	12 4 2.31	33 42.9
7	9	52.9	7.2	21.5	35.8	49.9	4.0	18.1	7 35.65	15.44	IV.	7	4.58	31 28.4	12.7	7 20.21	24 11.1
8	10	44.6	58.9	13.2	. .	. .	. .	. .	12 27.17	15.40	IV.	4	8.33	19 15.2	13.1	12 11.77	11 58.3
9	11	. .	. .	. .	. .	. .	26.0	40.1	12 57.71	15.40	VII.	7	9.47	33 54.0	13.1	12 42.31	26 37.1
10	12	. .	36.5	50.9	. .	. .	. .	. .	17 4.0	15.36	IV.	3	8.1	13 59.4	13.4	16 49.34	6 42.8
11	11	27.7	42.0	56.2	10.4	. .	. .	. .	22 10.39	15.32	V.	8	4.27	36 11.9	13.7	21 55.07	28 55.6
12	10	. .	40.3	54.6	8.8	. .	. .	. .	34 8.55	15.24	V.	4	4.38	17 16.4	14.2	33 53.31	10 0.6
13	10	. .	. .	. .	34.3	48.3	. .	. .	36 34.15	15.22	VII.	10	7.47	47 53.6	14.3	36 18.93	28 40 37.9
14	9	. .	. .	. .	. .	. .	59.9	14.3	12 37 31.69	− 15.21	VII.	1	7.56	− 3 57.4	− 14.4	12 37 16.48	− 27 56 41.8

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
April 27, 10	− 24.49	+ 0.002	− 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

ZONE 16. APRIL 27. K. $D_\circ = -27^\circ\ 52'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
15	10	. .	. .	. .	24.0	. .	52.3	. .	12 41 24.05	— 15.18	VII.	2	8.56	— 9 27.1	— 14.5	12 41 8.87	— 28 2 11.6
16	9	. .	. .	4.7	19.0	33.0	46.9	. .	43 18.82	15.16	VI.	6	9.44	28 52.1	14.6	43 3.66	21 36.7
17	8	. .	35.0	49.2	. .	. .	. .	. .	46 3.40	15.14	IV.	8	5.57	36 57.4	14.6	45 48.26	29 42.0
18	10	. .	. .	. .	. .	37.2	51.0	. .	46 22.95	15.14	VII.	9	7.16	42 36.6	14.6	46 7.81	35 21.2
19	8	47.1	1.6	15.8	30.0	. .	. .	. .	49 29.71	15.11	IV.	2	11.5	10 32.8	14.7	49 14.60	3 17.5
20	8	. .	. .	19.0	33.3	. .	. .	. .	51 33.21	15.10	VI.	10	6.55	47 27.6	14.7	51 18.11	40 12.3
21	7	49.1	3.7	17.8	32.0	. .	. .	. .	54 31.95	15.07	V.	7	11.24	34 43.3	14.8	54 16.88	27 28.1
22	11	. .	. .	. .	0.8	. .	. .	. .	55 0.64	15.07	VII.	6	11.5	29 32.8	14.8	54 45.57	22 17.6
23	11	. .	13.5	. .	42.3	. .	. .	. .	58 42.10	15.05	VI.	10	3.58	45 58.1	14.9	58 27.05	38 43.0
24	9	. .	. .	. .	. .	5.1	. .	. .	12 59 51.00	15.03	VI.	10	7.9	47 34.6	14.9	12 59 35.97	40 19.5
25	10	. .	. .	. .	13.4	. .	41.8	. .	13 1 13.48	15.02	VII.	5	3.37	21 45.0	14.9	13 0 58.46	14 29.9
26	9	17.1	32.0	46.2	. .	. .	. .	. .	5 0.10	14.99	IV.	5	10.43	25 20.6	14.9	4 45.11	28 18 5.5
27	9	. .	. .	. .	. .	11.9	. .	40.8	10 57.83	14.94	VII.	1	13.45	6 53.6	14.9	10 42.89	27 59 38.5
28	9	. .	. .	10.6	. .	38.8	. .	. .	13 12.42	14.92	VI.	10	4.52	46 25.4	14.9	12 57.50	28 39 10.3
29	9	44.3	58.9	13.2	. .	. .	. .	. .	24 27.31	14.83	IV.	8	9.3	38 36.4	14.7	24 12.48	31 21.1
30	9	. .	17.7	31.9	46.0	. .	. .	. .	27 46.08	14.80	VI.	9	9.37	43 47.9	14.6	27 31.28	36 32.5
31	8	9.1	23.3	37.6	. .	. .	. .	. .	41 51.70	14.67	IV.	6	6.30	27 14.3	14.2	41 37.03	19 58.5
32	8	. .	31.7	. .	0.0	14.3	. .	. .	45 59.91	14.64	IV.	2	4.9	7 22.8	14.0	45 45.27	0 6.8
33	11	. .	. .	. .	19.7	. .	. .	. .	13 56 19.54	— 14.55	VII.	6	6.41	—27 19.4	— 13.4	13 56 4.99	— 28 20 2.8

ZONE 17. MAY 4. K. $D_\circ = -29^\circ\ 0'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	11.4	25.8	. .	. .	. .	. .	13 47 39.92	— 14.59	IV.	2	4.13	— 7 4.4	— 64.8	13 47 28.33	— 29 8 39.2
2	8	. .	. .	39.4	. .	. .	. .	. .	49 53.57	14.58	IV.	4	7.38	18 47.3	64.5	49 41.99	20 21.8
3	8	. .	. .	. .	34.2	. .	2.7	. .	50 34.01	14.57	VI.	5	7.25	23 40.3	64.2	50 22.44	25 14.5
4	8	14.4	28.8	. .	. .	. .	. .	. .	55 57.58	14.52	III.	2	7.44	8 51.0	63.1	55 46.06	10 24.1
5	11	. .	. .	. .	11.5	. .	. .	. .	13 57 11.34	14.51	VII.	8	2.58	35 26.7	62.8	13 56 59.83	36 59.5
6	8	48.3	2.8	17.4	. .	. .	. .	. .	14 0 31.65	14.48	IV.	5	2.58	21 25.6	62.1	14 0 20.17	22 57.7
7	9	. .	. .	. .	25.0	39.2	. .	. .	1 24.84	14.47	V.	9	6.16	42 6.7	61.9	1 13.37	43 38.6
8	7	. .	. .	. .	. .	. .	22.4	37.0	1 53.66	14.47	VI.	5	1.33	20 42.5	61.8	1 42.19	22 14.3
9	8	. .	. .	. .	. .	. .	18.6	. .	2 49.99	14.45	VI.	1	5.37	2 47.1	61.6	2 38.54	4 18.7
10	9.10	. .	. .	. .	26.9	. .	. .	. .	4 26.74	14.44	IV.	4	2.26	16 9.7	61.2	4 15.30	17 40.9
11	8	. .	. .	34.6	49.0	. .	. .	. .	5 48.87	14.43	IV.	6	7.6	27 32.5	60.9	5 37.44	29 3.4
12	9	. .	. .	10.6	. .	. .	. .	. .	7 24.56	14.41	III.	1	9.17	4 38.4	60.6	7 13.15	6 9.0
13	9	. .	. .	. .	0.8	. .	29.3	. .	8 0.59	11.41	VI.	7	7.20	32 39.9	60.4	7 49.18	34 10.3
14	8	7.0	21.6	. .	. .	. .	. .	. .	11 50.39	11.37	III.	4	7.52	18 54.3	59.5	11 39.02	20 23.8
15	9	27.3	41.8	. .	. .	. .	. .	. .	14 10.69	11.35	III.	5	6.22	23 8.6	59.0	13 59.34	24 37.6
16	10	. .	. .	. .	57.0	. .	. .	. .	14 56.84	11.34	V.	2	2.25	6 9.8	58.8	14 45.50	7 38.6
17	10	. .	. .	. .	. .	12.6	. .	. .	15 58.16	11.34	VI.	5	4.21	22 7.4	58.5	15 46.62	23 35.9
18	8	. .	. .	9.8	24.3	38.5	. .	. .	17 24.16	11.32	V.	7	11.23	34 42.9	58.2	17 12.84	36 11.1
19	7.8	. .	. .	29.6	43.8	. .	. .	. .	19 43.92	11.30	IV.	10	6.58	47 29.4	57.7	19 32.62	48 57.1
20	10	. .	. .	. .	. .	. .	36.8	. .	21 8.13	11.29	VI.	3	6.47	13 21.8	57.3	20 56.84	14 49.1
21	8	. .	. .	. .	. .	35.1	. .	. .	22 20.67	11.28	VI.	5	8.10	24 3.1	57.0	22 9.39	25 30.1
22	9.10	. .	31.4	. .	0.6	. .	. .	. .	24 0.40	11.26	V.	8	8.37	38 18.4	56.6	23 49.14	39 45.0
23	11	. .	. .	. .	. .	23.2	37.3	. .	27 8.68	11.24	VII.	7	11.56	34 59.2	55.8	26 57.44	36 25.0
24	7	. .	. .	. .	. .	46.2	0.5	15.0	28 31.79	11.22	VII.	7	11.17	34 39.5	55.4	28 20.57	36 4.9
25	7	. .	. .	. .	4.7	. .	. .	. .	33 4.54	11.18	IV.	1	3.9	1 32.5	54.3	32 53.36	2 56.8
26	8	. .	. .	10.6	25.1	. .	. .	. .	14 34 25.02	— 11.17	IV.	9	4.49	—41 22.8	— 54.0	14 34 13.85	— 29 42 46.8

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
May 4, 10	— 21.53	+ 0.019	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(16) 28. Transits over T.'s IV and VI assumed as recorded over T.'s III and V.
(16) 32. Micrometer reading assumed as $4^r.49$ instead of $4^r.9$.

ZONE 17. MAY 4. K. $D_0 = -29° 0' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	' ''	''	h. m. s.	° ' ''
27	8	. .	. .	. .	. .	. .	13.0	. .	14 34 44.25	— 11.17	VI.	7	6.53	—32 26.4	— 53.9	14 34 33.08	— 29 33 50.3
28	7	. .	. .	. .	. .	. .	. .	44.5	35 1.10	11.16	VII.	4	9.30	19 43.5	53.8	34 49.94	21 7.3
29	8	. .	10.8	25.6	. .	. .	. .	. .	38 39.96	11.13	IV.	9	5.0	41 28.4	52.8	38 28.83	42 51.2
30	8	. .	. .	10.3	25.4	. .	. .	. .	39 25.06	11.12	IV.	10	3.12	45 35.3	52.7	39 13.94	46 58.0
31	8	. .	. .	. .	. .	. .	15.8	. .	39 46.98	11.12	VI.	10	7.4	47 32.4	52.6	39 35.86	48 55.0
32	10	. .	. .	. .	. .	. .	14.6	. .	40 45.79	11.11	VII.	10	3.14	45 35.9	52.3	40 34.68	46 58.2
33	10	. .	. .	. .	54.1	. .	. .	. .	45 53.94	11.07	IV.	3	5.36	12 46.1	50.9	45 42.87	14 7.0
34	8	50.9	5.4	19.8	. .	. .	. .	. .	47 34.17	11.05	IV.	4	9.1	19 29.2	50.5	47 23.12	20 49.7
35	8	. .	. .	. .	0.7	. .	. .	. .	48 0.54	11.05	VI.	5	7.57	23 56.5	50.3	47 49.49	25 16.8
36	9.10	. .	27.2	41.7	. .	. .	. .	. .	50 56.20	11.02	IV.	10	5.3	46 31.4	49.5	50 45.18	47 50.9
37	9	. .	. .	. .	. .	. .	31.3	. .	51 2.50	11.02	V.	9	9.56	43 57.9	49.5	50 51.48	45 17.4
38	9	6.1	20.6	. .	. .	. .	. .	. .	54 49.38	10.99	III.	3	7.51	13 54.2	48.4	54 38.39	15 12.6
39	9	. .	. .	22.9	. .	. .	. .	. .	55 37.11	10.98	III.	4	11.52	20 55.5	48.2	55 26.13	22 13.7
40	7	. .	. .	12.9	27.1	. .	. .	. .	14 56 27.03	10.97	V.	5	5.24	22 39.3	48.0	14 56 16.06	23 57.3
41	11	. .	. .	45.0	. .	. .	. .	. .	15 1 59.10	10.92	III.	3	8.37	14 17.5	46.4	15 0 48.18	15 33.9
42	11	. .	. .	. .	. .	6.1	. .	. .	1 57.71	10.92	V.	7	7.40	32 50.2	46.4	1 46.79	34 6.6
43	8	3.0	17.6	. .	. .	. .	. .	. .	4 46.30	10.90	II.	2	10.18	10 8.7	45.6	4 35.40	11 24.3
44	9	. .	46.7	. .	. .	. .	. .	. .	8 15.77	10.87	III.	10	6.28	47 14.3	44.6	8 4.90	48 28.9
45	5	. .	. .	. .	53.8	8.8	22.3	. .	8 53.86	10.86	VI.	7	10.31	34 16.5	44.4	8 43.00	35 30.9
46	10	. .	. .	. .	. .	. .	28.6	. .	10 59.85	10.84	V.	7	6.8	32 3.8	43.8	10 49.01	33 17.6
47	10	. .	. .	. .	9.0	. .	. .	. .	16 8.84	10.80	V.	7	5.0	31 29.4	42.2	15 58.04	32 41.6
48	10	. .	. .	. .	. .	22.4	. .	. .	24 7.89	10.72	V.	2	5.13	7 34.7	39.8	23 57.17	8 44.5
49	9	. .	. .	38.5	. .	. .	. .	. .	26 52.43	10.70	III.	1	5.46	2 51.8	38.9	26 41.73	4 0.7
50	9	. .	52.4	. .	. .	. .	. .	. .	29 21.03	10.68	II.	1	9.12	4 35.7	38.1	29 10.35	5 43.8
51	5	. .	. .	. .	. .	52.0	. .	21.0	29 37.89	10.68	VII.	3	11.2	15 30.4	38.1	29 27.21	16 38.5
52	9	. .	. .	. .	. .	7.0	. .	. .	30 52.53	10.66	IV.	3	8.4	14 0.8	37.6	30 41.87	15 8.4
53	9	. .	. .	. .	. .	. .	47.3	. .	31 18.55	10.66	VII.	7	6.38	27 18.4	37.5	31 7.89	28 25.9
54	8	. .	. .	36.0	. .	4.7	. .	. .	32 50.40	10.64	V.	8	8.38	38 18.8	37.0	32 39.76	39 25.8
55	9	. .	4.6	. .	. .	. .	. .	. .	34 33.28	10.63	II.	2	9.15	9 36.8	36.4	34 22.65	10 43.2
56	8	. .	. .	2.3	16.9	. .	. .	. .	35 16.78	10.62	IV.	9	6.1	41 59.2	36.2	35 6.16	43 5.4
57	7	. .	13.3	27.9	. .	. .	. .	. .	36 42.24	10.61	III.	7	7.22	32 41.0	35.8	36 31.63	33 46.8
58	10	. .	. .	. .	. .	. .	15.3	. .	36 46.56	10.61	VI.	5	5.10	22 32.1	35.7	36 35.95	23 37.8
59	10	14.6	. .	43.6	. .	. .	. .	. .	38 57.85	10.59	III.	3	11.6	15 32.8	35.0	38 47.26	16 37.8
60	9	. .	. .	. .	32.2	. .	. .	. .	39 32.04	10.58	V.	7	5.11	31 35.1	34.9	39 21.46	32 40.0
61	8	. .	. .	. .	. .	. .	36.1	. .	40 7.30	10.58	VI.	9	8.56	43 27.4	34.7	39 56.72	44 32.1
62	9	. .	. .	. .	. .	. .	. .	11.3	40 28.23	10.58	VII.	9	13.41	45 51.2	34.5	40 17.65	46 55.7
63	8	. .	. .	. .	. .	. .	26.1	. .	41 57.33	10.56	VII.	8	4.16	36 6.1	34.1	41 46.77	37 10.2
64	6	. .	. .	. .	. .	22.6	. .	. .	43 8.17	10.55	VI.	5	8.55	24 25.8	33.7	42 57.62	25 29.5
65	9	. .	. .	. .	. .	. .	. .	33.6	43 50.23	10.54	VII.	5	4.20	22 6.6	33.5	43 39.69	23 10.1
66	8	26.7	41.3	. .	. .	. .	. .	. .	48 10.24	10.51	III.	7	6.4	32 1.7	32.0	47 59.73	33 3.7
67	9	. .	36.5	50.9	. .	. .	. .	. .	50 5.33	10.49	IV.	7	4.51	31 24.9	31.4	49 54.84	32 26.3
68	7	. .	. .	. .	30.7	. .	59.3	. .	50 30.53	10.49	VI.	8	7.42	37 50.4	31.2	50 20.04	38 51.6
69	9	. .	. .	. .	23.3	. .	. .	. .	54 37.56	10.45	IV.	9	5.38	41 47.6	29.9	54 27.11	42 47.5
70	9	. .	59.1	. .	. .	. .	. .	. .	58 27.70	10.42	IV.	1	5.19	2 38.2	28.5	58 17.28	3 36.7
71	8	. .	. .	6.6	. .	. .	. .	. .	15 59 21.02	10.41	VI.	7	11.43	34 52.9	28.2	15 59 10.61	35 51.2
72	11	. .	. .	31.4	. .	. .	. .	. .	16 2 45.71	10.39	III.	6	8.6	28 2.8	27.1	16 2 35.32	28 59.9
73	7	. .	. .	. .	27.0	. .	. .	. .	3 26.84	10.38	V.	9	11.2	44 31.2	26.8	3 16.46	45 28.0
74	9	. .	. .	. .	. .	. .	27.2	. .	3 58.53	10.38	VI.	3	8.42	14 19.9	26.6	3 48.15	15 16.5
75	8	57.0	11.3	. .	. .	. .	. .	. .	16 7 40.26	— 10.34	III.	4	11.42	—20 50.5	— 25.4	16 7 29.92	— 29 21 45.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(17) 53. Hor. thread assumed as 6 instead of 7.
(17) 69. Transit over T. III assumed as recorded over T. IV.

ZONE 17. MAY 4. K. $D_0 = -29° 0' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
76	8	. .	2.5	16.8	. .	. .	. .	. .	16 8 31.19	— 10.33	III.	5	8.13	—24 4.9	— 25.1	16 8 20.86	— 29 25 0.0
77	8	. .	50.6	. .	. .	. .	. .	. .	10 19.53	10.32	IV.	7	9.6	33 33.8	24.4	10 9.21	34 28.2
78	9	. .	. .	. .	. .	46.0	. .	. .	10 31.47	10.32	V.	1	6.31	3 14.5	24.4	10 21.15	4 8.9
79	7	. .	. .	. .	. .	36.1	. .	. .	11 21.59	10.31	V.	2	5.45	7 50.9	24.1	11 11.28	8 45.0
80	8	. .	. .	. .	. .	. .	29.6	. .	12 0.80	10.30	VI.	9	8.27	43 12.8	23.8	11 50.50	44 6.6
81	9	. .	. .	28.9	43.4	. .	. .	. .	13 43.34	10.29	V.	9	8.32	43 15.4	23.2	13 33.05	44 8.6
82	8	. .	. .	36.9	. .	. .	. .	. .	14 51.49	10.28	IV.	10	6.35	47 17.9	22.8	14 41.21	48 10.7
83	6	. .	. .	. .	25.0	39.3	. .	. .	15 24.85	10.28	V.	4	9.47	19 52.4	22.6	15 14.57	20 45.0
84	7	. .	. .	. .	33.2	. .	. .	. .	16 33.04	10.27	VI.	7	8.42	33 21.4	22.2	16 22.77	34 13.6
85	9	. .	36.5	. .	. .	. .	. .	. .	18 5.14	10.26	III.	1	12.12	6 6.8	21.7	17 54.88	6 58.5
86	9	. .	54.1	. .	23.2	. .	. .	. .	20 23.02	10.24	IV.	7	3.41	30 49.5	20.9	20 12.78	31 40.4
87	8	. .	. .	40.4	. .	. .	. .	. .	21 54.88	10.22	III.	8	9.50	38 55.2	20.3	21 44.66	39 45.5
88	8	. .	. .	. .	26.3	. .	. .	. .	22 26.14	10.22	IV.	7	7.5	32 32.7	20.1	22 15.92	33 22.8
89	9	. .	. .	. .	. .	. .	15.4	. .	22 46.60	10.22	VI.	9	7.22	42 39.9	20.0	22 36.38	43 29.9
90	9	. .	. .	. .	. .	20.4	. .	. .	24 6.03	10.21	V.	8	4.55	36 26.2	19.5	23 55.82	37 15.7
91	8.9	. .	. .	. .	. .	7.2	. .	. .	24 52.79	10.20	V.	6	11.15	29 38.3	19.2	24 42.59	30 27.5
92	8	. .	. .	. .	. .	. .	38.0	. .	26 9.34	10.19	VI.	3	3.51	11 52.8	18.8	25 59.15	12 41.6
93	9	. .	. .	. .	. .	39.9	. .	. .	27 25.42	10.18	V.	3	6.17	13 6.7	18.3	27 15.24	13 55.0
94	9	. .	. .	40.1	. .	. .	. .	. .	28 54.30	10.17	IV.	5	2.28	21 10.5	17.8	28 44.13	21 58.3
95	8	. .	. .	. .	27.8	. .	. .	. .	29 27.64	10.16	VII.	7	10.7	34 4.1	17.6	29 17.48	34 51.7
96	7.8	. .	. .	. .	. .	. .	27.0	. .	29 58.23	10.16	VII.	8	4.41	36 18.7	17.4	29 48.07	37 6.1
97	9	44.2	. .	. .	. .	. .	. .	. .	30 27.50	10.16	I.	2	6.30	8 13.2	17.2	30 17.34	9 0.4
98	10	. .	16.0	. .	. .	. .	. .	. .	33 44.66	10.13	IV.	2	7.24	8 41.0	16.0	33 34.53	9 27.0
99	8	. .	. .	24.0	. .	. .	. .	. .	34 38.25	10.13	IV.	4	4.13	17 3.7	15.7	34 28.12	17 49.4
100	10	. .	. .	. .	16.3	. .	. .	. .	35 16.14	10.12	IV.	4	5.24	17 39.6	15.4	35 6.02	18 25.0
101	9	. .	. .	. .	. .	. .	. .	2.4	35 19.01	10.12	VII.	4	10.6	20 1.6	15.4	35 8.89	20 47.0
102	9	. .	. .	. .	. .	. .	. .	58.8	36 15.27	10.11	VII.	2	7.5	8 30.9	15.0	36 5.16	9 15.9
103	8	. .	. .	. .	46.6	. .	. .	. .	37 46.44	10.10	IV.	4	6.8	18 1.8	14.5	37 36.34	18 46.3
104	9	. .	. .	. .	26.2	. .	. .	. .	38 26.04	10.10	VI.	8	9.46	38 53.1	14.2	38 15.94	39 37.3
105	9	. .	. .	. .	27.4	. .	. .	. .	39 27.24	10.08	IV.	9	5.00	41 28.4	13.9	39 17.16	42 12.3
106	10	. .	. .	. .	. .	. .	. .	27.0	39 43.86	10.08	VII.	9	1.20	39 36.8	13.8	39 33.78	40 20.6
107	8	. .	47.2	. .	. .	. .	. .	. .	42 15.86	10.06	III.	2	6.2	7 59.5	12.8	42 5.80	8 42.3
108	9	. .	25.4	. .	. .	. .	. .	. .	43 54.42	10.05	III.	9	7.18	42 38.0	12.2	43 44.37	43 20.2
109	8.9	. .	. .	. .	28.3	. .	. .	. .	44 28.14	10.05	IV.	2	2.30	6 12.4	12.0	44 18.09	6 54.4
110	8	. .	. .	. .	. .	. .	20.0	. .	44 51.37	10.04	VI.	2	4.29	7 12.4	11.8	44 41.33	7 54.2
111	8	. .	. .	. .	. .	. .	. .	23.4	16 45 40.19	— 10.03	VII.	8	2.38	—35 16.6	— 11.5	16 45 30.16	— 29 35 58.1

ZONE 18. MAY 19. A. $D_0 = -30° 23' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	27.8	42.3	57.0	12.0	26.4	40.7	55.2	14 45 11.70	— 12.60	II.	8	4.44	—36 20.7	— 28.3	14 44 59.10	— 31 0 39.0
2	10	. .	. .	. .	37.5	51.4	6.5	. .	51 37.24	12.55	IV.	2	4.20	7 7.7	27.7	51 24.69	30 31 25.4
3	9	. .	9.5	24.2	38.5	53.4	7.5	22.2	14 54 38.55	12.53	II.	5	5.15	22 34.6	27.4	14 54 26.02	46 52.0
4	11	. .	. .	. .	21.0	35.0	50.2	5.0	15 1 20.94	12.48	IV.	4	11.	20 29.3	26.6	15 1 8.46	44 45.9
5	4	55.2	10.0	24.6	39.4	53.7	8.2	22.8	5 39.18	12.45	I.	7	8.8	33 4.1	26.1	5 26.73	57 20.2
6	6	. .	13.5	28.4	42.8	57.4	11.5	26.5	15 42.64	12.37	II.	3	10.2	15 0.1	24.9	9 30.27	39 15.0
7	8	41.8	56.2	10.9	25.5	40.0	54.2	9.1	17 25.37	12.36	I.	5	6.4	22 59.1	24.7	17 13.01	47 13.8
8	9	. .	. .	43.2	57.6	12.0	26.5	. .	19 57.53	12.34	IV.	7	7.35	32 47.9	24.3	19 45.19	57 2.2
9	9	. .	. .	. .	17.3	31.5	46.0	1.0	15 23 17.07	— 12.32	IV.	3	7.10	—13 33.4	— 23.9	15 23 4.75	— 30 37 47.3

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
May 19, 11	— 22.90	— 0.002	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°
Zone 18	May 19,	30.057	64.5	53.

REMARKS.

(18) 6. Minutes assumed as 9 instead of 15.

ZONE 18. MAY 19. A. $D_\circ = -30° 23' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
10	9	2.8	17.2	32.5	46.9	1.5	15.6	30.4	15 28 46.68	— 12.28	I.	4	11.39	—20 48.5	— 23.1	15 28 34.40	— 30 45 1.6
11	7	. .	41.3	55.8	10.3	24.7	39.0	54.0	31 10.16	12.26	II.	4	8.4	19 0.2	22.8	30 57.90	30 43 13.0
12	9	. .	. .	. .	55.5	9.5	24.2	38.7	34 55.17	12.24	IV.	9	8.3	43 1.2	22.2	34 42.93	31 7 13.4
13	7	. .	. .	. .	19.9	35.0	49.0	3.8	46 20.04	12.15	IV.	3	8.13	14 5.2	20.5	46 7.89	30 38 15.7
14	7	. .	11.8	26.7	41.1	55.6	9.9	25.0	50 41.00	12.11	II.	4	9.36	19 46.6	19.8	50 28.89	30 43 56.4
15	11	. .	. .	. .	. .	. .	36.0	50.0	52 6.73	12.11	VI.	9	8.7	43 3.0	19.6	51 54.62	31 7 12.6
16	10	26.0	40.5	55.5	10.0	. .	. .	. .	15 56 9.94	12.08	III.	8	8.28	38 14.0	18.9	15 55 57.86	31 2 22.9
17	8	. .	. .	. .	14.0	28.3	42.9	57.5	16 0 13.78	12.05	V.	2	9.27	14 42.6	18.3	16 0 1.73	30 38 50.9
18	7	. .	. .	. .	22.5	37.2	51.5	6.5	16 45 22.56	— 12.74	V.	4	9.11	—19 34.2	— 10.0	16 45 10.82	— 30 43 34.2

ZONE 19. MAY 20. K. $D_\circ = -34° 5' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	54.0	. .	26.1	. .	. .	. .	. .	14 3 40.60	— 12.94	IV.	7	12.3	—35 3.9	— 66.1	14 3 27.66	— 34 42 0.0
2	10	4.3	19.6	. .	. .	. .	. .	. .	5 49.90	12.93	III.	4	3.33	16 42.8	66.2	5 36.97	23 39.0
3	8	13.4	29.0	. .	. .	. .	. .	. .	7 59.08	12.91	IV.	3	3.4	11 28.3	66.2	7 46.17	18 24.5
4	9	45.0	0.6	. .	. .	. .	. .	. .	11 30.99	12.88	III.	7	11.41	34 52.8	66.2	11 18.11	41 49.0
5	10	. .	. .	13.6	. .	. .	. .	. .	12 28.96	12.87	III.	9	13.5	45 34.9	66.2	12 16.09	52 31.1
6	11	46.7	2.2	. .	. .	. .	. .	. .	16 32.61	12.83	III.	7	7.10	32 35.6	66.2	16 19.78	39 31.8
7	6	54.5	10.1	25.2	. .	. .	. .	. .	18 40.52	12.81	IV.	8	10.6	39 4.4	66.2	18 27.71	46 0.6
8	8.9	. .	. .	. .	. .	. .	26.4	41.7	18 56.19	12.81	VI.	6	7.10	27 34.5	66.2	18 43.38	34 30.7
9	10	. .	8.5	23.8	. .	. .	. .	. .	22 38.95	12.78	IV.	7	9.57	34 0.1	66.1	22 26.17	40 56.2
10	11	. .	. .	47.2	. .	. .	. .	. .	24 2.55	12.76	V.	9	11.19	44 41.3	66.1	23 49.79	51 37.4
11	8.9	. .	. .	. .	. .	. .	59.3	14.8	22 29.13	12.78	VII.	2	10.29	10 12.8	66.1	22 16.35	17 8.9
12	10	. .	. .	. .	. .	15.0	. .	. .	25 59.80	12.75	V.	4	12.35	21 17.0	66.1	25 47.05	28 13.1
13	8	. .	. .	. .	. .	28.8	43.8	. .	27 13.63	12.74	VII.	2	5.53	7 53.2	66.1	27 0.89	14 49.3
14	8	. .	. .	33.2	48.8	. .	. .	. .	28 48.59	12.72	V.	9	11.32	44 47.9	66.1	28 35.87	51 44.0
15	6	. .	. .	. .	. .	45.1	0.2	15.3	29 29.92	12.71	VII.	6	12.32	30 17.1	66.0	29 17.21	37 13.1
16	4	56.6	12.3	27.2	. .	. .	. .	. .	34 42.40	12.67	V.	5	8.54	24 25.4	65.9	34 29.73	31 21.3
17	5	. .	30.0	45.6	0.8	. .	. .	. .	36 0.54	12.66	V.	6	4.23	26 10.3	65.9	35 47.88	33 6.2
18	10	. .	. .	. .	. .	45.2	. .	15.5	41 29.94	12.60	VII.	4	12.9	21 3.4	65.7	41 17.34	27 59.1
19	10	. .	58.2	. .	28.7	. .	. .	. .	45 28.45	12.57	V.	2	12.31	11 15.0	65.6	45 15.88	18 10.6
20	9	. .	36.8	52.2	. .	. .	. .	. .	47 7.39	12.55	V.	8	11.3	39 33.2	65.6	46 54.84	46 28.8
21	8	. .	. .	. .	37.6	52.7	. .	. .	47 37.49	12.55	V.	6	13.18	30 40.8	65.5	47 24.94	37 36.3
22	7.8	. .	. .	. .	. .	43.4	58.6	. .	48 28.30	12.54	VI.	8	11.7	39 35.1	65.5	48 15.76	46 30.6
23	10	. .	. .	. .	53.2	. .	23.5	. .	49 53.24	12.52	VI.	1	12.9	6 3.8	65.5	49 40.72	12 59.3
24	10	. .	. .	. .	. .	44.1	. .	. .	51 28.90	12.51	VI.	4	10.20	20 8.6	65.4	51 16.39	27 4.0
25	10	30.1	45.3	0.6	. .	. .	. .	. .	54 15.51	12.48	VI.	2	11.13	10 36.4	65.3	54 3.03	17 30.7
26	9	. .	38.7	. .	9.3	. .	. .	. .	14 57 9.19	12.46	VI.	9	6.23	42 11.4	65.1	14 56 56.73	49 6.5
27	11	. .	. .	. .	32.7	. .	. .	. .	15 1 32.53	12.42	V.	5	3.24	21 38.5	64.9	15 1 20.11	28 33.4
28	7	. .	. .	. .	38.1	. .	. .	. .	2 37.93	12.41	IV.	10	7.33	47 49.0	64.9	2 25.52	54 43.9
29	8	. .	. .	. .	. .	. .	39.6	55.2	3 9.50	12.41	VII.	4	3.52	16 52.0	64.9	2 57.09	23 46.9
30	9	. .	7.7	. .	38.1	. .	. .	. .	6 37.88	12.38	V.	2	5.14	7 33.9	64.7	6 25.50	14 28.6
31	8.7	14.9	30.3	45.6	. .	. .	. .	. .	11 0.51	12.33	IV.	3	11.13	15 35.6	64.4	10 48.18	22 30.0
32	6.7	. .	41.9	57.0	11.9	. .	. .	. .	13 11.79	12.32	V.	1	6.1	2 57.8	64.3	12 59.47	9 52.1
33	8.9	. .	. .	5.8	20.7	35.8	. .	. .	14 20.52	12.31	VI.	1	10.19	5 8.2	64.2	14 8.21	12 2.4
34	8	. .	37.0	52.2	7.6	. .	. .	. .	20 7.53	12.26	VI.	9	13.28	45 46.4	63.9	19 55.27	52 40.3
35	10	. .	52.8	8.2	. .	. .	. .	. .	24 23.46	12.22	IV.	9	10.33	44 18.1	63.6	24 11.24	51 11.7
36	10	. .	2.2	17.7	. .	. .	. .	. .	15 27 32.33	— 12.19	V.	1	9.19	— 4 37.9	— 63.4	15 27 20.14	— 34 11 31.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
May 20,	11	— 23.07	+ 0.010	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(18) 17. Hor. thread assumed as 3 instead of 2.
(19) 9. Discordant from Mural Zone of same date.
(19) 20. Right Ascension discordant from Mural Zone of same date.

ZONE 19. MAY 20. K. $D_0 = -34° 5' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
37	9	. .	35.0	50.3	. .	. .	. .	. .	15 30 5.12	— 12.17	V.	2	10.39	—10 18.3	— 63.2	15 29 52.95	— 34 17 11.5
38	8	. .	. .	. .	. .	48.9	. .	. .	30 33.62	12.17	V.	1	5.47	2 50.7	63.1	30 20.45	9 43.8
39	8	. .	1.9	17.2	. .	. .	. .	. .	32 32.11	12.15	IV.	4	3.20	16 36.3	62.7	32 19.96	23 29.0
40	5.6	. .	. .	5.2	20.5	35.4	. .	. .	33 20.15	12.14	V.	2	3.15	6 33.8	62.5	33 8.01	13 26.3
41	10	. .	. .	. .	. .	. .	24.3	. .	33 54.03	12.14	VII.	8	9.10	38 35.6	62.4	33 41.89	45 28.0
42	10	. .	. .	. .	. .	8.1	. .	. .	34 53.01	12.13	IV.	8	13.59	41 2.3	62.2	34 40.88	47 54.5
43	8	. .	. .	. .	. .	. .	13.2	28.6	35 43.07	12.13	VI.	6	13.1	30 32.1	62.0	35 30.94	37 24.1
44	6	. .	. .	7.4	22.3	. .	. .	. .	37 22.12	12.11	IV.	1	11.18	5 38.2	61.6	37 10.01	12 29.8
45	11	. .	. .	. .	. .	. .	41.3	. .	39 11.20	12.09	VI.	2	9.49	9 52.9	61.2	38 59.11	16 44.1
46	10	. .	59.5	15.1	. .	. .	. .	. .	42 30.03	12.07	II.	6	8.37	28 18.6	60.5	42 17.96	35 9.1
47	10	. .	. .	. .	35.2	. .	. .	. .	42 35.03	12.07	VI.	3	10.46	15 21.8	60.4	42 22.96	22 12.2
48	10	. .	. .	. .	. .	10.4	. .	. .	43 55.29	12.05	VI.	8	5.28	36 43.6	60.1	43 43.24	43 33.7
49	9	. .	34.8	46.8	. .	. .	. .	. .	46 5.34	12.04	VI.	10	4.7	46 4.5	59.6	45 53.30	52 54.1
50	11	. .	. .	. .	18.0	. .	. .	. .	48 18.83	12.02	IV.	8	6.52	37 26.3	59.1	48 6.81	44 15.4
51	8	. .	50.0	5.4	. .	. .	. .	. .	51 20.10	11.99	III.	1	10.22	5 9.8	58.4	51 8.11	11 58.2
52	9	. .	. .	48.7	. .	. .	. .	. .	53 4.03	11.98	IV.	9	9.28	43 45.2	58.0	52 52.05	50 33.2
53	9	. .	. .	. .	. .	. .	. .	53.2	53 7.89	11.98	VII.	9	7.44	42 52.1	58.0	52 55.91	49 40.1
54	7.8	. .	. .	. .	. .	. .	13.6	. .	53 43.47	11.98	.	.	. .	. . .	. .	53 31.49	
55	8	. .	. .	44.7	0.0	. .	. .	. .	58 59.89	11.92	IV.	8	9.5	38 33.6	56.6	58 47.97	45 20.2
56	7.8	. .	. .	38.8	. .	. .	. .	. .	15 59 53.85	11.92	IV.	6	6.13	27 5.9	56.3	59 41.93	33 52.2
57	9	. .	. .	. .	. .	. .	. .	45.8	16 0 0.42	11.92	VII.	8	8.25	38 12.8	56.3	15 59 48.52	44 59.1
58	8	7.9	23.2	38.8	. .	. .	. .	. .	7 53.61	11.86	IV.	4	9.52	19 54.6	54.4	16 7 41.75	26 39.0
59	7	. .	. .	. .	41.3	56.1	. .	. .	8 41.02	11.85	IV.	5	11.13	25 35.8	54.1	8 29.17	32 19.9
60	6.7	. .	. .	. .	. .	. .	7.0	22.2	13 36.74	11.81	VII.	6	6.18	27 7.9	52.9	13 24.93	33 50.8
61	6.7	. .	. .	. .	. .	. .	25.0	. .	14 54.70	11.80	VII.	9	6.58	42 28.6	52.6	14 42.90	49 11.2
62	6	. .	. .	. .	. .	. .	. .	54.2	15 8.66	11.80	.	.	. .	. . .	. .	14 56.86	
63	10	. .	. .	. .	. .	. .	3.6	18.8	16 33.36	11.79	VII.	7	4.16	31 7.2	52.2	16 21.57	37 49.4
64	8	. .	. .	. .	15.0	. .	45.0	. .	18 14.79	11.78	VII.	8	13.58	41 1.3	51.7	18 3.01	47 43.0
65	5	. .	16.6	31.8	. .	. .	. .	. .	21 16.74	11.74	III.	3	11.15	15 36.6	50.8	21 35.00	22 17.4
66	10	. .	21.9	. .	. .	. .	. .	. .	25 52.11	11.71	II.	3	8.16	14 5.9	49.7	25 40.40	20 45.6
67	9	. .	. .	16.3	31.3	. .	. .	. .	32 31.04	11.66	IV.	1	6.35	3 15.0	48.0	32 19.38	9 53.0
68	10	. .	18.3	. .	48.8	. .	. .	. .	35 48.56	11.64	IV.	3	6.23	13 9.0	47.1	35 36.92	19 46.1
69	9	. .	. .	53.9	. .	. .	. .	. .	46 8.65	11.56	IV.	2	6.8	8 1.3	44.3	45 57.09	14 35.6
70	9	. .	. .	. .	. .	28.7	. .	. .	48 13.42	11.55	V.	1	6.40	3 17.5	43.7	48 1.87	9 51.2
71	9	. .	. .	. .	. .	. .	. .	28.6	48 42.91	11.55	VII.	3	8.51	14 23.2	43.6	48 31.36	20 56.8
72	9	. .	. .	28.8	. .	. .	. .	. .	53 43.64	11.50	IV.	3	9.17	14 37.0	42.2	53 32.14	21 9.2
73	9	. .	10.9	26.0	. .	. .	. .	. .	55 41.42	11.49	IV.	9	12.34	45 19.3	41.6	55 29.93	51 50.9
74	9	56.1	14.4	. .	. .	. .	. .	. .	57 42.06	11.48	IV.	9	7.14	42 37.4	41.1	57 30.58	49 8.5
75	9	. .	. .	. .	. .	. .	19.5	. .	57 49.39	11.48	VI.	3	3.3	11 27.6	41.0	57 37.91	17 58.6
76	7	. .	. .	. .	. .	. .	. .	14.0	58 28.68	11.47	VII.	9	4.56	41 27.1	40.8	58 17.21	47 57.9
77	7	. .	. .	. .	. .	. .	8.9	24.0	16 59 38.59	— 11.46	VII.	6	5.27	—26 42.1	— 40.5	16 59 27.13	— 34 33 12.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 20. MAY 20. K. $D_0 = -34° 5' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	. .	27.3	42.3	17 50 56.97	− 11.15	VII.	8	2.35	−35 15.7	− 28.2	17 50 45.82	− 34 41 33.9
2	9	. .	. .	. .	. .	. .	7.3	. .	52 37.23	11.14	VI.	1	9.9	4 32.7	27.8	52 26.09	10 50.5
3	9	. .	. .	. .	. .	. .	. .	23.1	53 37.81	11.13	VII.	9	10.19	44 10.5	27.6	53 26.68	50 28.1
4	9	. .	. .	. .	. .	. .	. .	8.2	54 22.89	11.13	VII.	9	7.34	42 47.0	27.4	54 11.76	49 4.4
5	9	. .	. .	. .	. .	. .	. .	45.0	54 59.69	11.13	VII.	9	6.58	42 28.8	27.3	54 48.56	48 46.1
6	9	. .	. .	. .	. .	. .	23.3	38.6	55 53.11	11.12	VII.	7	3.41	30 49.4	27.1	55 41.99	37 6.5
7	8	. .	. .	. .	. .	. .	. .	19.5	56 33.79	11.12	VII.	3	5.59	12 56.3	26.9	56 22.67	19 13.2
8	8	. .	. .	. .	. .	12.0	. .	. .	57 56.75	11.11	VI.	2	7.55	8 55.2	26.7	57 45.64	15 11.9
9	9	. .	. .	. .	. .	. .	6.0	. .	17 58 35.82	11.10	VI.	5	10.14	25 5.7	26.5	58 24.72	31 22.2
10	9	. .	. .	. .	. .	16.6	. .	. .	18 0 1.51	11.10	V.	8	13.19	39 41.3	26.2	17 59 50.41	45 57.5
11	9	18.4	32.8	. .	. .	. .	. .	. .	2 3.73	11.09	IV.	6	13.58	31 1.1	25.7	18 1 52.64	37 16.8
12	9	. .	. .	. .	. .	27.4	. .	. .	2 12.25	11.09	VI.	6	13.34	30 48.8	25.7	2 1.16	37 4.5
13	8	30.0	45.4	. .	. .	. .	. .	. .	4 15.60	11.08	III.	3	6.11	13 2.8	25.3	4 4.52	19 18.1
14	7.8	. .	. .	. .	17.7	32.8	. .	. .	4 17.59	11.08	VI.	7	5.11	31 35.3	25.3	4 6.51	37 50.6
15	7.8	. .	. .	. .	39.2	54.2	. .	. .	5 39.04	11.07	VI.	7	5.24	31 41.8	25.0	5 27.97	37 56.8
16	9	9.9	. .	. .	. .	. .	. .	. .	7 55.61	11.06	I.	4	10.59	20 28.0	24.5	7 44.55	26 42.5
17	8	. .	11.2	26.6	. .	. .	. .	. .	8 41.76	11.05	IV.	8	7.49	37 55.1	24.3	8 30.71	44 9.4
18	8.9	. .	. .	. .	. .	. .	17.9	. .	8 47.73	11.05	VII.	5	6.30	23 12.1	24.3	8 36.68	29 26.4
19	8	. .	. .	. .	. .	. .	. .	14.7	9 29.38	11.05	VII.	9	4.52	41 25.1	24.1	9 18.33	47 39.2
20	8	. .	. .	. .	. .	. .	. .	5.1	10 19.81	11.05	VII.	9	9.9	43 35.1	24.0	10 8.76	49 49.1
21	10	. .	. .	. .	11.4	. .	. .	. .	13 11.23	11.04	IV.	8	5.9	36 34.2	23.3	13 0.19	42 47.5
22	8	. .	. .	. .	. .	22.8	. .	. .	14 7.69	11.03	IV.	8	6.57	37 28.8	23.1	13 56.66	43 41.9
23	3.2	. .	. .	. .	. .	. .	. .	9.3	14 23.71	11.03	VII.	4	13.37	20 47.2	23.1	14 12.68	27 0.3
24	9	50.8	. .	. .	. .	. .	. .	. .	17 36.83	11.02	II.	9	8.4	43 2.5	22.4	17 25.81	49 14.9
25	9	. .	. .	. .	51.6	. .	. .	. .	17 51.43	11.02	IV.	2	7.50	8 52.9	22.3	17 40.41	15 5.2
26	9	. .	. .	. .	35.9	. .	. .	. .	19 35.73	11.01	IV.	7	4.37	31 18.3	22.0	19 24.72	37 30.3
27	8	. .	. .	. .	. .	. .	28.9	44.3	19 58.69	11.01	VII.	3	10.47	15 22.0	21.8	19 47.68	21 33.8
28	7.8	. .	. .	. .	34.9	49.9	. .	. .	21 34.77	11.01	VI.	9	11.1	44 32.0	21.5	21 23.76	50 43.5
29	10	. .	. .	42.0	. .	. .	. .	. .	24 56.95	10.99	IV.	5	3.46	21 49.6	20.8	24 45.96	28 0.4
30	9	. .	. .	. .	25.7	. .	. .	. .	26 25.53	10.99	IV.	2	5.8	7 31.0	20.4	26 14.54	13 41.4
31	9	. .	. .	. .	17.6	. .	. .	. .	27 17.43	10.99	IV.	7	6.44	32 22.6	20.2	27 6.44	38 32.8
32	7.8	. .	. .	. .	. .	11.5	. .	42.0	27 56.47	10.98	VI.	7	9.27	33 44.5	20.1	27 45.49	39 54.6
33	5	. .	. .	. .	32.9	. .	3.0	. .	29 32.83	10.97	V.	2	12.36	11 17.5	19.7	29 21.86	17 27.2
34	7	. .	. .	. .	. .	. .	46.3	1.5	32 16.07	10.96	VII.	6	11.34	29 47.8	19.1	32 5.11	35 56.9
35	7	. .	38.3	53.7	. .	. .	. .	. .	36 8.86	10.95	III.	8	6.33	37 16.6	18.3	35 57.91	43 24.9
36	8	. .	31.0	45.3	. .	. .	. .	. .	40 1.40	10.93	IV.	7	12.59	35 32.3	17.4	39 50.47	41 39.7
37	8	. .	. .	. .	. .	. .	37.6	. .	40 7.47	10.93	VII.	3	10.29	15 12.9	17.4	39 56.54	21 20.3
38	6.7	. .	. .	. .	. .	. .	32.3	47.5	41 2.03	10.93	VII.	5	4.27	22 9.8	17.2	40 51.10	28 17.0
39	9	. .	. .	. .	. .	. .	38.2	. .	43 7.94	10.92	VI.	8	7.20	37 40.2	16.7	42 57.02	43 46.9
40	9	. .	. .	. .	. .	. .	. .	22.7	43 37.38	10.92	VII.	9	4.51	41 24.5	16.6	43 26.46	47 31.1
41	9	. .	. .	. .	. .	50.1	. .	. .	45 35.02	10.91	VI.	9	9.13	43 37.5	16.2	45 24.11	49 43.7
42	9	. .	. .	. .	. .	. .	4.7	. .	46 34.53	10.91	VI.	5	7.45	23 50.3	15.9	46 23.62	29 56.2
43	9	. .	. .	14.7	. .	. .	. .	. .	48 29.65	10.90	IV.	5	3.26	21 39.5	15.5	48 18.75	27 45.0
44	7	. .	. .	. .	. .	59.4	14.3	30.1	48 44.27	10.90	VII.	4	6.59	18 26.6	15.5	48 33.37	24 32.1
45	7	. .	. .	. .	. .	14.8	. .	45.2	49 59.72	10.90	VII.	7	9.55	33 58.7	15.2	49 48.82	40 3.9
46	7	. .	. .	27.7	. .	. .	. .	. .	51 42.91	10.90	IV.	8	4.52	36 25.6	14.8	51 32.01	42 30.4
47	8	. .	. .	. .	. .	. .	. .	30.3	51 44.80	10.90	VII.	6	9.27	28 43.5	14.8	51 33.90	34 48.3
48	7	. .	. .	. .	. .	. .	18.1	. .	52 47.80	10.89	VII.	9	10.28	44 15.0	14.6	52 36.91	50 19.6
49	9	. .	. .	. .	. .	36.8	. .	. .	18 54 21.64	− 10.89	IV.	6	10.6	−29 3.8	− 14.2	18 54 10.75	− 34 35 8.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(20) 10. Micrometer reading assumed as 11ʳ.19 instead of 13ʳ.19.
(20) 23. Micrometer reading assumed as 11ʳ.37 instead of 13ʳ.37.

ZONE 20. MAY 20. K. D₀ = −34° 5′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.	h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	10	. .	. .	. .	. .	. .	37.8	. .	18 55 7.60	— 10.88	VII.	6	7.30	−27 44.3	— 14.1	18 54 56.72	— 34 33 48.4
51	7	33.3	48.9	4.3	. .	. .	. .	. .	58 19.39	10.87	IV.	8	4.25	36 11.9	13.3	58 8.52	42 15.2
52	8	. .	7.9	23.3	. .	. .	. .	. .	18 59 38.46	10.87	III.	8	6.29	37 14.6	13.1	18 59 27.59	43 17.7
53	9	. .	25.6	. .	. .	. .	. .	. .	19 1 55.91	10.87	III.	5	3.41	21 47.0	12.5	19 1 45.04	27 49.5
54	8	19.8	35.5	. .	. .	. .	. .	. .	3 5.84	10.87	IV.	7	11.29	34 46.8	12.3	2 54.97	40 49.1
55	10	28.3	. .	. .	. .	. .	. .	. .	5 13.91	10.86	I.	3	7.13	13 33.5	11.8	5 3.05	19 35.3
56	8	. .	. .	20.8	36.0	. .	. .	. .	5 35.83	10.86	IV.	6	4.46	26 21.9	11.7	5 24.97	32 23.6
57	10	. .	. .	. .	. .	. .	. .	49.8	6 4.26	10.85	VII.	5	11.01	25 29.2	11.6	5 53.41	31 30.8
58	9	. .	. .	. .	. .	. .	55.0	. .	7 24.87	10.85	VII.	4	13.5	21 31.7	11.3	7 14.02	27 33.0
59	9	. .	. .	. .	. .	. .	44.1	. .	8 13.82	10.84	VII.	9	3.59	40 58.2	11.1	8 2.98	46 59.3
69	8	. .	. .	. .	. .	. .	43.2	. .	9 13.04	10.84	VII.	5	5.35	22 44.3	10.9	9 2.20	28 45.2
61	10	. .	. .	. .	. .	. .	9.0	. .	10 38.81	10.84	VII.	6	4.56	26 26.4	10.6	10 27.97	32 27.0
62	10	11.9	. .	42.9	. .	. .	. .	. .	15 57.84	10.83	IV.	6	8.46	28 23.3	9.4	15 47.01	34 22.7
63	9	. .	. .	. .	. .	23.8	. .	54.2	19 16 8.74	— 10.83	VI.	8	3.34	−35 45.9	— 9.4	19 15 57.91	— 34 41 45.3

ZONE 21. MAY 21. A. D₀ = −38° 24′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	41.5	57.6	13.8	14 30 25.58	— 11.72	VII.	6	10.51	−29 26.5	— 63.3	14 30 13.86	— 38 54 49.8
2	9	36.1	52.5	8.6	24.6	40.7	56.6	12.5	34 24.51	11.68	I.	5	8.	23 57.4	63.0	34 12.83	49 20.4
3	11	44.2	0.0	16.8	32.7	48.6	4.5	21.0	41 32.52	11.59	VII.	4	11.20	20 37.9	62.5	41 20.93	38 46 0.4
4	10	16.5	32.8	48.8	5.2	21.0	37.0	53.2	47 5.03	11.53	VII.	7	13.6	35 36.8	62.1	46 53.50	39 0 58.9
5	9	. .	. .	25.0	41.0	57.2	12.9	. .	14 50 41.03	11.48	III.	10	4.42	46 25.6	61.8	14 50 29.55	11 47.4
6	9	. .	. .	45.0	1.2	17.0	33.0	49.2	15 7 1.07	11.33	VII.	9	1.30	34 44.2	60.3	15 6 49.74	0 4.5
7	7	. .	. .	. .	10.0	26.0	41.6	57.5	15 9.72	11.25	VI.	9	11.45	44 57.2	59.5	14 58.47	39 10 16.7
8	8	. .	. .	26.8	42.9	58.8	14.5	30.9	24 42.69	11.16	VII.	5	9.56	24 56.1	58.4	24 31.53	38 50 14.5
9	9	. .	24.5	40.5	56.0	. .	. .	. .	27 56.10	11.14	III.	2	9.57	9 54.9	58.1	27 44.96	35 13.0
10	8	. .	. .	. .	9.5	25.0	41.5	. .	29 53.26	11.13	IV.	3	9.10	14 31.9	57.9	28 42.13	39 49.8
11	10	17.8	34.7	50.7	7.2	. .	. .	. .	34 6.76	11.06	IV.	7	8.43	33 24.1	57.3	33 55.70	38 58 41.4
12	11	. .	. .	. .	32.0	48.0	4.0	20.0	42 31.94	10.98	VII.	8	8.	38 1.0	56.3	42 20.96	39 3 17.3
13	8	. .	. .	. .	. .	14.5	30.5	46.8	50 58.53	10.95	VI.	3	8.15	14 3.8	55.1	50 47.58	38 39 18.9
14	9	. .	. .	37.5	53.5	9.1	25.2	41.2	54 53.26	10.88	VII.	8	3.30	35 45.1	54.6	54 42.38	39 0 59.7
15	10	. .	. .	. .	. .	58.0	14.0	30.0	56 41.94	10.87	VII.	6	3.25	25 40.4	54.4	56 31.07	38 50 54.8
16	8	. .	. .	. .	. .	59.5	15.0	31.5	15 58 43.27	10.85	VII.	4	3.30	16 39.5	54.1	15 58 32.42	41 53.6
17	10	1.5	17.5	34.0	49.5	6.0	. .	. .	16 4 49.67	10.80	V.	4	8.49	19 21.9	53.2	16 4 38.87	38 44 35.1
18	8	47.0	3.5	19.5	35.8	51.5	7.8	23.7	10 35.67	10.73	VII.	8	8.54	38 29.5	52.3	10 24.94	39 3 41.8
19	7	. .	. .	47.5	3.4	19.4	35.4	51.7	14 3.41	10.71	VII.	6	9.53	24 56.0	51.8	13 52.70	38 50 7.8
20	7	55.0	11.3	27.4	43.7	59.5	15.7	31.8	16 36 43.61	10.52	VII.	8	12.35	40 21.5	48.2	16 36 33.15	39 5 29.7
21	7	. .	. .	53.3	9.5	25.2	41.1	57.6	17 2 9.19	10.36	VII.	3	5.48	12 48.9	43.9	17 1 58.83	38 37 52.8
22	11	. .	. .	. .	51.0	6.8	22.8	40.0	4 51.06	10.33	VII.	5	1.56	20 52.8	43.4	4 40.73	45 56.2
23	10	. .	36.5	. .	8.5	24.7	40.2	56.8	21 8.51	10.21	VII.	6	9.41	28 51.0	40.4	20 58.30	53 51.4
24	9	7.8	24.2	40.2	56.3	12.1	28.2	44.5	24 56.17	10.19	VI.	5	3.36	21 43.8	39.7	24 45.98	46 43.5
25	6	. .	. .	. .	. .	. .	. .	12.0	26 23.62	10.19	VII.	2	3.36	6 10.8	39.4	26 13.43	31 10.2
26	12	. .	. .	16.5	32.0	48.5	. .	. .	17 57 32.24	10.00	IV.	6	6.17	27 8.2	33.3	17 57 22.24	38 52 1.5
27	9	. .	. .	. .	. .	1.0	16.5	32.0	18 2 44.49	9.97	VII.	9	14.14	46 12.5	32.3	18 2 34.52	39 11 4.8
28	8	. .	29.0	45.2	1.0	17.0	33.0	49.5	11 1.17	9.93	VII.	9	2.	40 0.2	30.6	10 51.24	39 4 50.8
29	8	. .	. .	8.5	24.5	40.5	56.5	12.8	13 24.49	9.92	VII.	7	3.7	30 33.0	30.1	13 14.57	38 55 23.1
30	10	33.0	50.2	6.0	22.0	. .	. .	. .	18 21.94	9.89	IV.	7	6.40	32 21.6	29.1	18 12.05	57 10.7
31	8	. .	. .	. .	5.0	21.0	37.5	53.0	18 19 5.04	— 9.88	VI.	7	5.19	−31 40.2	— 29.0	18 18 55.16	— 38 56 29.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
May 21,	11	— 22.36	+ 0.015	— 0.280	+ 0.344	+ 0.120

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 21	May 21,		30.120	67.	58.

REMARKS.

(21) 6. Micrometer thread assumed as 8 instead of 9.
(21) 10. Transits over T.'s V–VII assumed to have been recorded as over T.'s IV–VI.
(21) 19. Micrometer thread assumed as 5 instead of 6.
(21) 25. Micrometer reading assumed as 2ʳ.36 instead of 3ʳ.36.

ZONE 21. MAY 21. A. $D_\circ = -38° 24' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.		a_1	MICROMETER.				$i + d_2$		d_1	Mean Right Ascension, 1850.0.		Mean Declination, 1850.0.
									h. m. s.		s.			r.	′ ″		″	h. m. s.		° ′ ″
32	7	23.5	40.2	56.2	12.6	28.3	44.5	0.5	18 23 12.26	—	9.87	I.	5	9.18	−24 36.9	—	28.1	18 23 2.39	—	38 49 25.0
33	6	. .	. .	39.3	55.5	11.0	27.8	. .	33 39.60		9.88	VII.	2	. .	5		26.0	33 29.72		
34	11	19.0	35.0	51.5	8.0	23.5	. .	. .	45 7.39		9.76	V.	4	11.50	20 53.6		23.7	44 57.63		38 45 37.3
35	9	. .	. .	. .	55.0	11.0	27.0	43.0	46 54.93		9.75	VII.	8	4.51	41 26.9		23.3	46 45.18		39 6 10.2
36	6	. .	. .	. .	13.0	29.2	44.8	1.0	18 53 12.89		9.73	VI.	1	6.41	3 14.7		22.0	18 53 3.16		38 27 56.7
37	11	. .	. .	. .	2.0	18.5	34.0	50.5	19 3 2.17	—	9.67	VII.	7	3.55	−30 57.3	—	20.0	19 2 52.50	—	38 55 37.3

ZONE 22. MAY 25. A. $D_\circ = -36° 31' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.		a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.		Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	. .	36.5	14 48 49.44	—	6.26	VII.	4	5.45	−17 48.7	. .	14 48 43.18		
2	9	. .	. .	. .	40.2	56.8	11.8	27.5	15 12 40.61		6.12	VII.	7	9.24	33 43.5	. .	15 12 34.49		
3	11	. .	. .	. .	. .	56.0	12.0	28.0	18 40.74		6.09	VII.	4	6.25	18 8.9	. .	18 34.65		
4	7	. .	28.9	44.8	0.5	16.0	. .	. .	33 0.28		5.97	V.	5	9.2	24 29.4	. .	32 54.31	—	36 56
5	9	5.7	21.9	37.6	53.2	. .	. .	. .	41 53.01		5.90	IV.	5	6.1	22 57.8	. .	41 47.11		
6	9	. .	. .	54.0	9.6	25.5	40.8	56.5	43 9.59		5.89	VII.	5	9.36	24 46.1	. .	43 3.70		
7	11	. .	. .	. .	. .	. .	. .	57.5	45 10.59		5.86	VII.	7	6.52	32 26.5	. .	45 4.73		
8	7	58.6	14.5	30.3	46.1	. .	. .	. .	48 45.89		5.83	IV.	7	6.23	32 12.4	. .	48 40.06		
9	10	. .	. .	. .	. .	52.5	8.2	23.8	49 36.94		5.82	VII.	7	9.35	33 49.0	. .	49 31.12		
10	9	25.2	41.2	56.9	12.7	. .	. .	. .	52 12.54		5.81	IV.	7	11.22	34 43.8	. .	52 6.73		
11	8	. .	. .	22.5	37.9	53.6	. .	. .	53 37.79		5.83	V.	2	11.39	10 47.8	. .	53 31.96		
12	11	. .	. .	52.3	7.6	23.5	. .	. .	56 7.62		5.80	V.	3	11.39	15 48.2	. .	56 1.82		
13	11	. .	. .	28.0	43.5	0.0	. .	. .	15 59 43.31		5.77	V.	3	9.41	14 48.4	. .	15 59 37.54		
14	7	28.2	44.1	0.2	15.6	. .	. .	. .	16 13 15.48		5.66	III.	6	6.24	32 11.5	. .	16 13 9.82		
15	6	. .	. .	22.3	38.0	53.6	. .	. .	14 37.90		5.63	V.	8	3.55	40 56.4	. .	14 32.27		
16	7	34.0	50.0	6.0	21.2	. .	. .	. .	18 21.16		5.63	IV.	4	7.14	18 34.3	. .	18 15.53		
17	10	44.5	0.5	16.2	. .	. .	. .	. .	23 31.68		5.59	III.	5	7.24	23 39.8	. .	23 26.09		
18	8	. .	. .	. .	. .	1.0	16.5	32.2	23 45.34		5.57	VII.	7	5.46	31 53.1	. .	23 39.77		
19	11	. .	29.3	44.8	0.5	. .	. .	. .	26 0.45		5.56	IV.	7	4.34	31 17.2	. .	25 54.89		
20	9	. .	. .	. .	58.5	14.0	29.8	45.5	26 58.46		5.57	VII.	4	6.12	18 2.4	. .	26 52.89		
21	6	. .	. .	. .	9.5	25.0	40.2	56.1	29 9.22		5.55	VII.	5	6.1	22 57.2	. .	29 3.67		
22	8	. .	. .	. .	50.3	5.9	21.5	37.3	30 50.28		5.55	VII.	4	9.16	19 35.5	. .	30 44.73		
23	8	. .	. .	. .	33.0	48.8	4.0	20.0	32 32.95		5.53	VII.	3	10.33	15 14.3	. .	32 27.42		
24	8	52.2	8.0	23.9	39.6	. .	. .	. .	38 39.38		5.48	IV.	6	5.44	26 51.3	. .	38 33.90		
25	7	. .	. .	. .	59.5	15.0	30.5	46.0	40 59.31		5.45	VII.	9	8.35	43 19.1	. .	40 53.86		
26	7	. .	. .	. .	. .	. .	49.0	4.8	16 56 17.87		5.35	VII.	6	10.42	29 21.7	. .	16 56 12.52		
27	9	. .	. .	. .	. .	. .	15.5	30.5	17 2 44.01		5.28	VII.	9	11.24	44 44.6	. .	17 2 38.73		
28	10	. .	. .	15.5	31.2	46.8	2.5	. .	7 31.16		5.26	VI.	7	9.53	33 58.5	. .	7 25.90		
29	9	. .	. .	. .	. .	26.0	41.7	57.2	9 10.44		5.25	VII.	8	12.	40 2.5	. .	9 5.19		
30	9	37.2	53.1	. .	. .	. .	. .	. .	16 24.39		5.22	II.	6	5.51	26 54.6	. .	16 19.17		
31	10	. .	. .	20.5	. .	. .	. .	. .	17 36.09		5.20	III.	7	5.18	31 39.4	. .	17 30.89		
32	8	. .	. .	. .	53.0	8.5	23.8	39.5	18 52.69		5.24	VII.	2	4.58	7 24.3	. .	18 47.45		
33	5	. .	. .	. .	. .	55.2	10.7	26.5	20 39.59		5.18	VII.	8	9.30	38 46.5	. .	20 34.41		
34	3	43.5	59.5	. .	. .	. .	. .	. .	23 30.75		5.18	II.	6	7.54	27 56.9	. .	23 25.57		
35	9	. .	. .	. .	. .	59.5	. .	31.0	39 44.00		5.09	VII.	7	8.30	33 16.1	. .	38 38.91		
36	8	20.8	36.8	52.5	8.0	. .	. .	. .	43 8.03		5.08	IV.	7	4.17	31 8.6	. .	43 2.95		
37	8	2.0	17.8	33.5	. .	. .	. .	. .	45 49.15		5.07	III.	7	3.6	30 32.6	. .	45 44.08		
38	7	2.2	18.0	34.0	. .	. .	. .	. .	48 49.29		5.09	III.	4	8.12	19 3.6	. .	48 44.20		
39	9	. .	. .	. .	. .	22.5	38.2	54.0	17 49 7.00	—	5.08	VII.	5	8.12	−24 3.6	. .	17 49 1.92		

CORRECTIONS.

Date.		Corr. of Clock.		Hourly rate.		m		n		c
1846.	h.		s.		s.		s.		s.	s.
May 25,	11	—	16.80	—	0.042	—	0.280	+	0.344	+ 0.120

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(21) 33. Assumed to be λ Coronæ, and the transits to have been over T'.s IV–VII.
(21) 35. Micrometer thread assumed as 9 instead of 8.
(22) 14. Micrometer assumed as 7 $6^r.24$ instead of 6 $6^r.24$.
(22) 15. Micrometer assumed as 9 $3^r.55$ instead of 8 $3^r.55$.

Zone 22. May 25. A. $D_0 = -36^\circ\ 31'\ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
40	9	. .	. .	. .	. .	. .	4.0	19.5	17 50 32.72	— 5.07	VII.	5	12.	—25 59.0	. .	17 50 27.65	
41	10	13.8	29.6	45.5	1.0	. .	. .	. .	55 0.91	5.05	IV.	5	9.18	24 37.6	. .	54 55.86	
42	9	. .	28.0	44.0	59.5	15.0	. .	. .	56 59.19	5.07	V.	1	11.47	5 51.7	. .	56 54.12	
43	10	. .	. .	54.8	10.3	26.0	. .	. .	17 59 10.27	5.02	V.	6	7.58	27 59.2	. .	17 59 5.25	
44	9	. .	. .	. .	. .	36.2	52.0	7.5	18 0 20.71	5.00	VII.	9	8.59	43 31.2	. .	18 0 15.71	
45	11	. .	50.0	5.5	21.0	37.0	. .	. .	3 21.02	5.03	V.	3	9.26	14 56.2	. .	3 15.99	
46	9	. .	. .	. .	32.5	48.2	3.5	19.1	4 32.35	5.01	VII.	5	10.	24 58.3	. .	4 27.34	
47	3	. .	. .	18.2	33.9	49.2	4.5	20.5	7 33.51	5.01	VII.	3	4.35	16 27.9	. .	7 28.50	
48	9	47.0	3.0	18.7	34.5	. .	. .	. .	10 34.20	5.00	IV.	4	7.54	18 54.6	. .	10 29.20	
49	7	. .	. .	33.0	48.4	4.0	19.3	35.2	12 48.25	4.99	VII.	3	6.15	13 3.6	. .	12 43.26	
50	8	. .	. .	. .	52.5	8.0	24.0	39.5	18 14 52.53	— 4.96	VII.	6	6.45	—27 21.7	. .	18 14 47.57	

Zone 23. May 27. K. $D_0 = -37^\circ\ 50'\ 27''$.

1	10	. .	7.1	. .	. .	. .	. .	. .	15 15 38.99	— 9.68	IV.	7	5.24	—31 42.8	. .	15 15 29.31	
2	6	. .	. .	. .	. .	. .	18.8	35.0	15 47.14	9.69	VII.	5	2.56	21 23.3	. .	15 37.45	
3	10	. .	53.8	9.7	. .	. .	. .	. .	18 25.37	9.68	III.	4	3.32	16 41.4	. .	18 15.69	
4	10	. .	. .	. .	. .	. .	19.5	. .	18 47.69	9.64	V.	9	2.42	40 21.5	. .	18 38.05	
5	6	. .	. .	. .	. .	0.8	16.3	. .	19 44.76	9.66	V.	4	2.14	16 1.9	. .	19 35.10	
6	9	. .	. .	. .	. .	. .	4.1	. .	20 32.52	9.65	V.	3	6.50	13 21.2	. .	20 22.87	
7	7	. .	. .	13.1	. .	44.7	. .	. .	22 28.71	9.64	IV.	3	11.37	15 46.8	. .	22 19.07	
8	10	. .	. .	. .	. .	6.3	22.0	. .	24 50.28	9.59	VII.	10	4.9	46 7.5	. .	24 40.69	
9	10	. .	. .	. .	36.4	52.3	. .	. .	26 36.30	9.59	VI.	7	2.5	30 1.7	. .	26 26.71	
10	9	. .	. .	. .	. .	10.1	26.2	. .	27 54.28	9.57	VII.	10	1.44	44 54.0	. .	27 44.71	
11	9	. .	58.5	14.6	. .	. .	. .	. .	30 30.27	9.57	III.	5	5.9	22 31.3	. .	30 20.70	
12	10	. .	41.1	. .	13.1	. .	. .	. .	15 39 12.84	— 9.51	IV.	4	6.48	—18 20.8	. .	15 39 3.33	

Zone 24. May 27. K. $D_0 = -37^\circ\ 47'\ 40''$.

1	5	. .	. .	. .	. .	40.0	55.7	. .	15 59 24.07	— 9.35	VII.	4	11.6	—20 31.0	. .	15 59 14.72	
2	11	. .	. .	6.3	. .	. .	. .	. .	16 1 22.37	9.30	III.	9	5.0	41 31.4	. .	16 1 13.07	
3	9	57.8	13.9	29.9	. .	. .	. .	. .	7 46.05	9.46	IV.	9	10.6	44 6.6	. .	7 36.59	
4	11	29.5	. .	. .	. .	. .	. .	. .	10 17.53	9.26	III.	5	10.58	25 28.2	. .	10 8.27	
5	10	. .	. .	. .	. .	. .	53.2	9.3	10 21.00	9.25	VII.	8	8.47	38 25.4	. .	10 11.75	
6	11	. .	. .	51.9	. .	. .	. .	. .	14 7.82	9.22	III.	7	9.00	33 32.2	. .	13 58.60	
7	11	. .	50.3	. .	. .	. .	. .	. .	16 22.41	9.20	III.	9	9.59	44 3.1	. .	16 13.20	
8	10	. .	. .	. .	. .	6.5	. .	. .	16 50.50	9.23	VI.	2	7.38	8 44.7	. .	16 41.27	
9	10	1.0	17.4	33.5	. .	. .	. .	. .	20 49.38	9.17	IV.	8	8.34	38 19.4	. .	20 40.21	
10	10	39.6	55.7	. .	. .	. .	. .	. .	23 27.29	9.19	III.	2	8.45	9 19.0	. .	23 18.10	
11	10	. .	. .	. .	22.3	. .	. .	. .	24 22.13	9.18	IV.	1	7.32	3 41.6	. .	24 12.95	
12	11	. .	. .	58.9	. .	. .	. .	. .	30 14.95	9.10	V.	9	3.49	40 55.4	. .	30 5.85	
13	9	. .	12.7	28.6	44.3	. .	. .	. .	33 44.10	9.12	IV.	2	2.9	5 58.4	. .	33 34.98	
14	10	. .	. .	40.0	55.7	. .	. .	. .	16 42 55.55	— 9.05	IV.	3	10.33	—15 14.2	. .	16 42 46.50	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
May 27, - 12	— 20.36	— 0.054	— 0.366	+ 0.292	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 23	May 27,	29.482	77.8	75.0

REMARKS.

(22) 47. Micrometer probably 4 $3^{\mathrm{r}}.35$.

ZONE 25. JUNE 3. K. $D_0 = -30° 22' 30''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	10	. .	. .	54.3	8.8	. .	. .	. .	16 27 8.66	— 20.41	V.	5	5.55	—22 55.0	— 54.8	16 26 48.25	— 30 46 19.8
2	10	. .	. .	. .	. .	. .	. .	7.0	27 23.30	20.41	VII.	6	5.38	26 47.6	54.7	27 2.89	50 12.3
3	10	. .	. .	. .	28.5	. .	57.3	. .	29 28.	20.41	.	.	. .	. . .	. .	29 8.	
4	8	. .	. .	. .	31.4	46.1	. .	. .	31 31.35	20.41	V.	2	6.59	8 28.1	53.7	31 10.94	30 31 51.8
5	8	10.2	24.8	. .	. .	. .	. .	. .	33 54.16	20.36	III.	8	11.32	39 46.9	53.1	33 33.80	31 3 10.0
6	8	. .	. .	. .	19.9	34.5	. .	. .	34 19.84	20.37	V.	7	7.39	32 49.8	53.0	33 59.47	30 56 12.8
7	8	. .	. .	. .	. .	. .	25.8	. .	34 56.88	20.39	VI.	4	9.38	19 47.7	52.9	34 36.49	30 43 10.6
8	8	. .	. .	. .	. .	. .	19.3	. .	35 50.26	20.35	VI.	9	6.41	42 19.4	52.7	35 29.91	31 5 42.1
9	7	. .	. .	22.3	. .	51.7	. .	. .	37 37.13	20.34	IV.	10	6.14	47 7.6	52.2	37 16.79	31 10 29.8
10	7	. .	55.3	9.8	24.3	. .	. .	. .	39 9.70	20.35	IV.	7	6.49	32 24.6	51.8	38 49.35	30 55 46.4
11	10	4.3	19.1	. .	. .	. .	. .	. .	42 48.28	20.34	III.	7	7.24	32 42.2	50.9	42 27.94	30 56 3.1
12	9	. .	. .	. .	6.0	. .	. .	.	43 5.84	20.32	V.	10	1.35	44 46.5	50.8	42 45.52	31 8 7.3
13	9	. .	23.5	38.3	. .	. .	. .	. .	44 52.40	20.36	III.	2	3.11	6 32.8	50.4	44 32.04	30 29 53.2
14	8	. .	. .	31.5	. .	. .	. .	. .	45 45.73	20.35	V.	4	0.37	15 14.4	50.1	45 25.38	38 34.5
15	9	. .	. .	. .	. .	. .	. .	35.7	45 52.10	20.32	V.	8	2.4	34 59.9	50.1	45 31.78	30 58 20.0
16	8	. .	. .	. .	. .	. .	. .	44.1	47 0.56	20.30	V.	9	2.33	40 14.2	49.8	46 40.26	31 3 34.0
17	9	. .	51.0	5.8	. .	. .	. .	. .	49 19.99	20.34	III.	3	6.12	13 4.1	49.3	48 59.65	30 36 23.4
18	9	. .	45.3	. .	14.4	. .	. .	. .	50 14.37	20.31	IV.	7	10.3	34 2.6	49.0	49 54.06	57 21.6
19	10	34.1	. .	3.6	. .	. .	. .	. .	52 17.75	20.33	III.	2	5.24	7 40.1	48.5	51 57.42	30 58.6
20	8	. .	. .	. .	. .	48.3	. .	17.3	52 33.58	20.33	VII.	2	7.36	9 46.9	48.4	52 13.25	33 5.3
21	9	. .	. .	. .	. .	. .	. .	16.9	53 33.20	20.31	VII.	6	5.48	26 52.7	48.2	53 12.89	30 50 10.9
22	8	. .	. .	. .	28.1	. .	. .	. .	55 27.94	20.27	V.	10	3.4	45 31.5	47.7	55 7.67	31 3 49.2
23	10	. .	29.3	. .	. .	. .	. .	. .	57 58.47	20.28	IV.	7	6.3	32 1.4	47.1	57 38.19	30 55 18.5
24	7	. .	. .	. .	26.4	. .	55.4	. .	16 58 26.33	20.29	VI.	6	9.51	28 55.7	46.9	16 58 6.04	52 12.6
25	8	5.3	20.0	. .	. .	. .	. .	. .	17 0 49.01	20.30	III.	3	10.14	15 6.4	46.3	17 0 28.71	38 22.7
26	9	. .	. .	. .	. .	. .	. .	36.2	2 52.33	20.29	VII.	3	3.30	11 41.8	45.8	2 32.04	30 34 57.6
27	8	. .	14.7	44.1	. .	. .	. .	. .	43.96	20.29	IV.	9	13.3	45 32.7	45.0	5 23.67	31 8 47.7
28	9	5.2	20.0	. .	. .	. .	. .	. .	7 48.95	20.28	IV.	3	4.44	12 19.7	44.5	7 28.67	30 35 34.2
29	10	. .	. .	. .	26.4	. .	. .	9.8	8 26.09	20.28	VII.	3	5.23	12 38.9	44.3	8 5.81	35 53.2
30	8	. .	. .	. .	. .	55.4	. .	. .	9 40.85	20.24	VII.	7	8.55	33 27.8	44.0	9 20.61	56 41.8
31	8	. .	. .	. .	. .	. .	. .	24.7	40.7	20.							
32	10	. .	. .	39.2	. .	. .	. .	. .	11 53.75	20.23	IV.	7	11.7	34 35.0	43.4	11 33.52	30 57 48.4
33	8	. .	32.3	. .	2.0	. .	. .	. .	13 1.73	20.21	IV.	9	12.36	45 19.0	43.1	12 41.52	31 8 32.1
34	10	. .	. .	. .	20.6	. .	. .	. .	14 20.44	20.22	V.	7	5.14	31 36.5	42.8	14 0.22	30 54 49.3
35	8	51.9	6.6	. .	. .	. .	. .	. .	17 35.85	20.21	III.	7	10.0	34 1.1	41.9	17 15.64	30 57 13.0
36	7	7.4	. .	36.7	. .	. .	. .	. .	18 51.41	20.19	III.	9	4.32	41 14.4	41.6	18 31.22	31 4 26.0
37	7	. .	. .	. .	26.3	. .	55.1	. .	19 26.14	20.21	VII.	5	9.42	24 49.3	41.4	19 5.93	30 48 0.7
38	11	53.7	. .	. .	. .	. .	. .	. .	23 37.73	20.17	I.	8	5.6	36 31.5	40.3	23 17.56	59 41.8
39	11	. .	. .	46.9	. .	. .	. .	. .	24 1.47	20.17	IV.	8	3.21	35 38.9	40.2	23 41.30	58 49.1
40	10	. .	. .	32.3	. .	1.5	. .	. .	24 46.90	20.17	IV.	7	10.10	34 6.2	40.0	24 26.73	57 16.2
41	9	. .	. .	40.6	. .	. .	. .	. .	26 54.66	20.22	IV.	1	6.9	3 3.1	39.4	26 34.44	26 12.5
42	8	47.2	. .	16.8	. .	. .	. .	. .	28 31.14	20.18	IV.	5	10.56	25 27.2	39.0	28 10.96	48 36.2
43	10	18.3	33.3	. .	. .	. .	. .	. .	29 2.23	20.19	III.	4	10.47	20 22.7	38.9	28 42.04	30 43 31.6
44	10	. .	50.0	. .	14.3	. .	. .	. .	19.05	20.16	IV.	3	10.6	15 2.4	37.8	32 58.89	31 38 10.2
45	10	. .	29.5	. .	. .	. .	. .	. .	35 58.75	20.14	III.	8	10.50	39 25.7	37.0	35 38.61	30 2 32.7
46	9	. .	. .	. .	. .	. .	37.7	. .	36 8.69	20.14	VII.	8	4.7	36 1.7	37.0	35 48.55	30 59 8.7
47	8	30.4	45.3	. .	. .	. .	. .	. .	38 14.58	20.13	IV.	10	1.5	44 31.4	36.4	37 54.45	31 7 37.8
48	10	. .	. .	. .	. .	50.0	. .	. .	38 35.43	20.15	VII.	6	6.13	27 5.3	36.3	38 15.28	30 50 11.6
49	6	. .	. .	43.2	. .	12.0	. .	. .	17 39 57.36	— 20.17	IV.	2	8.29	— 9 13.6	— 35.9	17 39 37.19	— 30 32 19.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
June 3,	12	— 31.03	— 0.054	— 0.366	+ 0.272	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(25) 10. Transits over T.'s III–V assumed as recorded over T.'s II–IV.
(25) 20. Micrometer reading assumed as 9r.36 instead of 7r.36.
(25) 27. Transit over T. IV assumed as recorded over T. III, and minutes to have been 5.
(25) 44. Transit over T. IV assumed as 19s.3, not 14s.3, and minutes as 33.

ZONE 25. JUNE 3. K. $D_0 = -30° 22' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	2.6	. .	. .	17 40 48.05	— 20.14	VI.	7	4.40	—31 19.2	— 35.7	17 40 27.91	— 30 54 24.9
51	9	. .	. .	. .	. .	. .	58.7	. .	41 29.72	20.14	VII.	7	4.16	31 6.7	35.5	41 9.58	54 12.2
52	9	. .	. .	. .	. .	. .	. .	27.4	41 43.76	20.14	VII.	7	6.14	32 6.5	33.5	41 23.62	55 12.0
53	10	3.8	. .	. .	. .	. .	. .	. .	44 47.70	20.14	III.	6	5.16	26 36.9	34.6	44 27.57	49 41.5
54	9	. .	. .	. .	. .	5.8	. .	. .	44 51.23	20.14	VI.	6	4.34	26 15.5	34.6	44 31.09	49 20.1
55	8	. .	. .	. .	. .	11.0	. .	. .	45 56.37	20.16	V.	3	1.56	10 54.7	34.3	45 36.21	33 59.0
56	6	. .	. .	. .	. .	. .	. .	9.6	46 25.70	20.16	VII.	2	8.31	9 14.2	34.2	46 5.54	32 18.4
57	10	. .	. .	. .	. .	10.0	. .	. .	47 55.39	20.15	IV.	3	9.12	14 34.1	33.8	47 35.24	30 37 37.9
58	10	. .	. .	. .	23.6	. .	. .	. .	49 23.44	20.10	IV.	9	9.6	43 32.9	33.4	49 3.34	31 6 36.3
59	10	. .	. .	. .	. .	17.8	. .	. .	50 3.18	20.15	IV.	3	8.37	14 24.5	33.2	49 43.03	30 37 27.7
60	9.10	. .	. .	. .	14.7	. .	. .	. .	51 14.54	20.10	IV.	9	5.11	41 34.1	32.9	50 54.44	31 4 37.0
61	8	41.2	. .	. .	. .	. .	. .	. .	53 25.21	20.11	III.	7	11.17	34 40.0	32.3	53 5.10	30 57 42.3
62	8	. .	. .	. .	37.6	. .	. .	. .	53 37.44	20.11	V.	7	11.13	34 38.0	32.2	53 17.33	57 40.2
63	8	. .	. .	. .	. .	. .	. .	29.3	53 45.56	20.12	VII.	5	7.13	23 34.0	32.2	53 25.44	46 36.2
64	9	. .	. .	. .	. .	44.7	. .	. .	55 30.07	20.14	VI.	2	11.27	10 43.4	31.7	55 9.97	33 45.1
65	9	. .	. .	. .	. .	. .	41.0	. .	56 12.03	20.11	VII.	6	6.57	27 27.5	31.5	55 51.92	50 29.0
66	9	. .	. .	. .	. .	. .	0.8	. .	57 31.90	20.12	VI.	4	12.36	21 17.6	31.2	57 11.78	30 44 18.8
67	8	. .	. .	. .	. .	. .	10.1	. .	17 58 41.08	20.08	VII.	8	7.40	37 49.3	30.8	17 58 21.00	31 0 50.1
68	5	. .	16.3	. .	45.7	. .	. .	. .	18 0 45.45	20.10	IV.	5	3.37	21 45.3	30.3	18 0 25.35	30 44 45.6
69	9	. .	. .	28.7	. .	. .	. .	. .	3 43.26	20.07	VII.	7	13.15	35 39.2	29.5	3 23.19	58 38.7
70	8	. .	. .	58.1	. .	26.9	. .	. .	7 12.20	20.12	IV.	1	7.48	3 53.2	28.5	6 52.08	26 51.7
71	11	. .	33.5	. .	. .	. .	. .	. .	9 2.57	20.08	III.	5	5.22	22 38.3	28.0	8 42.49	45 36.3
72	10	. .	19.3	. .	. .	. .	. .	. .	11 48.33	20.09	II.	4	8.8	19 2.2	27.3	11 28.24	30 41 59.5
73	5	. .	. .	. .	. .	9.9	24.6	. .	11 55.47	20.06	VII.	8	6.14	37 5.9	27.2	11 35.41	31 0 3.1
74	7	. .	35.4	. .	. .	. .	. .	. .	15 4.47	20.07	III.	5	5.49	22 52.0	26.4	14 44.40	30 45 48.4
75	4.5	. .	. .	. .	43.0	. .	11.8	. .	15 42.84	20.06	V.	6	5.25	26 41.4	26.2	15 22.78	49 37.6
76	7	. .	. .	8.1	. .	. .	. .	. .	17 22.18	20.10	V.	1	10.38	5 19.1	25.7	17 2.08	30 28 14.8
77	9	14.8	. .	. .	. .	. .	. .	. .	20 58.87	20.04	II.	8	12.37	40 19.7	24.8	20 38.83	31 3 14.5
78	9	. .	. .	0.2	14.6	. .	. .	. .	21 14.58	20.04	V.	7	6.37	32 18.5	24.7	20 54, 54	30 55 13.2
79	10	. .	. .	. .	21.9	. .	. .	. .	22 21.74	20.04	IV.	8	6.58	37 28.5	24.4	22 1.70	31 0 22.9
80	9	. .	. .	19.3	. .	. .	. .	. .	23 33.98	20.02	III.	9	7.44	42 51.4	24.1	23 13.96	31 5 45.5
81	7	. .	26.8	. .	. .	. .	. .	. .	24 56.02	20.03	III.	8	5.00	36 28.8	23.7	24 35.99	30 59 22.5
82	9	. .	. .	20.9	. .	. .	. .	. .	25 35.35	20.04	IV.	6	7.7	27 33.0	23.5	25 15.31	50 26.5
83	8	22.3	. .	. .	. .	. .	. .	. .	28 6.00	20.03	II.	6	12.45	30 23.6	22.8	27 45.97	53 16.4
84	10	. .	43.8	. .	. .	. .	. .	. .	29 13.02	20.02	III.	8	5.00	36 28.8	22.6	28 53.00	59 21.4
85	8	. .	. .	. .	34.0	. .	. .	. .	29 33.84	20.05	IV.	4	0.52	15 22.1	22.4	29 13.79	38 14.5
86	8	. .	13.3	. .	42.6	. .	. .	. .	31 42.37	20.05	IV.	4	3.30	16 41.9	22.9	31 22.32	30 39 34.8
87	10	. .	29.6	. .	. .	. .	. .	. .	37 58.83	20.00	III.	8	8.8	38 3.9	21.2	37 38.83	31 0 55.1
88	9	. .	24.8	. .	. .	. .	. .	. .	38 53.71	20.04	II.	2	6.8	8 2.2	20.9	38 33.67	30 30 53.1
89	10	. .	. .	26.9	. .	. .	. .	. .	39 41.30	20.02	V.	5	9.4	24 30.5	20.7	39 21.28	47 21.2
90	9	. .	. .	. .	. .	. .	33.3	. .	40 4.39	20.04	VII.	3	10.23	15 10.5	19.6	39 44.35	30 38 0.1
91	8	. .	. .	. .	38.8	. .	. .	. .	41 38.64	19.99	IV.	9	11.47	44 54.3	19.2	41 18.65	31 7 43.5
92	10	. .	. .	. .	54.9	. .	. .	. .	42 54.74	20.00	IV.	7	12.20	35 11.9	18.9	42 34.74	30 58 0.8
93	6	. .	. .	. .	. .	38.0	52.5	. .	43 23.48	20.00	VII.	7	5.20	31 39.2	18.7	43 3.48	30 54 27.9
94	10	. .	42.0	. .	. .	. .	. .	. .	47 11.28	19.98	III.	9	6.21	42 9.5	17.7	46 51.30	31 4 57.2
95	6	4.4	19.3	. .	. .	. .	. .	. .	48 48.49	19.99	IV.	8	8.30	38 15.0	17.3	48 28.50	31 1 2.3
96	9	. .	. .	. .	. .	36.1	. .	. .	49 21.57	19.99	VI.	8	4.57	36 27.2	17.1	49 1.58	30 59 14.3
97	9	20.4	35.0	. .	. .	. .	. .	. .	53 4.43	19.97	IV.	10	4.00	45 59.8	16.2	52 44.46	31 8 46.0
98	9	. .	. .	. .	. .	55.4	. .	. .	18 52 40.77	— 20.03	V.	3	1.17	—10 35.0	— 16.3	18 53 20.74	— 30 33 21 3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(25) 84. Differs from Transit, 1847, May 28, 14^s.05 (one transit T.) in right ascension.
(25) 98. Minutes assumed as 53 instead of 52.

ZONE 25. JUNE 3. K. $D_\circ=-30° 22' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
99	9	8.1	. .	. .	. .	. .	. .	. .	18 59 52.02	− 19.99	II.	6	9.27	−28 43.6	− 14.4	18 59 32.03	− 30 51 28.0
100	10	. .	. .	. .	8.7	. .	. .	. .	19 0 8.54	19.99	IV.	6	11.47	29 54.6	14.3	18 59 48.55	30 52 38.9
101	8	50.1	4.9	. .	. .	. .	. .	. .	5 34.19	19.96	III.	9	7.20	42 39.3	12.9	19 5 14.23	31 5 22.2
102	9	. .	23.8	. .	. .	. .	. .	. .	6 52.79	20.01	III.	3	9.0	14 29.0	12.6	6 32.78	30 37 11.6
103	7	. .	. .	. .	59.6	. .	28.2	. .	6 59.35	20.00	VI.	4	10.35	20 16.5	12.5	6 39.35	42 59.0
104	9	. .	. .	. .	29.7	. .	. .	. .	8 29.54	20.01	IV.	3	8.56	14 27.0	12.1	8 9.53	37 9.1
105	8	. .	11.2	. .	. .	. .	. .	. .	10 40.41	19.97	III.	7	12.23	35 13.4	11.6	10 20 44	57 55.0
106	9	. .	. .	. .	. .	. .	10.8	. .	10 41.84	20.00	VII.	4	12.30	21 14.3	11.6	10 21.84	43 55.9
107	9	40.0	. .	. .	. .	. .	. .	. .	14 23.68	20.01	II.	2	7.2	8 29.4	10.6	14 3.67	30 31 10.0
108	7	35.7	50.7	. .	. .	. .	. .	. .	15 19.88	19.96	III.	9	6.40	42 19.1	10.4	14 59.92	31 4 59.5
109	9	. .	51.3	. .	. .	. .	. .	. .	16 20.26	20.01	III.	3	4.49	12 22.1	10.1	16 0.25	30 35 2.2
110	8	43.4	58.3	. .	. .	. .	. .	. .	20 27.54	19.96	III.	9	7.31	42 44.8	9.1	20 7.58	31 5 23.9
111	6	. .	. .	38.0	52.6	. .	. .	. .	23 52.36	20.00	IV.	4	5.59	17 57.2	8.2	23 32.36	30 40 35.4
112	8	58.5	13.4	. .	. .	. .	. .	. .	28 42.32	20.01	III.	3	9.57	14 57.8	7.0	28 22.31	37 34.8
113	8	. .	13.9	. .	43.0	. .	. .	. .	19 29 42.86	− 20.01	V.	3	8.41	14 19.4	− 6.7	19 29 22.85	− 30 36 56.1

ZONE 26. JUNE 15. K. $D_\circ=-32° 55' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	7.3	. .	. .	. .	. .	. .	16 43 37.11	+ 33.93	III.	4	4.47	−17 19.5	− 37.6	16 44 11.04	− 33 13 47.1
2	8	. .	. .	. .	. .	21.0	. .	. .	44 6.01	33.93	V.	4	3.43	16 48.1	37.5	44 39.94	13 15.6
3	7	. .	. .	21.8	. .	. .	. .	. .	45 36.51	33.94	IV.	4	8.13	19 4.7	37.1	46 10.45	15 31.8
4	6	. .	. .	36.6	. .	. .	. .	. .	46 51.07	33.92	III.	1	9.1	4 29.4	36.8	47 24.99	0 56.2
5	7	. .	. .	. .	. .	12.7	. .	. .	47 57.74	33.95	VI.	5	11.28	25 43.1	36.5	48 31.69	22 9.6
6	8	. .	. .	. . .	. .	. .	10.3	. .	48 40.55	33.95	VII.	4	11.55	20 56.4	36.3	49 14.50	17 22.7
7	10	. .	. .	. .	41.9	. .	. .	. .	50 41.74	33.99	IV.	9	6.40	42 19.7	35.8	51 15.73	38 45.5
8	8	. .	. .	. .	. .	. .	58.2	. .	51 28.34	33.99	VI.	9	9.58	43 59.6	35.6	52 2.33	40 25.2
9	8	. .	. .	. .	. .	. .	. .	46.2	52 1.24	33.96	VII.	4	12.2	21 0.0	35.5	52 35.20	17 25.5
10	10	. .	. .	. .	43.8	. .	. .	. .	56 43.64	34.01	V.	8	3.35	35 46.3	34.3	57 17.65	32 10.6
11	9	. .	. .	41.0	. .	. .	. .	. .	57 56.09	34.02	V.	9	8.28	43 14.3	34.0	58 30.11	39 38.3
12	8	. .	. .	43.3	. .	. .	. .	. .	16 58 57.12	34.00	V.	5	13.00	26 29.8	33.7	16 59 31.12	22 53.5
13	9	. .	. .	48.3	. .	18.1	. .	. .	17 0 3.30	34.03	V.	9	6.40	42 19.6	33.4	17 0 37.33	38 43.0
14	8	. .	. .	. .	35.6	. .	. .	. .	1 35.44	34.01	VI.	6	9.26	28 43.2	33.0	2 9.45	25 6.2
15	8	. .	. .	. .	. .	53.2	. .	. .	2 39.29	34.02	VI.	7	8.4	33 2.6	32.7	3 12.31	29 25.3
16	8	. .	. .	. .	. .	. .	34.5	. .	3 4.82	33.99	VII.	3	5.48	12 51.1	32.6	3 38.81	9 13.7
17	6	. .	. .	39.9	. .	. .	. .	. .	4 54.71	34.02	IV.	5	11.30	25 44.4	32.2	5 28.73	22 6.6
18	7	. .	. .	. .	. .	40.2	. .	. .	5 25.31	34.04	VII.	8	6.22	37 10.3	32.0	5 59.35	33 32.3
19	9	. .	. .	18.2	. .	. .	. .	. .	7 32.95	34.03	IV.	5	4.16	22 4.9	31.5	8 6.98	18 26.4
20	.	. .	. .	5.1	. .	. .	. .	. .	20.	. .	.	.	. .	. . .	. .	8 54.	
21	8	. .	. .	. .	. .	34.9	. .	. .	8 19.92	34.02	V.	4	10.3	20 0.3	31.3	8 53.94	16 21.6
22	8	. .	3.8	. .	. .	. .	. .	. .	11 33.64	34.03	III.	4	8.21	19 9.7	30.4	12 7.67	15 30.1
23	8	. .	20.9	. .	. .	. .	. .	. .	12 51.03	34.08	III.	9	9.30	43 45.6	30.1	13 25.11	40 5.7
24	8	. .	. .	. .	58.8	. .	. .	. .	13 58.64	34.03	IV.	2	7.00	8 28.0	29.8	14 32.67	4 47.8
25	10	. .	43.8	. .	. .	. .	. .	. .	18 13.77	34.07	IV.	7	3.30	30 44.3	28.7	18 47.84	27 3.0
26	8	. .	. .	. .	58.1	. .	. .	. .	18 57.94	34.09	VI.	9	4.51	41 24.4	28.5	19 32.03	37 42.9
27	6	. .	. .	. .	. .	53.6	. .	. .	19 38.72	34.09	VI.	8	10.6	39 3.8	28.3	20 12.81	35 22.1
28	7	. .	. .	. .	. .	36.7	. .	. .	20 21.78	34.08	VI.	7	5.40	31 49.8	28.1	20 55.86	28 7.9
29	6	. .	. .	. .	. .	35.1	. .	. .	21 20.22	34.10	VI.	8	9.8	38 34.5	27.8	21 54.32	34 52.3
30	8	. .	. .	. .	. .	24.9	. .	. .	17 22 20.04	+ 34.10	VI.	9	10.51	−44 26.4	− 27.6	17 22 54.14	− 33 40 44.0

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
June 15, 12	− 22.90	+ 0.003	− 0.366	+ 0.272	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 26	June 15,	29.655	77.0	83.7

REMARKS.

(26) 20. Probably identical with following star.

ZONE 26. JUNE 15. K. $D_0 = -32° 55' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
31	9	. .	. .	. .	. .	26.6	. .	. .	17 24 11.71	+ 34.10	VI.	8	5.34	−36 46.3	− 27.1	17 24 45.81	− 33 33 3.4
32	8	. .	. .	. .	. .	19.0	. .	. .	25 4.13	34.11	VI.	9	5.23	41 40.6	26.8	25 38.24	37 57.4
33	9	. .	. .	. .	. .	. .	20.3	. .	25 50.60	34.08	VII.	4	1.49	15 50.0	26.7	26 24.68	12 6.7
34	10	. .	. .	. .	40.0	. .	. .	. .	27 40.24	34.09	IV.	6	6.59	27 29.1	26.1	28 14.33	23 45.2
35	8	. .	. .	46.1	. .	. .	. .	. .	29 1.10	34.12	III.	8	4.6	36 2.0	25.8	29 35.22	32 17.8
36	10	. .	. .	. .	. .	. .	33.2	. .	29 3.42	34.11	VI.	7	4.44	31 21.5	25.8	29 37.53	27 37.3
37	9	. .	. .	36.4	36.4	. .	. .	. .	30 51.45	34.13	IV.	9	1.59	39 57.6	25.3	31 25.58	36 12.9
38	6	. .	. .	. .	32.3	. .	. .	. .	31 32.14	34.11	VI.	6	9.52	28 56.4	25.1	32 6.25	25 11.5
39	11	. .	. .	. .	48.8	. .	. .	. .	32 48.64	34.12	IV.	7	13.24	35 41.6	24.8	33 22.76	31 59.4
40	10	. .	. .	30.2	. .	. .	. .	. .	38 44.84	34.10	IV.	3	10.40	15 19.2	23.2	39 18.94	11 32.4
41	5.6	. .	53.7	8.8	. .	. .	. .	. .	40 23.86	34.16	IV.	9	8.3	43 1.7	22.7	40 58.02	39 14.4
42	11	. .	. .	. .	. .	. .	30.7	. .	41 0.97	34.12	VI.	4	10.39	20 18.3	22.7	41 35.09	16 31.0
43	10	. .	5.6	. .	35.8	. .	. .	. .	43 35.30	34.13	IV.	6	11.25	29 43.6	21.8	44 9.43	25 55.4
44	10	. .	. .	. .	. .	. .	27.1	. .	43 57.27	34.15	VI.	8	8.29	38 14.8	21.7	44 31.42	34 26.5
45	10	. .	. .	. .	33.3	. .	. .	. .	45 33.14	34.16	IV.	8	10.50	39 26.3	21.3	46 7.30	35 37.6
46	7	. .	. .	19.8	34.6	. .	. .	. .	46 34.54	34.14	VI.	6	5.9	26 33.3	21.0	47 8.68	22 44.3
47	11	. .	46.3	. .	. .	. .	. .	. .	48 16.17	34.15	III.	5	3.59	21 56.2	20.6	48 50.32	18 6.8
48	7	43.7	. .	14.3	. .	. .	. .	. .	49 29.00	34.15	IV.	6	6.23	27 10.9	20.2	50 3.15	23 21.1
49	10	. .	15.3	. .	. .	. .	. .	. .	52 45.18	34.16	IV.	5	8.55	24 26.0	19.3	53 19.34	20 35.3
50	9	. .	. .	. .	32.9	. .	. .	. .	53 32.74	34.15	IV.	4	4.8	17 0.8	19.1	54 6.89	13 9.9
51	11	. .	. .	54.6	. .	. .	. .	. .	55 9.36	34.17	IV.	5	5.17	22 35.7	18.7	55 43.53	18 44.4
52	8	54.0	9.3	. .	. .	. .	. .	. .	58 39.33	34.19	III.	8	8.50	38 25.6	17.7	59 13.52	34 33.3
53	9	. .	. .	. .	. .	56.3	. .	. .	58 41.34	34.17	VI.	5	7.31	23 43.3	17.7	59 15.51	19 51.0
54	8	. .	. .	. .	. .	. .	. .	45.0	17 59 0.01	34.17	VII.	4	7.50	18 52.6	17.6	17 59 34.18	15 0.2
55	7	. .	. .	41.8	. .	. .	. .	. .	18 0 56.59	34.18	IV.	5	9.24	24 40.6	17.1	18 1 30.77	20 47.7
56	8	. .	17.8	. .	. .	. .	. .	. .	2 47.86	34.20	II.	8	8.27	38 13.8	16.6	3 22.06	34 20.4
57	7	. .	. .	. .	7.1	. .	. .	. .	3 6.94	34.20	V.	7	12.8	35 6.0	16.5	3 41.14	31 12.5
58	8	. .	. .	. .	. .	. .	5.8	. .	4 28.27	34.18	VI.	4	9.49	19 53.0	16.1	5 2.45	15 59.1
59	8	. .	. .	. .	. .	. .	45.8	. .	4 16.10	34.17	VI.	3	9.58	14 57.8	16.2	4 50.27	11 4.0
60	7	. .	. .	. .	. .	. .	44.1	. .	5 14.42	34.17	VI.	3	13.18	16 38.9	15.9	5 48.59	12 44.8
61	10	. .	. .	45.0	. .	. .	. .	. .	6 59.75	34.19	IV.	4	13.32	21 46.0	15.4	7 33.94	17 51.4
62	7	. .	. .	. .	. .	. .	53.5	. .	7 23.75	34.19	VI.	6	12.54	30 28.4	15.3	7 57.94	26 33.7
63	8	. .	41.4	. .	11.6	. .	. .	. .	9 11.27	34.18	V.	2	6.53	8 25.6	14.8	9 45.45	4 30.4
64	6.7	. .	. .	13.9	. .	. .	. .	. .	10 28.74	34.20	IV.	6	6.45	27 22.0	14.4	11 2.94	23 26.4
65	8	. .	. .	. .	6.7	. .	. .	. .	11 6.54	34.22	VI.	8	10.40	39 21.0	14.3	11 40.76	35 25.3
66	8	. .	39.2	. .	. .	. .	. .	. .	13 8.91	34.19	III.	2	7.42	8 49.2	13.7	13 43.10	4 52.9
67	8	. .	32.8	. .	. .	. .	. .	. .	14 2.71	34.21	II.	5	10.2	24 59.6	13.5	14 36.92	21 3.1
68	9	. .	. .	. .	29.4	. .	. .	. .	14 29.24	34.23	III.	8	9.15	38 38.2	13.3	15 3.47	34 41.5
69	9	. .	. .	. .	. .	18.8	. .	. .	15 3.82	34.20	VI.	4	7.25	18 40.2	13.2	15 38.02	14 43.4
70	9	. .	. .	. .	. .	16.8	. .	. .	16 1.82	34.20	VI.	4	9.28	19 42.4	12.9	16 36.02	15 45.3
71	6	. .	. .	. .	4.8	. .	. .	. .	17 4.64	34.22	V.	7	9.3	33 32.6	12.6	17 38.86	29 35.2
72	8	. .	. .	. .	45.7	. .	. .	. .	17 45.54	34.21	VI.	5	11.54	25 56.3	12.4	18 19.75	21 58.7
73	8	. .	. .	. .	. .	. .	52.7	. .	18 22.87	34.24	VII.	8	8.55	38 27.6	12.3	18 57.11	34 29.9
74	7	. .	. .	. .	36.4	. .	. .	. .	19 36.24	34.20	VI.	3	4.42	12 18.0	11.9	20 10.44	8 19.9
75	8	. .	. .	. .	. .	. .	. .	34.2	19 49.19	34.21	VII.	4	3.2	16 26.9	11.9	20 23.40	12 28.8
76	6	. .	. .	. .	. .	. .	. .	25.3	20 40.18	34.20	VII.	2	7.55	8 55.6	11.6	21 14.38	4 57.2
77	7	. .	. .	. .	. .	. .	28.8	. .	21 59.19	34.19	VI.	1	12.38	6 18.9	11.2	22 33.38	2 20.1
78	5	. .	. .	. .	33.0	. .	. .	. .	23 32.84	34.20	IV.	2	12.34	11 16.9	10.8	24 7.04	17 17.7
79	6	. .	. .	. .	. .	. .	. .	25.6	18 23 40.47	+ 34.19	VII.	1	13.59	− 6 59.6	− 10.8	18 24 14.66	− 33 3 0.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(26) 37. Transit over T. III assumed as correct.

ZONE 26. JUNE 15. K. $D_\circ=-32^\circ\ 55'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
80	9	. .	. .	. .	. .	. .	57.6	. .	18 25 27.90	+ 34.22	VI.	4	12.27	−21 12.9	− 10.3	18 26 2.12	− 33 17 13.2
81	7	. .	. .	49.3	. .	. .	. .	. .	28 4.36	34.25	IV.	8	12.2	40 2.7	9.5	28 38.61	36 2.2
82	7	. .	. .	51.6	. .	. .	. .	. .	29 6.19	34.21	V.	2	12.21	11 9.3	9.3	29 40.40	7 8.6
83	10	. .	34.9	. .	. .	. .	. .	. .	31 4.87	34.23	III.	6	11.12	29 36.8	8.7	31 39.10	25 35.5
84	9	. .	. .	. .	40.5	. .	. .	. .	32 40.34	34.26	VI.	9	5.56	41 57.3	8.3	33 14.60	37 55.6
85	9	. .	. .	. .	. .	15.8	. .	. .	34 0.93	34.26	V.	9	3.16	40 36.5	7.9	34 35.19	36 34.4
86	7	. .	. .	. .	. .	. .	54.5	. .	34 24.68	34.25	VI.	8	3.19	35 38.0	7.8	34 58.93	31 35.8
87	9	. .	. .	. .	57.1	. .	. .	. .	35 56.94	34.24	V.	5	3.19	21 36.0	7.4	36 31.18	17 33.4
88	9	. .	. .	. .	. .	4.7	. .	. .	36 49.68	34.22	VI.	3	2.28	11 10.2	7.1	37 23.90	7 7.3
89	9	. .	. .	. .	. .	. .	19.6	. .	37 49.92	34.22	VI.	3	3.35	11 44.1	6.8	38 24.14	7 40.9
90	8	. .	. .	. .	46.3	. .	. .	. .	18 39 46.14	+ 34.27	IV.	10	2.40	−45 20.1	− 6.3	18 40 20.41	− 33 41 16.4

ZONE 27. JUNE 15. K. $D_\circ=-32^\circ\ 56'\ 0''$.

1	7	. .	. .	. .	. .	. .	54.8	. .	19? 48 25.19	+ 34.22	VI.	1	11.57	− 5 58.2	. .	19 48 59.41	
2	8	. .	. .	. .	. .	. .	47.5	. .	49 17.84	34.23	VI.	2	10.53	10 25.6	. .	49 52.07	
3	9	. .	. .	. .	51.0	. .	. .	. .	50 50.84	34.24	III.	4	7.49	18 52.5	. .	51 25.08	
4	8	. .	. .	. .	38.8	. .	. .	. .	51 38.64	34.25	IV.	5	10.59	25 28.7	. .	52 12.89	
5	5	37.9	. .	8.3	. .	. .	. .	. .	55 23.18	34.26	IV.	6	11.2	29 32.0	. .	55 57.44	
6	8	53.7	9.0	24.0	. .	. .	. .	. .	57 38.80	34.25	IV.	4	12.10	21 4.5	. .	58 13.05	
7	9	. .	. .	. .	. .	. .	. .	22.7	57 37.55	34.23	VII.	1	12.49	6 24.2	. .	58 11.78	
8	8	. .	. .	. .	. .	28.0	. .	57.9	19? 59 12.92	34.24	VII.	3	6.58	13 26.5	. .	19 59 47.16	
9	7	. .	25.1	40.2	. .	. .	. .	. .	20? 2 54.87	34.24	IV.	3	10.59	15 28.8	. .	20 3 29.11	
10	8	. .	. .	. .	. .	. .	25.4	. .	5 55.56	34.30	IV.	9	15.37	46 51.3	. .	6 29.86	
11	10	. .	. .	. .	. .	. .	37.3	. .	8 7.55	34.27	VII.	6	11.41	29 51.2	. .	8 41.82	
12	7	. .	. .	. .	. .	22.5	. .	. .	9 7.51	34.25	VI.	3	12.9	16 4.0	. .	9 41.76	
13	8	. .	. .	. .	. .	. .	11.9	. .	9 42.15	34.27	VI.	5	9.4	24 30.3	. .	10 16.42	
14	7	. .	. .	. .	. .	. .	. .	40.8	9 55.69	34.25	VII.	2	8.34	9 14.3	. .	10 29.94	
15	6	. .	. .	. .	. .	24.3	. .	. .	11 9.31	34.26	VI.	4	3.36	16 44.4	. .	11 43.57	
16	10	. .	. .	. .	. .	17.0	. .	. .	12 2.00	34.25	VI.	3	10.21	15 9.4	. .	12 36.25	
17	6.7	. .	. .	. .	. .	16.6	. .	. .	13 1.70	34.28	V.	7	13.23	35 44.0	. .	13 35.98	
18	9.10	. .	. .	16.8	. .	. .	. .	. .	14 31.76	34.28	III.	7	11.23	34 43.4	. .	15 6.04	
19	8	. .	8.2	. .	. .	. .	. .	. .	15 37.88	34.24	II.	1	11.5	5 31.9	. .	16 12.12	
20	8	. .	. .	. .	. .	. .	. .	44.8	18 0.13	34.30	VII.	9	6.35	42 16.7	. .	18 34.43	
21	7	. .	. .	. .	. .	. .	. .	25.1	19 40.34	34.29	VII.	8	3.19	35 37.7	. .	20 14.63	
22	8	. .	. .	. .	. .	. .	. .	12.1	20 27.45	34.30	VII.	9	9.1	43 30.5	. .	21 1.75	
23	8	. .	. .	. .	22.6	. .	. .	. .	22 22.44	34.26	IV.	4	8.5	19 0.6	. .	22 56.70	
24	5	. .	40.4	. .	10.8	. .	. .	. .	29 10.60	34.30	IV.	10	4.38	46 19.8	. .	29 44.90	
25	8	. .	. .	14.2	. .	. .	. .	. .	30 29.04	34.27	IV.	6	6.15	27 6.8	. .	31 3.31	
26	9	11.8	. .	. .	. .	. .	. .	. .	33 56.91	34.27	II.	5	6.11	23 2.8	. .	34 31.18	
27	11	. .	. .	. .	. .	2.9	. .	. .	33 47.99	34.28	VI.	7	7.33	32 46.9	. .	34 22.27	
28	10	. .	25.3	. .	. .	. .	. .	. .	35 55.14	34.26	III.	4	8.50	19 23.3	. .	36 29.40	
29	7	49.3	. .	19.7	. .	. .	. .	. .	37 34.63	34.29	III.	8	3.32	35 44.8	. .	38 8.92	
30	7	. .	21.7	. .	. .	. .	. .	. .	38 51.85	34.30	III.	10	1.33	44 46.2	. .	39 26.15	
31	8	. .	. .	. .	. .	24.3	. .	. .	39 9.42	34.29	VI.	8	8.38	38 19.3	. .	39 44.71	
32	8	. .	. .	. .	13.2	. .	. .	. .	40 13.04	34.29	IV.	8	8.53	38 27.1	. .	40 47.33	
33	9	. .	27.6	. .	. .	. .	. .	. .	41 57.38	34.25	II.	3	9.10	14 33.5	. .	42 31.63	
34	10	. .	32.7	. .	. .	. .	. .	. .	43 2.59	34.27	IV.	5	7.3	23 29.3	. .	43 36.86	
35	9	. .	. .	5.0	. .	. .	. .	. .	20? 44 19.87	+ 34.27	IV.	6	10.36	−29 18.8	. .	20 44 54.14	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 28. JUNE 16. A. $D_0 = -31^\circ\ 34'\ 10''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	′ ″	h. m. s.	° ′ ″
1	8	. .	. .	. .	17.5	32.0	46.6	. .	14 38 17.31	+ 33.65	.	1	8.	− 3 59.1	− 57.2	14 38 50.96	− 31 39 6.3
2	7	. .	. .	. .	11.0	25.6	. .	. .	40 10.51	33.67	IV.	3	5.46	12 50.8	56.5	40 44.18	31 47 57.3
3	8	5.2	20.2	35.3	49.6	. .	. .	. .	49.67	33.72	I.	6	4.50	26 23.4	54.1	47 23.39	32 1 27.5
4	9	. .	. .	. .	. .	53.0	7.5	22.2	48 38.18	33.73	VII.	8	8.48	38 23.8	53.4	49 11.91	13 27.2
5	10	. .	48.0	3.1	. .	. .	. .	. .	50 17.76	33.74	II.	8	9.50	38 55.4	52.8	50 51.50	13 58.2
6	8	31.0	46.5	1.0	15.9	. .	. .	. .	53 15.70	33.75	II.	6	7.33	27 46.0	51.7	53 49.45	2 47.7
7	12	3.5	18.5	. .	. .	. .	. .	. .	56 47.96	33.76	I.	6	5.38	26 47.6	50.4	57 21.72	32 1 48.0
8	10	. .	. .	. .	. .	18.5	32.3	47.5	57 3.31	33.76	V.	4	4.10	17 2.0	50.3	14 57 37.07	31 52 2.3
9	11	. .	. .	13.2	28.2	. .	. .	. .	14 59 28.04	33.80	IV.	9	2.52	40 24.1	49.4	15 0 1.84	32 15 23.5
10	11	. .	. .	. .	. .	20.8	35.0	50.0	15 1 5.86	33.79	VII.	7	5.24	31 41.3	48.8	1 39.65	6 40.1
11	12	. .	8.5	23.5	38.0	. .	. .	. .	6 38.01	33.81	IV.	7	3.25	30 41.6	46.5	7 11.82	5 38.1
12	10	. .	. .	. .	21.5	. .	. .	. .	10 21.34	33.83	IV.	8	9.34	38 47.6	45.2	10 55.17	32 13 42.8
13	9	. .	. .	5.5	19.8	. .	. .	. .	12 19.69	33.81	III.	1	7.35	3 46.4	44.4	12 53.50	31 38 40.8
14	10	. .	. .	. .	28.0	42.5	57.0	12.5	13 27.86	33.83	VI.	3	2.50	11 21.8	44.0	14 1.69	46 15.8
15	8	. .	. .	. .	. .	. .	28.2	42.5	14 58.50	33.82	VII.	1	4.33	2 13.9	43.4	15 32.82	31 37 7.3
16	11	6.2	21.1	36.0	. .	. .	. .	. .	21 50.62	33.89	III.	7	5.3	31 31.1	40.7	22 24.51	32 6 21.8
17	8	. .	. .	. .	. .	. .	. .	38.5	21 54.49	33.90	VII.	10	5.46	46 53.2	40.7	22 28.39	21 43.9
18	10	3.0	. .	32.5	. .	. .	. .	. .	15 26 47.37	+ 33.91	I.	7	8.	−33 0.1	− 38.7	15 27 21.28	− 32 7 48.8
ZONE 29. JUNE 17. K. $D_0 = -37^\circ\ 52'\ 0''$.																	
1	8	. .	. .	. .	11.8	. .	. .	. .	15 27 11.64	+ 33.36	III.	9	7.3	−42 33.9	− 46.5	15 27 45.00	− 38 35 20.4
2	9	. .	. .	. .	. .	. .	9.1	. .	27 37.34	33.36	VI.	7	10.37	34 21.2	46.4	28 10.70	27 7.6
3	5.6	. .	. .	. .	. .	. .	49.4	. .	28 17.63	33.37	VI.	9	12.7	45 7.7	46.3	28 51.00	37 54.0
4	9	. .	. .	. .	. .	3.2	. .	. .	29 47.28	33.34	V.	4	10.27	20 11.7	46.0	30 20.62	12 57.7
5	8	. .	. .	14.5	. .	46.2	. .	. .	38 30.16	33.50	VI.	3	12.7	16 1.7	44.3	39 3.66	8 46.0
6	9	. .	55.0	. .	27.2	. .	. .	. .	44 26.98	33.47	IV.	8	6.11	37 6.9	43.1	45 0.45	29 50.0
7	10	. .	. .	. .	42.9	. .	. .	. .	45 42.74	33.47	IV.	7	4.30	31 15.5	42.8	46 16.21	23 58.3
8	7	. .	. .	. .	. .	. .	. .	8.3	48 20.73	33.50	VII.	9	13.4	40 33.7	42.3	48 54.23	33 16.0
9	6	. .	. .	. .	. .	6.2	. .	. .	49 50.34	33.51	VI.	8	13.45	40 56.8	42.0	50 23.85	33 38.8
10	5	. .	. .	. .	. .	. .	45.7	. .	50 13.90	33.51	VII.	9	15.7	46 38.6	41.9	50 47.41	39 20.5
11	4.5	4.8	21.3	37.1	. .	. .	. .	. .	52 52.75	33.51	III.	4	6.10	18 1.5	41.3	15 53 26.26	38 10 42.8
12	9	. .	. .	. .	. .	2.3	. .	. .	15 59 46.31	33.51	V.	1	5.54	2 51.9	39.9	16 0 19.82	37 55 31.8
13	10.11	. .	. .	46.2	. .	. .	. .	. .	16 8 1.92	33.58	IV.	5	8.8	24 2.1	38.0	8 35.50	38 16 40.1
14	8	. .	. .	0.8	16.6	. .	. .	. .	14 16.37	33.60	IV.	3	6.11	13 1.6	36.6	14 49.97	5 38.2
15	4	. .	. .	. .	52.9	. .	24.7	. .	19 52.80	33.68	VI.	10	6.53	47 31.0	35.3	20 26.48	40 6.3
16	9	. .	. .	. .	. .	41.9	. .	. .	23 25.96	33.65	VII.	3	10.55	15 24.9	34.5	23 59.61	7 59.4
17	7.8	. .	. .	. .	. .	. .	1.9	. .	23 30.34	33.64	VII.	2	13.1	11 28.1	34.5	24 3.98	4 2.6
18	7.8	. .	48.4	4.3	20.3	. .	. .	. .	26 20.16	33.68	III.	6	10.19	29 10.7	34.0	26 53.84	21 44.7
19	8	. .	. .	0.7	. .	32.3	. .	. .	32 16.48	33.71	IV.	6	12.17	30 10.6	32.4	32 50.19	22 43.0
20	8	. .	. .	. .	. .	29.9	. .	. .	33 13.94	33.69	VII.	2	10.18	10 5.5	32.2	33 47.63	38 2 37.7
21	6	. .	. .	. .	2.0	. .	33.2	. .	40 1.76	33.72	VI.	2	3.55	6 51.8	30.6	40 35.48	37 59 22.4
22	5	. .	. .	. .	47.1	. .	18.6	. .	41 46.95	33.74	VI.	4	6.17	18 4.8	30.1	42 20.69	38 10 34.9
23	9	. .	15.0	31.2	. .	. .	. .	. .	43 46.86	33.77	III.	6	4.22	26 9.8	29.7	44 20.63	18 39.5
24	5	. .	. .	4.9	20.6	. .	. .	. .	44 20.46	33.75	IV.	4	4.36	17 13.9	29.5	44 54.21	9 43.4
25	8	25.2	41.3	. .	. .	. .	. .	. .	46 12.98	33.76	III.	4	7.44	18 49.1	29.1	46 46.74	11 18.2
26	7	. .	. .	. .	. .	35.3	51.3	. .	48 19.51	33.79	VI.	6	6.32	27 15.5	28.6	48 53.30	38 19 44.1
27	7	. .	55.4	11.6	. .	. .	. .	. .	16 50 26.90	+ 33.76	III.	1	11.58	− 5 56.4	− 28.1	16 51 0.66	− 37 58 24.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
June 16,	12	− 23.39	− 0.022	− 0.366	+ 0.272	+ 0.120

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 28	June 16,	14 38	29.97	77.8	73.3
		15 27	29.98	75.5	71.0
Zone 29	June 17,	15 27	30.05	75.0	67.0
		18 11	29.94	74.0	67.0

REMARKS.

(28) 3. Minutes assumed as 46.
(29) 8. Micrometer assumed as $3^r.4$ instead of $13^r.4$.

ZONE 29. JUNE 17. K. $D_0 = -37° 52' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
28	6	. .	. .	. .	. .	51.3	. .	23.2	16 50 35.33	+ 33.78	VII.	3	5.39	−12 44.8	− 28.0	16 51 9.11	− 38 5 12.8
29	5	. .	. .	. .	. .	22.0	. .	53.9	52 6.09	33.80	VII.	5	3.40	21 35.6	27.7	52 39.89	38 14 3.3
30	4.5	. .	. .	. .	. .	. .	. .	51.4	53 3.42	33.77	VII.	1	7.2	3 25.8	27.4	53 37.19	37 55 53.2
31	9	. .	51.0	7.0	. .	. .	. .	. .	16 55 22.86	33.83	III.	7	6.12	32 7.1	26.8	16 55 56.69	38 24 33.9
32	4	. .	. .	8.8	24.6	. .	. .	. .	17 1 24.67	33.87	IV.	9	12.37	45 23.2	25.4	17 1 58.54	37 48.6
33	9	. .	. .	. .	. .	. .	. .	15.5	1 27.69	33.83	VII.	4	11.14	20 35.0	25.3	2 1.52	13 0.3
34	5	. .	. .	. .	4.9	20.8	. .	. .	3 4.79	33.83	IV.	3	8.27	14 10.5	24.9	3 38.62	6 35.4
35	10	. .	. .	. .	. .	. .	2.0	. .	3 30.32	33.85	VI.	6	7.15	27 37.3	24.8	4 4.17	20 2.1
36	4	. .	. .	. .	47.8	3.7	19.2	. .	5 47.65	33.87	VII.	7	4.59	31 29.5	24.3	6 21.52	23 53.8
37	9	. .	. .	. .	. .	. .	. .	9.3	5 21.46	33.84	VII.	4	4.34	17 12.3	24.4	5 55.30	38 9 36.7
38	5	. .	. .	1.3	17.0	. .	. .	. .	7 16.77	33.84	V.	2	4.34	7 11.8	23.9	7 50.61	37 59 35.7
39	8	. .	. .	. .	. .	. .	50.3	. .	8 18.76	33.83	VI.	1	7.17	3 33.7	23.6	8 52.65	37 55 57.3
40	9	. .	. .	. .	. .	49.8	. .	. .	9 33.94	33.90	IV.	8	10.17	39 11.6	23.4	10 7.84	38 31 35.0
41	9	. .	. .	. .	. .	. .	. .	16.5	9 58.86	33.90	VII.	8	6.16	37 8.8	23.2	10 32.76	29 32.0
42	7	. .	. .	. .	52.6	8.2	. .	. .	12 52.33	33.86	VII.	2	11.12	10 32.9	22.5	13 26.19	2 55.4
43	6	56.1	12.2	. .	. .	. .	. .	. .	15 43.88	33.88	II.	4	7.56	18 55.0	21.8	16 17.76	38 11 16.8
44	6	. .	. .	19.2	35.0	. .	. .	. .	16 34.68	33.87	IV.	1	6.23	3 6.6	21.6	17 8.55	37 55 28.2
45	9	. .	. .	. .	28.3	44.5	. .	. .	17 28.38	33.93	IV.	9	4.50	41 26.4	21.3	18 2.31	38 33 47.7
46	4.5	. .	. .	. .	33.3	48.8	. .	. .	18 33.02	33.92	II.	7	3.49	30 54.4	21.1	19 6.94	23 15.5
47	10	. .	. .	. .	. .	. .	15.3	. .	19 43.60	33.93	VI.	7	4.33	31 16.7	20.8	20 17.53	23 37.5
48	8	. .	. .	. .	. .	. .	12.9	28.8	20 41.16	33.94	VII.	8	10.13	39 9.0	20.5	21 15.10	38 31 29.5
49	8	. .	26.3	42.4	. .	. .	. .	. .	22 57.76	33.89	III.	1	13.0	6 27.7	20.0	23 31.75	37 58 47.7
50	7	. .	. .	. .	. .	3.8	. .	. .	24 47.93	33.95	VI.	8	5.55	36 58.5	19.5	25 21.88	38 29 18.0
51	3.4	. .	. .	. .	. .	55.0	11.0	. .	25 39.19	33.96	VI.	8	10.00	39 2.7	19.3	26 13.15	38 31 22.0
52	4.5	. .	. .	. .	. .	52.4	8.0	24.4	26 36.47	33.90	VII.	1	11.22	5 37.5	19.0	27 10.37	37 57 56.5
53	9	. .	. .	. .	. .	10.9	. .	. .	28 55.00	33.94	VI.	5	8.29	24 12.5	18.5	29 28.94	38 16 31.0
54	9	. .	21.0	37.0	. .	. .	. .	. .	31 52.84	33.97	III.	7	3.43	30 51.6	17.7	32 26.81	23 9.3
55	8.9	. .	. .	35.7	21.3	. .	. .	. .	32 51.19	33.94	IV.	3	9.39	14 47.0	17.5	33 25.13	7 4.5
56	6	28.0	44.1	. .	. .	. .	. .	. .	36 15.65	33.94	II.	2	10.50	10 22.1	16.6	36 49.59	2 38.7
57	9	. .	. .	. .	44.8	. .	. .	. .	36 44.63	33.96	III.	5	10.50	25 24.1	16.5	37 18.59	17 40.6
58	7	. .	. .	. .	. .	52.1	. .	. .	37 36.15	33.94	V.	2	14.5	12 1.1	16.3	38 10.09	4 17.4
59	7	. .	. .	. .	. .	. .	37.9	54.1	38 6.30	33.94	VII.	2	12.28	11 11.4	16.1	38 40.24	3 27.5
60	9	. .	. .	. .	54.8	. .	. .	. .	39 54.63	33.99	VI.	7	8.4	33 3.7	15.7	40 28.62	25 19.4
61	9	. .	. .	. .	. .	. .	. .	42.0	39 54.20	33.96	VII.	4	12.19	21 7.9	15.7	40 28.16	13 23.6
62	7	. .	. .	. .	48.9	. .	. .	. .	41 48.73	34.00	V.	9	8.56	43 31.1	15.2	42 22.73	35 46.3
63	6	41.0	57.4	. .	. .	. .	. .	. .	43 29.32	34.01	III.	9	7.6	42 35.3	14.8	44 3.33	34 50.1
64	8	. .	14.7	30.7	. .	. .	. .	. .	44 46.25	33.97	IV.	3	9.11	14 32.8	14.5	45 20.22	6 47.3
65	8	. .	. .	. .	. .	. .	. .	37.2	44 49.65	34.02	VII.	10	4.31	46 18.7	14.5	45 23.67	38 33.2
66	7	. .	. .	. .	42.6	58.7	. .	. .	46 42.58	33.98	VI.	3	2.56	11 22.5	14.0	47 16.56	3 36.5
67	6	. .	. .	. .	16.0	31.9	. .	. .	48 15.93	34.02	VI.	9	3.30	40 45.6	13.6	48 49.95	32 59.2
68	5	. .	. .	21.8	37.8	. .	. .	. .	49 37.62	34.00	IV.	6	8.13	28 7.0	13.3	50 11.62	20 20.3
69	6	. .	. .	. .	39.6	55.6	. .	. .	50 39.54	33.97	V.	2	13.41	11 49.0	13.0	51 13.51	4 2.0
70	7	. .	0.4	16.6	. .	. .	. .	. .	52 32.03	33.99	IV.	3	7.17	13 35.0	12.5	53 6.02	5 47.5
71	9	. .	. .	15.2	. .	. .	. .	. .	54 30.98	34.01	IV.	6	3.29	25 43.0	12.0	55 4.99	17 55.0
72	8	. .	. .	. .	38.9	. .	. .	. .	55 38.73	34.05	IV.	10	1.10	44 37.4	11.8	56 12.78	36 49.2
73	7	. .	. .	. .	59.8	. .	. .	. .	56 59.63	34.04	IV.	9	6.27	42 15.6	11.4	57 33.67	34 27.0
74	7	. .	49.9	. .	. .	. .	. .	. .	58 21.96	34.04	II.	9	12.23	45 15.8	11.1	58 56.00	37 26.9
75	10	. .	. .	58.0	. .	. .	. .	. .	17 58 14.07	34.03	IV.	9	8.21	43 13.4	10.8	17 59 48.10	35 24.2
76	8	. .	. .	5.2	21.2	. .	. .	. .	18 1 20.94	+ 34.01	V.	4	10.45	−20 20.9	− 10.3	18 1 54.95	− 38 12 31.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(29) 75. Minutes assumed as 59 instead of 58.

ZONE 29. JUNE 17. K. $D_0 = -37° 52' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d'_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
77	7	24.9	40.9	. .	. .	. .	. .	. .	18 3 12.89	+ 34.04	III.	7	10.45	−34 25.5	− 9.9	18 3 46.93	− 38 26 35.4
78	5	. .	. .	9.1	. .	41.0	. .	. .	6 24.77	34.02	IV.	4	12.12	21 5.0	9.8	6 58.79	13 14.1
79	7	. .	. .	. .	27.9	. .	54.6	. .	7 22.84	34.03	V.	5	8.53	24 24.8	8.8	7 56.87	16 33.6
80	7	35.9	52.2	. .	. .	. .	. .	. .	18 11 23.80	+ 34.06	IV.	9	10.11	−44 9.2	− 7.8	18 11 57.86	− 38 36 17.0

ZONE 30. JUNE 18. A. $D_0 = -31° 34' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d'_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	32.5	47.5	2.5	. .	. .	. .	. .	15 37 17.13	+ 33.06	III.	7	7.2	−32 31.2	− 91.6	15 37 50.19	− 32 8 32.8
2	9	. .	. .	28.0	43.0	. .	. .	. .	40 42.87	33.09	IV.	9	11.1	44 31.3	90.9	41 15.96	20 32.2
3	9	. .	2.0	17.0	. .	. .	. .	. .	41 31.70	33.09	III.	8	7.20	37 39.8	90.7	42 4.79	13 40.5
4	10	. .	. .	33.6	48.5	. .	. .	. .	49 48.37	33.12	IV.	8	7.19	37 39.3	89.1	50 21.49	13 38.4
5	10	. .	. .	. .	0.0	14.5	. .	. .	50 59.83	33.12	V.	8	10.40	39 20.9	88.9	51 32.95	32 15 19.8
6	9	. .	. .	38.6	53.5	. .	. .	. .	15 58 53.10	33.12	II.	1	9.57	4 58.0	87.2	15 59 26.22	31 40 55.2
7	11	. .	. .	. .	. .	. .	12.0	27.0	16 1 42.71	33.14	VII.	3	11.25	15 41.7	86.7	16 2 15.85	51 38.4
8	11	. .	. .	. .	. .	32.5	48.5	. .	3 16.76	33.14	V.	2	6.57	8 26.8	86.3	3 49.90	44 23.1
9	11	. .	. .	. .	11.5	. .	. .	. .	23 11.34	33.21	IV.	2	10.48	10 23.7	81.9	23 44.55	31 46 15.6
10	11	5.0	. .	. .	. .	. .	. .	. .	25 49.51	33.25	I.	7	7.25	32 42.4	81.3	26 22.76	32 8 33.7
11	10	. .	. .	. .	58.0	13.0	27.5	. .	26 58.11	33.23	IV.	3	8.	13 58.6	81.1	27 31.34	31 49 49.7
12	10	. .	. .	. .	. .	24.0	38.8	53.5	28 9.35	33.25	VII.	5	11.15	26 36.3	80.8	28 42.60	32 2 27.1
13	11	35.2	50.6	. .	. .	. .	. .	. .	31 19.83	33.26	I.	5	10.34	25 15.5	80.0	31 53.09	32 1 5.5
14	10	. .	49.2	4.0	. .	. .	. .	. .	32 18.60	33.26	II.	5	9.04	24 30.3	79.8	32 51.86	31 0 20.1
15	6	. .	. .	. .	. .	42.0	56.8	11.5	34 27.29	33.24	V.	3	6.16	13 5.9	79.3	34 0.53	31 48 55.2
16	10	. .	. .	. .	2.0	17.0	. .	. .	35 2.07	33.28	V.	8	6.37	37 18.0	79.2	35 35.35	32 13 7.1
17	9	. .	. .	. .	38.5	. .	. .	. .	38 38.34	33.24	IV.	1	4.40	2 18.0	78.3	39 11.58	31 38 6.3
18	9	. .	. .	. .	. .	0.0	14.5	. .	39 45.23	33.28	V.	8	4.38	36 17.9	78.0	40 18.51	32 12 5.9
19	9	. .	. .	26.0	40.5	. .	. .	. .	41 40.41	33.26	III.	4	8.43	19 19.9	77.5	42 13.67	31 55 7.4
20	10	. .	50.5	. .	. .	. .	. .	. .	43 20.01	33.28	II.	6	10.59	29 30.1	77.1	43 53.29	32 5 17.2
21	8	41.1	56.5	. .	. .	. .	. .	. .	44 25.68	33.27	I.	4	10.59	20 28.4	76.3	44 58.95	31 56 14.7
22	8	. .	. .	. .	12.5	. .	. .	. .	45 12.34	33.30	IV.	7	10.59	39 29.8	76.7	45 45.64	32 15 16.5
23	9	. .	13.0	28.0	. .	. .	. .	. .	46 42.59	33.29	II.	6	11.26	29 43.8	76.3	47 15.88	5 30.1
24	11	31.5	46.5	. .	. .	. .	. .	. .	48 16.01	33.30	II.	7	5.32	31 45.6	75.9	48 49.31	32 7 31.5
25	11	. .	19.5	. .	. .	. .	. .	. .	49 48.91	33.30	II.	5	3.52	21 52.6	75.6	50 22.21	31 57 38.2
26	7	. .	8.4	23.4	. .	. .	. .	. .	51 37.83	33.30	II.	4	8.15	19 5.6	75.1	52 11.13	31 54 50.7
27	9	. .	. .	. .	. .	. .	41.5	56.0	52 11.98	33.31	VI.	6	4.32	26 14.5	75.0	52 45.29	32 1 59.5
28	10	. .	. .	51.2	6.0	. .	. .	. .	54 5.86	33.32	IV.	7	2.	29 58.6	74.5	54 39.18	32 5 43.1
29	11	. .	. .	. .	. .	10.0	24.5	. .	54 55.23	33.31	VI.	5	8.22	24 9.1	74.3	55 28.54	31 59 53.4
30	10	. .	. .	. .	. .	. .	. .	32.0	55 47.57	33.30	VII.	2	7.33	8 44.6	74.1	56 20.87	44 28.7
31	11	. .	. .	. .	. .	59.0	12.5	28.0	16 58 43.70	33.30	VII.	2	11.2	10 30.2	73.3	16 59 17.00	31 46 13.5
32	8	. .	30.2	45.0	. .	. .	. .	. .	17 0 59.72	33.34	II.	7	6.21	32 10.4	72.8	17 1 33.06	32 7 53.2
33	8	. .	10.8	25.5	. .	. .	. .	. .	2 40.37	33.35	III.	8	10.41	39 21.4	72.3	3 13.72	15 3.7
34	9	. .	. .	. .	40.5	. .	. .	. .	3 10.34	33.34	IV.	6	7.26	27 42.7	72.2	3 43.68	32 3 24.9
35	9	. .	0.0	15.0	. .	. .	. .	. .	5 29.39	33.34	III.	4	2.39	16 16.0	71.6	6 2.73	31 51 57.6
36	9	. .	. .	46.5	1.5	. .	. .	. .	7 1.15	33.34	IV.	4	5.22	17 38.4	71.2	7 34.49	31 53 19.6
37	7	. .	. .	1.5	. .	30.7	. .	. .	8 16.25	33.38	V.	10	6.58	47 30.0	70.9	8 49.63	32 23 10.9
38	11	. .	. .	. .	. .	. .	5.0	20.0	10 35.72	33.36	VII.	5	8.31	24 13.4	70.3	11 9.08	31 59 53.7
39	11	. .	25.6	40.5	. .	. .	. .	. .	12 55.06	33.36	III.	5	10.48	25 23.1	69.7	13 28.42	32 1 2.8
40	10	. .	. .	45.6	0.0	. .	. .	. .	13 59.92	33.35	IV.	3	9.19	14 38.5	69.4	14 33.27	31 50 17.9
41	8	39.0	54.0	. .	. .	. .	. .	. .	17 16 23.33	+ 33.36	II.	4	4.34	−17 13.9	− 68.8	17 16 56.69	− 31 52 52.7

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
June 18, 12	− 22.51	− 0.013	− 0.366	+ 0.272	+ 0.120
	+ 22.53	− 0.013	− 0.366	+ 0.272	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°
Zone 30	June 18, 15 37	29.97	76.0	68.0
	18, 21 11	29.92	75.7	66.5

REMARKS.

(29) 79. Transit over T. IV assumed as 22ˢ.9 instead of 27ˢ.9.
(30) 15. Minutes assumed as 33 instead of 34.
(30) 22. Micrometer thread assumed as 8 instead of 7.

ZONE 30. JUNE 18. A. $D_0 = -31° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
42	11	. .	. .	. .	. .	. .	15.5	30.5	17 17 46.22	+ 33.37	VI.	5	6.15	−23 4.9	− 68.4	17 18 19.59	− 31 58 43.3
43	9	. .	. .	42.5	57.5	. .	. .	. .	19 57.20	33.38	IV.	5	8.18	24 7.3	67.9	20 30.58	59 45.2
44	8	. .	. .	. .	. .	21.0	35.5	. .	21 6.24	33.37	VI.	3	10.27	15 12.6	67.6	21 39.61	50 50.2
45	10	. .	. .	. .	. .	2.5	16.5	31.7	22 47.43	33.38	VII.	4	1.42	15 46.7	67.1	23 20.81	51 23.8
46	8	. .	. .	. .	. .	. .	50.5	5.5	24 21.17	33.37	VII.	3	0.00	9 55.6	66.7	24 54.54	31 45 32.3
47	7	. .	. .	25.0	39.8	. .	. .	. .	26 39.62	33.39	IV.	6	3.50	25 53.5	66.1	27 13.01	32 1 29.6
48	11	. .	. .	50.5	5.0	. .	. .	.	28 4.91	33.39	III.	4	7.54	18 55.2	65.8	28 38.30	31 54 31.0
49	8	. .	12.0	27.0	. .	. .	. .	.	29 41.60	33.42	III.	7	4.	30 59.2	65.3	30 15.02	32 6 34.5
50	8	. .	. .	. .	. .	. .	53.6	8.0	31 23.99	33.41	VII.	6	9.1	28 30.2	64.9	31 57.40	4 5.1
51	9	24.3	39.1	. .	. .	. .	. .	. .	33 8.74	33.43	II.	7	9.18	33 39.8	64.4	33 42.17	9 14.2
52	10	. .	. .	. .	2.5	16.5	. .	. .	34 2.08	33.44	IV.	9	6.58	42 28.3	64.2	34 35.52	32 18 2.5
53	12	. .	52.5	8.0	. .	. .	. .	. .	36 22.16	33.41	II.	4	6.44	18 19.6	63.6	36 55.57	31 53 53.2
54	11	. .	. .	. .	1.0	. .	. .	. .	37 0.84	33.43	IV.	7	7.46	32 53.5	63.4	37 34.27	32 8 26.9
55	11	. .	40.5	55.5	. .	. .	. .	. .	39 9.96	33.43	III.	5	2.41	21 16.9	62.8	39 43.39	31 56 49.7
56	8	. .	. .	. .	. .	. .	. .	20.0	39 35.50	33.40	VII.	1	6.35	3 15.6	62.7	39	38 48.3
57	10	. .	. .	. .	. .	31.5	46.2	. .	41 16.83	33.43	VI.	5	7.22	23 48.8	62.3	41 50.26	59 21.1
58	7	. .	. .	38.0	53.0	. .	. .	. .	42 52.70	33.43	IV.	5	7.40	23 48.1	61.8	43 26.13	31 59 19.9
59	11	. .	. .	13.5	28.5	. .	. .	. .	44 28.25	33.44	IV.	6	10.	29 0.6	61.4	45 1.69	32 4 32.0
60	8	. .	. .	. .	15.5	29.8	44.5	. .	45 15.21	33.43	VI.	4	9.43	19 50.1	61.2	45 48.64	31 55 21.3
61	9	. .	. .	55.0	9.8	. .	. .	. .	47 9.61	33.44	IV.	5	11.46	25 52.4	60.7	47 43.05	32 1 23.1
62	10	. .	20.0	34.8	49.5	. .	. .	. .	48 49.34	33.44	IV.	4	9.43	19 50.3	60.3	49 22.78	31 55 20.6
63	10	. .	25.5	40.0	. .	. .	. .	. .	50 54.72	33.45	III.	5	4.14	22 3.9	59.7	51 28.17	31 57 33.6
64	9	. .	. .	. .	42.9	57.5	. .	. .	51 42.75	33.45	V.	6	6.41	27 19.9	59.5	52 16.20	32 2 49.4
65	10	. .	. .	. .	. .	10.0	24.5	. .	52 55.24	33.44	VI.	4	4.40	17 17.0	59.2	53 28.68	31 52 46.2
66	8	. .	. .	. .	52.8	7.5	. .	. .	54 52.73	33.47	V.	8	12.	40 1.3	58.6	55 26.20	32 15 29.9
67	8	. .	. .	. .	. .	. .	50.0	. .	56 20.64	33.47	VI.	8	8.8	38 3.9	58.3	56 54.11	13 32.2
68	12	. .	. .	6.5	. .	. .	. .	. .	58 21.13	33.48	III.	6	6.53	27 26.0	57.7	17 58 54.61	2 53.7
69	8	. .	. .	27.5	. .	57.0	. .	. .	17 59 42.27	33.49	V.	7	11.32	34 47.7	57.4	18 0 15.76	10 15.1
70	9	. .	22.5	37.5	. .	. .	. .	. .	18 1 52.27	33.50	III.	9	8.5	43 2.3	56.8	2 25.77	32 18 29.1
71	8	. .	. .	3.2	17.8	. .	. .	. .	3 17.70	33.47	IV.	5	9.	24 28.5	56.4	3 51.17	31 59 54.9
72	9	. .	. .	. .	. .	42.5	57.0	. .	4 27.72	33.50	VI.	8	10.43	39 22.2	56.0	5 1.22	32 14 48.2
73	9	. .	. .	16.0	31.0	. .	. .	. .	7 30.85	33.51	IV.	9	3.9	40 32.7	55.2	8 4.36	15 57.9
74	10	. .	. .	. .	. .	23.5	. .	. .	9 8.79	33.50	V.	7	5.	31 29.6	54.8	9 42.29	6 54.4
75	8	. .	. .	. .	. .	. .	39.0	44.0	10 9.74	33.50	VII.	8	10.24	39 12.4	54.2	11 43.24	32 15 36.6
76	9	. .	. .	. .	14.5	29.0	44.5	. .	33 14.60	33.49	VI.	3	2.47	11 20.1	48.3	33 48.09	31 46 38.4
77	7	33.0	48.0	2.9	. .	. .	. .	. .	35 17.50	33.52	III.	6	8.15	28 7.4	47.7	35 51.02	32 3 25.1
78	7	. .	. .	. .	55.2	10.0	. .	. .	36 55.14	33.50	IV.	4	6.44	18 19.8	47.2	37 28.64	31 53 37.0
79	8	. .	. .	. .	5.0	20.0	. .	. .	38 5.05	33.52	V.	6	4.9	26 3.1	46.9	38 38.57	32 1 20.0
80	11	. .	. .	. .	. .	43.0	58.0	13.0	40 28.51	33.49	VII.	2	4.4	6 58.9	46.3	41 2.00	31 42 15.2
81	10	. .	. .	33.0	47.5	. .	. .	. .	41 47.49	33.52	IV.	6	9.39	28 49.9	45.9	42 21.01	32 4 5.8
82	7	. .	8.8	23.5	38.2	. .	. .	. .	43 23.40	33.53	IV.	7	11.36	34 49.8	45.4	43 56.93	10 5.2
83	9	. .	. .	0.0	15.5	. .	. .	. .	45 15.06	33.55	IV.	8	6.	36 59.4	45.0	45 48.61	32 12 14.4
84	6	. .	. .	. .	11.6	26.1	41.0	. .	46 11.50	33.51	VI.	4	4.37	17 15.5	44.7	46 45.01	31 52 30 2
85	8	. .	. .	35.0	50.0	. .	. .	. .	47 49.72	33.53	IV.	6	2.4	24 59.9	44.3	48 23.25	32 0 14.2
86	9	. .	. .	58.5	13.8	. .	. .	. .	50 13.52	33.55	IV.	9	10.35	44 18.2	43.7	50 47.07	19 31.9
87	9	. .	. .	36.0	51.0	. .	. .	. .	51 50.90	33.56	IV.	10	8.7	48 5.0	43.2	52 24.46	32 23 18.2
88	10	. .	. .	17.3	32.0	. .	. .	. .	53 31.78	33.51	IV.	4	1.41	15 46.7	42.8	54 5.29	31 50 59.5
89	9	. .	. .	19.0	33.8	. .	. .	. .	55 33.54	33.51	IV.	4	4.42	17 18.2	42.3	56 7.05	52 30.5
90	7	. .	. .	. .	. .	. .	24.5	39.5	18 18 55.21	+ 33.51	VII.	4	9.31	−19 43.8	− 42.2	18 56 28.72	− 31 54 56.0

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(30) 56. Transit rejected. (See Zone of 1846, August 12.)
(30) 75. Transit over T. VII assumed as 54ˢ instead of 44ˢ, and minutes as 11 instead of 10.
(30) 82. Transits over T.'s III–V assumed as recorded over T.'s II–IV.

ZONE 30. JUNE 18. A. $D_0 = -31° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
91	8	. .	. .	. .	. .	37.5	52.0	7.2	18 57 22.78	+ 33.51	VII.	4	7 24	—18 39.6	— 41.8	18 57 56.29	— 31 53 51.4
92	10	. .	. .	. .	. .	42.5	57.0	. .	18 59 27.73	33.54	VI.	7	9.40	33 51.0	41.2	19 0 1.27	32 9 2.2
93	10	. .	. .	. .	. .	. .	56.0	10.5	19 1 26.55	33.55	VII.	9	12.	45 0.6	40.7	2 0.10	32 20 11.3
94	7	. .	. .	. .	. .	26.5	41.0	56.0	3 11.74	33.51	VII.	4	12.	21 0.2	40.2	3 45.25	31 56 10.4
95	6	42.6	57.5	12.0	. .	. .	. .	. .	6 26.97	33.54	III.	7	8.39	33 20.3	39.4	7 0.51	32 8 29.7
96	8	. .	. .	42.0	56.5	. .	. .	. .	8 56.52	33.54	IV.	7	5.38	31 48.8	38.8	9 30.06	6 57.6
97	6	. .	. .	59.0	13.8	28.5	. .	. .	10 13.70	33.54	III.	7	2.26	30 11.7	38.4	10 47.24	5 20.1
98	6	. .	43.0	58.0	12.8	. .	. .	. .	12 12.68	33.55	IV.	8	7.23	37 41.3	37.9	12 46.23	32 12 49.2
99	11	37.5	53.0	. .	. .	. .	. .	. .	13 22.09	33.57	II.	4	6.39	18 17.1	37.6	13 55.66	31 53 24.7
100	9	. .	. .	. .	. .	57.9	12.5	27.5	15 43.25	33.61	VII.	8	5.5	36 31.1	37.0	16 16.86	32 11 38.1
101	8	. .	. .	. .	53.0	7.8	22.5	. .	17 53.08	33.57	IV.	4	7.26	18 41.1	36.4	18 26.60	31 53 47.5
102	10	35.4	50.5	. .	. .	. .	. .	. .	18 19.88	33.58	I.	5	9.4	24 30.1	36.3	18 53.46	31 59 36.4
103	6	. .	. .	46.5	1.5	16.0	. .	. .	20 1.39	33.62	III.	10	9.4	48 33.7	35.9	20 35.01	32 23 39.6
104	9	. .	. .	. .	. .	18.5	33.0	48.0	21 3.75	33.59	VII.	6	7.16	27 37.2	35.6	21 37.34	2 42.8
105	11	. .	. .	29.0	44.0	. .	. .	. .	23 43.78	33.60	IV.	7	9.34	33 48.1	34.9	24 17.38	8 53.0
106	7	. .	. .	. .	56.2	11.0	. .	. .	25 56.15	33.58	V.	5	11.1	25 29.6	34.3	26 29.73	0 33.9
107	8	. .	. .	. .	. .	24.5	39.5	53.9	26 9.89	33.60	VII.	7	10.48	34 25.1	34.2	26 43.49	32 9 29.3
108	8	. .	. .	30.0	44.5	59.3	. .	. .	28 44.42	33.57	V.	3	9.29	14 43.5	33.5	29 17.99	31 49 47.0
109	9	. .	. .	. .	6.0	20.8	. .	. .	31 5.95	33.59	V.	6	6.0	26 59.2	32.9	31 39.54	32 2 2.1
110	9	24.8	39.5	. .	. .	. .	. .	. .	33 9.07	33.57	II.	5	8.0	23 58.0	32.4	33 42.64	31 59 0.4
111	5	. .	. .	. .	53.3	7.7	. .	. .	36 53.08	33.60	V.	9	3.44	40 50.3	31.4	36 26.68	32 15 51.7
112	8	. .	. .	. .	52.0	6.5	. .	. .	40 51.85	33.61	V.	10	8.29	48 16.0	30.3	41 25.46	23 16.3
113	8	. .	8.0	22.5	37.6	. .	. .	. .	42 37.52	33.61	IV.	10	4.35	46 17.8	29.8	43 11.13	32 21 17.6
114	8	. .	43.2	58.0	. .	. .	. .	. .	46 12.60	33.56	III.	5	9.30	24 43.6	28.9	46 46.16	31 59 42.5
115	10	. .	. .	. .	. .	. .	38.5	53.0	50 8.96	33.56	VII.	5	4.5	21 58.9	27.9	50 42.52	56 56.8
116	8	41.7	56.5	11.5	. .	. .	. .	. .	56 26.03	33.55	III.	5	8.27	24 11.8	26.3	56 59.58	59 8.1
117	11	. .	. .	3.5	18.0	33.0	. .	. .	19 58 17.95	33.53	V.	2	6.28	8 12.3	25.8	19 58 51.48	43 8.1
118	9	. .	49.3	4.0	18.5	. .	. .	. .	20 0 18.42	33.55	IV.	5	4.56	22 25.2	25.2	20 0 51.97	31 57 20.4
119	8	. .	. .	. .	. .	49.2	. .	18.5	2 34.48	33.58	VII.	9	6.50	42 23.9	24.7	3 8.06	32 17 18.6
120	9	. .	46.0	0.5	15.0	. .	. .	. .	4 15.07	33.54	IV.	4	10.45	20 21.7	24.4	4 48.61	31 55 16.1
121	9	. .	. .	53.0	7.5	22.0	. .	. .	6 7.27	33.52	V.	2	3.23	6 38.7	23.8	6 40.79	31 41 32.5
122	6	. .	9.5	24.5	39.5	. .	. .	. .	9 39.23	33.57	II.	8	5.18	36 37.9	22.9	10 12.80	32 11 30.8
123	8	19.5	34.7	49.0	. .	. .	. .	. .	18 3.66	33.50	III.	2	8.18	9 7.8	20.8	18 37.16	31 43 58.6
124	9	. .	9.5	24.3	39.2	. .	. .	. .	20 39.05	33.54	IV.	7	10.41	34 22.0	20.1	21 12.59	32 9 12.1
125	8	. .	. .	. .	. .	5.0	19.3	34.2	22 50.05	33.50	VII.	4	6.28	18 11.3	19.6	23 23.55	31 53 0.9
126	10	. .	. .	. .	18.0	32.8	. .	. .	27 17.92	33.48	V.	2	10.15	10 6.9	18.5	27 51.40	44 55.4
127	8	. .	. .	. .	. .	. .	36.6	51.8	28 7.41	33.49	VII.	4	7.5	18 30.0	18.3	28 40.90	31 53 18.3
128	5	46.8	1.8	16.6	31.5	. .	. .	. .	31 31.31	33.52	I.	7	7.6	32 32.8	17.5	32 4.83	32 7 20.3
129	10	48.5	3.5	. .	. .	. .	. .	. .	33 32.99	33.50	I.	6	12.0	30 0.7	17.0	34 6.49	32 4 47.7
130	9	. .	48.0	3.0	17.5	. .	. .	. .	35 17.37	33.48	IV.	4	3.38	16 45.8	16.6	35 50.85	31 51 32.4
131	8	. .	. .	. .	. .	44.2	59.0	13.5	37 29.49	33.49	VII.	6	10.4	29 0.9	16.1	38 2.98	32 3 47.0
132	8	. .	. .	. .	40.0	54.6	9.3	. .	39 39.90	33.48	VI.	5	8.11	24 3.6	15.5	40 13.38	31 58 49.1
133	7	. .	21.0	35.5	50.5	. .	. .	. .	40 50.44	33.51	IV.	9	5.39	41 48.5	15.3	41 23.95	32 16 33.8
134	9	. .	2.5	17 2	31.8	. .	. .	. .	42 31.76	33.47	IV.	5	4.39	22 16.6	14.9	43 5.23	31 57 1.5
135	7	. .	. .	. .	. .	38.2	53.0	8.0	44 23.67	33.48	VII.	6	11.12	29 36.4	14.4	44 57.15	32 4 20.8
136	8	19.2	34.1	49.1	. .	. .	. .	. .	45 3.71	33.49	III.	7	6.46	32 23.2	14.3	45 37.20	7 7.5
137	10	. .	. .	. .	. .	. .	27.0	41.2	46 57.37	33.49	VII.	9	5.15	41 35.9	13.9	47 30.86	16 19.8
138	8	. .	. .	. .	44.0	58.5	. .	. .	43.83	33.49	IV.	9	5.50	41 54.1	13.4	49 17.32	32 16 37.5
139	8	. .	. .	. .	. .	47.0	2.0	16.5	20 57 32.33	+ 33.41	VII.	1	6.20	— 3 8.0	— 11.4	20 58 5.74	— 31 37 49.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(30) 111. Minutes assumed as 35 instead of 36.
(30) 138. Minutes assumed as 48.

ZONE 30. JUNE 18. A. $D_0 = -31° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
140	8	. .	. .	. .	. .	. .	31.8	47.0	20 58 2.58	+ 33.40	VII.	2	9.45	− 4 52.3	− 11.3	20 58 35.98	− 31 39 33.6
141	9	. .	1.0	15.9	30.5	. .	. .	. .	21 0 30.48	33.45	IV.	7	4.8	31 3.3	10.8	21 1 3.93	32 5 44.1
142	10	. .	46.5	1.5	. .	. .	. .	. .	5 15.85	33.41	II.	3	6.27	13 11.3	9.7	5 49.26	31 47 51.0
143	10	. .	. .	22.0	36.9	51.4	. .	. .	7 36.52	33.38	V.	1	10.11	5 5.2	9.2	8 9.90	39 44.4
144	11	. .	. .	. .	44.5	59.2	13.5	. .	10 44.34	33.40	IV.	3	7.19	13 37.8	8.6	11 17.74	48 16.4
145	9	. .	. .	. .	25.0	40.0	. .	. .	21 11 25.02	+ 33.38	IV.	2	11.17	−10 38.3	− 8.4	21 11 58.40	− 31 45 16.7
ZONE 31. JUNE 22. K. $D_0 = -35° 14' 40''$.																	
1	7	. .	. .	. .	. .	. .	21.6	. .	17 5 51.17	+ 30.51	VII.	4	6.58	−18 25.9	− 30.2	17 6 21.68	− 35 33 36.1
2	9	. .	. .	. .	. .	. .	. .	42.1	6 55.87	30.50	VII.	2	3.34	6 42.5	29.8	7 26.37	21 52.3
3	6	. .	. .	48.0	3.4	. .	. .	49.2	12 3.24	30.55	IV.	7	3.3	30 30.9	28.2	12 33.79	45 39.1
4	9	22.4	. .	53.7	. .	. .	. .	. .	14 8.68	30.52	III.	5	3.23	21 37.9	27.5	14 39.20	36 45.4
5	9	. .	10.8	. .	41.8	. .	. .	. .	19 41.56	30.56	IV.	6	9.41	28 51.2	25.7	20 12.12	43 56.9
6	9	. .	. .	16.2	31.6	. .	. .	. .	20 31.45	30.57	V.	7	4.58	31 29.0	25.4	21 2.02	46 34.5
7	8	53.8	9.2	. .	. .	. .	. .	. .	23 39.88	30.57	II.	5	4.27	22 9.9	24.4	24 10.45	37 14.3
8	10	. .	. .	. .	48.9	. .	. .	. .	24 48.73	30.55	IV.	2	10.53	10 25.2	24.0	25 19.28	25 29.2
9	9	2.1	. .	33.2	. .	. .	. .	. .	26 48.29	30.58	III.	5	4.55	22 24.4	23.4	27 18.87	37 27.8
10	9	36.7	. .	8.0	. .	. .	. .	. .	28 23.25	30.60	III.	8	9.21	38 41.9	22.9	28 53.85	53 44.8
11	8	15.8	31.5	47.3	. .	. .	. .	. .	30 2.10	30.58	III.	4	6.51	18 22.9	22.4	30 32.68	33 25.3
12	7	56.5	12.1	. .	. .	. .	. .	. .	31 42.76	30.57	III.	6	8.4	28 2.1	21.8	32 12.74	43 3.9
13	8	. .	. .	. .	. .	3.9	18.9	34.9	31 48.58	30.57	VII.	2	9.53	9 54.2	21.8	32 19.15	24 56.0
14	10	. .	. .	. .	. .	32.8	. .	. .	33 17.41	30.58	VI.	2	10.42	10 19.4	21.3	33 47.99	25 20.7
15	7	. .	. .	. .	28.2	. .	58.8	. .	17 34 28.21	+ 30.58	VI.	3	4.58	−18 25.4	− 20.9	17 34 58.79	− 35 33 26.3
ZONE 32. JUNE 24. A. $D_0 = -29° 4' 50''$.																	
1	8	. .	. .	. .	. .	23.8	37.5	52.5	14 54 9.09	+ 29.39	VI.	2	8.40	− 9 22.2	− 70.6	14 54 38.48	− 29 15 22.8
2	7	. .	. .	. .	. .	1.3	15.5	. .	14 56 46.89	29.40	VI.	4	6.21	18 8.2	70.1	14 56 16.29	24 8.3
3	10	. .	. .	. .	6.0	20.5	34.5	49.5	15 4 6.01	29.42	VII.	1	11.12	5 36.2	68.6	15 4 35.43	11 34.8
4	5	30.3	45.0	59.5	13.8	. .	. .	. .	8 13.67	29.45	IV.	6	11.14	29 37.8	67.8	8 43.12	35 35.6
5	11	. .	. .	. .	20.0	. .	. .	3.0	11 19.83	29.46	VII.	6	8.54	27 26.0	67.2	10 49.29	33 23.2
6	10	. .	. .	52.0	6.0	. .	. .	. .	13 51.71	29.48	IV.	9	10.14	44 7.0	66.8	13 21.19	50 3.8
7	5	. .	. .	. .	58.0	12.6	26.8	41.0	28 57.96	29.49	VII.	2	11.45	10 52.4	63.5	29 27.45	16 45.9
8	11	. .	. .	. .	. .	53.5	8.0	. .	30 39.24	29.52	VI.	5	6.11	22 32.8	63.1	31 8.76	28 25.9
9	8	. .	. .	. .	. .	. .	. .	53.8	32 10.68	29.53	VII.	7	9.10	33 35.3	62.8	32 40.21	39 28.1
10	7	. .	33.5	48.0	2.4	. .	. .	. .	36 2.18	29.54	IV.	6	8.3	28 1.3	61.9	36 31.72	33 53.2
11	8	45.2	0.2	14.2	. .	. .	. .	. .	42 28.50	29.55	III.	4	9.26	19 41.8	60.4	42 58.05	25 32.2
12	9	. .	1.2	16.3	. .	. .	. .	. .	47 30.13	29.57	III.	6	6.54	27 26.4	59.3	47 59.70	33 15.7
13	8	. .	. .	. .	. .	. .	. .	34.0	49 50.87	29.58	VII.	7	8.5	33 2.5	58.7	50 20.45	38 51.2
14	9	. .	. .	. .	. .	26.5	. .	. .	53 12.19	29.60	V.	9	11.6	44 33.2	57.9	53 41.79	50 21.1
15	10	. .	. .	13.5	. .	. .	. .	. .	15 59 28.04	+ 29.62	III.	9	11.45	−44 52.9	− 56.4	15 59 57.66	− 29 50 39.3

CORRECTIONS.

Date.			Corr. of Clock.	Hourly rate.	m	n	c
1846.		h.	s.	s.	s.	s.	s.
June	22	12	+ 19.45	− 0.013	− 0.447	+ 0.372	+ 0.120
	24	12	+ 19.17	− 0.013	− 0.447	+ 0.372	+ 0.120

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 31	June 22, 17 6	30.10	69.0	51.7
	17 34	30.09	69.0	51.5
Zone 32	June 24, 14 54	30.09	71.0	63.1
	19 21	30.07	70.5	61.5

REMARKS.

(30) 140. Micrometer assumed as thread 1 instead of thread 2.
(32) 2. Minutes assumed as 55 instead of 56.
(32) 5. Minutes assumed as 10 instead of 11, and micrometer reading as $6^r.54$ instead of $8^r.54$.
(32) 6. Transits over T.'s IV and V assumed as recorded over T.'s III and IV, and minutes as 12 instead of 13.
(32) 8. Micrometer reading assumed as $5^r.11$ instead of $6^r.11$.
(32) 13. Transit over T. VII assumed as $34^s.0$ instead of $3^s.4$.

ZONE 32. JUNE 24. A. $D_0 = -29^\circ\ 4'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
16	10	. .	. .	32.5	47.0	. .	. .	. .	16 2 46.90	+ 29.63	IV.	8	11.11	−39 26.2	− 55.6	16 3 16.53	− 29 45 21.8
17	9	. .	. .	. .	58.0	12.5	. .	. .	4 58.01	29.63	V.	9	8.39	43 29.1	55.1	4 27.64	49 14.2
18	9	. .	. .	. .	. .	5.5	20.0	35.0	7 51.39	29.62	VII.	4	8.44	19 20.2	54.4	8 21.01	25 4.6
19	8	. .	. .	. .	42.0	. .	. .	. .	10 41.84	29.62	IV.	1	6.55	2 56.6	53.7	11 11.46	8 40.3
20	7	. .	. .	. .	. .	0.0	14.2	29.0	14 45.61	29.64	VII.	3	10.12	15 5.1	52.6	15 15.25	20 47.7
21	8	. .	. .	. .	. .	. .	. .	37.0	15 53.82	29.65	VII.	6	9.25	28 42.3	52.3	16 23.47	34 24.6
22	10	. .	. .	. .	. .	. .	12.0	27.0	19 43.58	29.66	VII.	6	4.23	26 9.7	51.4	20 13.24	31 51.1
23	11	. .	. .	. .	. .	29.5	45.0	. .	21 15.74	29.66	V.	7	9.55	33 58.4	51.0	21 45.40	39 39.4
24	9	30.5	. .	. .	. .	. .	. .	. .	24 13.88	29.67	I.	5	9.35	24 45.8	50.2	24 43.55	30 26.0
25	9	. .	. .	16.0	30.5	. .	. .	. .	25 30.16	29.66	IV.	2	4.21	7 8.5	49.9	25 59.82	12 48.4
26	9	5.0	19.5	. .	. .	. .	. .	. .	28 48.22	29.68	II.	6	10.10	29 5.3	49.0	29 17.90	34 44.3
27	7	. .	. .	. .	19.0	33.5	. .	. .	29 18.98	29.69	IV.	7	5.10	31 34.5	48.9	29 48.67	37 13.4
28	10	. .	. .	. .	59.0	13.2	. .	. .	34 58.79	29.69	IV.	3	4.55	12 25.4	47.4	34 28.48	18 2.8
29	9	. .	. .	. .	36.0	. .	. .	. .	35 35.84	29.68	IV.	1	7.38	3 48.5	47.2	36 5.52	9 25.7
30	9	. .	38.2	52.5	7.0	. .	. .	. .	37 6.64	29.70	IV.	3	6.42	13 19.5	46.8	37 36.34	18 56.3
31	10	. .	. .	. .	. .	. .	16.0	31.0	37 47.61	29.71	VII.	7	10.32	34 16.8	46.6	38 17.32	39 53.4
32	11	. .	. .	. .	. .	. .	33.0	48.0	39 4.63	29.71	VII.	7	11.30	34 46.1	46.3	39 34.34	40 22.4
33	9	. .	51.5	6.1	. .	. .	. .	. .	41 20.39	29.72	III.	9	8.42	43 20.5	45.7	41 50.11	48 56.2
34	7	. .	. .	. .	. .	. .	. .	20.5	41 37.01	29.69	VII.	1	6.42	3 19.8	45.6	42 6.70	8 55.4
35	11	. .	. .	. .	. .	29.5	. .	. .	43 15.19	29.73	V.	8	8.33	38 16.3	45.2	43 44.90	43 51.5
36	7	. .	. .	46.5	1.0	. .	. .	. .	45 0.83	29.72	IV.	7	2.10	30 3.6	44.7	45 30.55	35 38.3
37	11	22.5	37.0	. .	. .	. .	. .	. .	48 5.74	29.73	II.	7	5.15	31 36.8	43.8	48 35.47	37 10.6
38	11	. .	. .	. .	48.5	. .	. .	. .	48 34.07	29.75	IV.	10	6.50	47 25.4	43.7	49 3.82	52 59.1
39	7	. .	33.0	. .	. .	. .	. .	. .	51 1.36	29.73	II.	4	11.39	20 48.9	43.1	51 31.09	26 22.0
40	10	. .	. .	. .	. .	. .	. .	55.5	51 12.19	29.73	VII.	4	3.42	21 50.8	43.0	51 41.90	27 23.8
41	10	. .	. .	56.2	12.0	. .	. .	. .	54 11.31	29.76	IV.	10	5.10	46 34.9	42.2	54 41.07	52 7.1
42	11	. .	. .	. .	. .	3.5	17.0	32.5	55 48.91	29.73	VII.	4	11.41	20 49.8	41.7	56 18.64	26 21.5
43	8	. .	. .	0.5	15.0	. .	. .	. .	58 14.94	29.78	IV.	10	1.36	45 17.0	41.1	58 44.72	50 48.1
44	9	. .	. .	. .	19.0	32.5	47.0	. .	16 59 18.44	29.77	VI.	8	4.48	36 22.5	40.8	16 59 48.21	41 53.3
45	11	. .	. .	15.5	. .	. .	. .	. .	17 8 19.64	29.75	III.	4	5.32	36 44.9	38.2	17 8 49.39	42 13.1
46	7	. .	58.0	13.0	. .	. .	. .	. .	10 26.61	29.75	III.	2	3.27	6 41.2	37.7	10 56.36	12 8.9
47	9	. .	. .	. .	50.5	5.0	19.2	. .	13 50.51	29.78	VI.	7	1.36	34 44.9	36.7	14 20.29	40 11.6
48	7	. .	. .	. .	27.0	41.5	. .	. .	15 26.97	29.78	V.	5	12.00	25 59.4	36.3	15 56.75	31 25.7
49	5	. .	48.5	3.0	. .	. .	. .	. .	17 17.27	29.80	III.	8	8.00	37 59.6	35.7	17 47.07	43 25.3
50	7	. .	. .	. .	. .	. .	3.0	17.5	17 34.36	29.78	VII.	6	11.37	29 49.0	35.6	18 4.14	35 14.6
51	11	. .	. .	. .	. .	. .	. .	31.5	18 48.24	29.78	VII.	5	4.35	22 14.2	35.3	19 18.02	27 39.5
52	8	16.8	31.5	45.8	. .	. .	. .	. .	23 0.08	29.79	III.	6	5.14	26 35.9	34.1	23 29.87	32 0.0
53	9	. .	. .	. .	38.5	. .	. .	. .	24 38.34	29.76	IV.	1	6.48	3 23.2	33.6	25 8.10	8 46.8
54	7	34.0	48.5	3.0	. .	. .	. .	. .	29 17.14	29.79	III.	4	11.33	20 46.0	32.3	29 46.93	26 8.3
55	11	. .	20.5	. .	. .	. .	. .	. .	30 48.97	29.80	II.	5	10.27	25 12.3	31.8	31 18.77	30 34.1
56	8	. .	55.2	10.0	. .	. .	. .	. .	32 23.84	29.79	III.	4	2.7	16 0.0	31.4	32 53.63	21 21.4
57	12	. .	. .	43.0	. .	. .	. .	. .	33 57.18	29.79	III.	4	10.19	20 8.6	30.9	34 26.97	25 29.5
58	9	. .	. .	. .	11.8	. .	. .	. .	35 11.64	29.84	IV.	9	4.48	41 22.3	30.6	35 41.48	46 42.9
59	8	. .	. .	19.0	33.0	. .	. .	. .	36 33.08	29.82	IV.	7	3.14	30 35.9	30.2	37 2.90	35 56.1
60	10	. .	54.0	9.0	. .	. .	. .	. .	39 22.76	29.80	III.	4	5.	17 27.4	29.3	39 52.56	22 46.7
61	8	. .	. .	24.5	39.0	. .	. .	. .	40 38.66	29.79	IV.	2	6.30	8 13.7	28.9	41 8.45	13 32.6
62	9	. .	. .	9.0	23.0	. .	. .	. .	42 23.04	29.81	IV.	5	10.2	24 59.9	28.5	42 52.85	30 18.4
63	12	. .	. .	31.8	. .	. .	. .	. .	43 45.90	29.79	III.	3	10.	14 59.4	28.1	44 15.69	20 17.5
64	8	. .	. .	. .	3.5	. .	. .	. .	17 45 3.34	+ 29.85	IV.	9	4.42	−41 19.2	− 27.7	17 45 33.19	− 29 46 36.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(32) 17. Minutes of transit assumed as 3 instead of 4.
(32) 19. Micrometer reading assumed as 1 $5^{r}.55$ instead of 1 $6^{r}.55$.
(32) 28. Minutes assumed as 33 instead of 34.
(32) 38. Transit over T. III assumed as recorded over T. IV.
(32) 39. Micrometer reading assumed as $11^{r}.39$ instead of $1^{r}.39$.
(32) 40. Micrometer reading assumed as $13^{r}.42$ instead of $3^{r}.42$.
(32) 43. Micrometer reading assumed as 10 $2^{r}.36$ instead of 10 $1^{r}.36$.
(32) 45. T. III assumed as $5^{s}.5$ instead of $15^{s}.5$, and horizontal thread 8 instead of 4.
(32) 47. Micrometer reading assumed as 8 $1^{r}.36$ instead of 7 $1^{r}.36$.

ZONE 32. JUNE 24. A. $D_\circ = -29° 4' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
65	10	. .	. .	. .	15.0	30.0	. .	. .	17 46 15.22	+ 29.82	V.	5	8.40	−24 18.4	− 27.3	17 46 45.04	− 29 29 35.7
66	10	. .	. .	. .	. .	56.0	. .	. .	47 41.62	29.82	V.	6	7.14	27 36.5	26.9	48 11.44	32 53.4
67	7	. .	. .	57.0	11.5	26.0	. .	. .	49 11.34	29.81	V.	4	3.37	16 45.5	26.5	49 41.15	22 2.0
68	8	. .	39.5	. .	. .	. .	. .	. .	51 7.92	29.81	II.	4	10.42	20 20.1	26.0	51 37.73	25 36.1
69	11	. .	10.5	. .	. .	. .	. .	. .	52 43.97	29.82	II.	6	4.43	16 18.1	25.5	53 13.79	21 33.6
70	8	. .	. .	. .	45.0	59.0	. .	. .	53 30.42	29.85	V.	10	4.12	46 5.5	25.2	54 0.27	51 20.7
71	5	. .	. .	. .	56.5	11.0	25.3	. .	55 56.55	29.83	VI.	6	11.2	29 31.5	24.6	55 26.38	34 46.1
72	9	. .	. .	. .	. .	13.5	28.0	. .	57 59.25	29.82	VI.	4	11.35	20 45.9	23.9	58 29.07	25 59.8
73	9	. .	. .	. .	. .	36.5	. .	. .	57 22.10	29.83	V.	5	7.49	23 52.6	24.1	57 51.93	29 6.7
74	9	. .	. .	. .	. .	. .	. .	20.0	17 57 36.90	29.83	VII.	5	3.40	21 46.4	24.0	17 58 6.73	27 0.4
75	9	. .	46.8	. .	. .	. .	. .	. .	18 0 15.09	29.81	II.	2	7.23	8 40.3	23.3	18 0 44.90	13 53.6
76	7	. .	. .	55.0	9.5	. .	. .	. .	19 9.22	26.82	IV.	3	11.5	15 32.3	17.7	19 39.04	20 40.0
77	8	. .	. .	57.5	11.8	. .	. .	. .	22 11.59	29.82	IV.	3	4.33	12 14.3	16.8	22 41.41	17 21.1
78	7	. .	. .	. .	55.5	9.8	24.0	. .	26 55.37	29.87	VI.	9	9.5	43 31.9	15.5	26 25.24	48 37.4
79	9	. .	. .	. .	. .	29.0	43.0	. .	27 14.49	29.85	VI.	7	1.44	30 20.5	15.4	27 44.34	35 25.9
80	10	. .	. .	23.5	38.2	. .	. .	. .	32 37.94	29.85	IV.	7	5.41	31 50.1	13.8	33 7.79	36 53.9
81	9	. .	51.0	5.0	. .	. .	. .	. .	34 19.41	29.84	III.	6	10.6	29 3.4	13.3	34 49.25	34 6.7
82	8	. .	. .	. .	. .	10.0	24.2	38.5	34 55.52	29.84	VII.	7	8.6	33 33.3	13.1	35 25.36	38 36.4
83	10	. .	. .	. .	. .	55.8	9.5	24.5	36 41.22	29.86	VII.	7	9.36	33 48.5	12.6	37 11.08	38 51.1
84	6	52.2	7.0	21.2	35.5	. .	. .	. .	42 35.48	29.85	III.	6	7.55	27 57.2	10.8	43 5.33	32 58.0
85	11	. .	. .	. .	19.5	. .	. .	. .	52 19.34	29.85	IV.	6	7.51	27 55.2	8.0	52 49.19	32 53.2
86	8	. .	. .	. .	48.5	2.5	. .	. .	18 55 48.19	29.83	V.	3	6.8	13 2.2	7.0	18 56 18.02	17 59.2
87	7	. .	. .	. .	18.8	33.0	47.5	. .	19 1 18.71	29.86	VI.	7	10.50	39 24.7	5.4	19 1 48.57	44 20.1
88	9	58.3	13.0	27.3	. .	. .	. .	. .	4 41.56	29.85	III.	5	9.6	24 31.5	4.4	5 11.41	29 25.9
89	8	. .	. .	. .	4.0	18.5	. .	. .	12 4.01	29.87	V.	9	7.53	42 55.7	2.3	12 33.88	47 48.0
90	8	. .	. .	53.0	7.5	. .	. .	. .	15 7.33	29.85	IV.	7	3.28	30 42.9	− 1.4	15 37.18	35 34.3
91	9	. .	. .	. .	. .	. .	. .	52.5	19 21 23.88	+ 29.87	VII.	9	8.8	−43 2.9	+ 0.4	19 21 39.37	− 29 47 52.5

ZONE 33. JULY 6. A. $D_\circ = -27° 51' 0'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	17.5	31.3	46.0	15 12 3.25	+ 25.73	VII.	4	1.51	−16 21.9	− 44.9	15 12 28.98	− 28 8 6.8
2	9	. .	17.0	31.2	. .	. .	. .	. .	17 45.21	25.74	III.	4	9.56	19 57.0	44.5	18 10.95	11 41.5
3	9	. .	. .	. .	. .	. .	37.0	51.0	18 8.63	25.76	VII.	5	8.45	24 20.6	44.5	18 34.39	16 5.1
4	6	. .	. .	. .	. .	41.5	55.5	. .	19 27.33	25.76	VI.	6	7.18	28 38.8	44.4	19 53.09	20 23.2
5	8	. .	. .	. .	. .	. .	. .	38.0	19 55.43	25.76	VII.	6	7.15	27 36.6	44.4	20 21.19	19 21.0
6	9	. .	38.5	53.0	. .	. .	. .	. .	25 7.01	25.78	III.	7	5.36	31 47.5	44.1	25 32.79	23 31.6
7	7	. .	. .	. .	46.5	0.5	. .	. .	25 46.30	25.77	VII.	5	3.33	21 43.0	44.0	26 12.07	32 25.8
8	6	. .	. .	. .	. .	. .	6.5	20.5	26 38.18	25.78	VII.	8	7.54	37 56.0	44.0	27 3.96	29 40.0
9	10	48.0	2.5	. .	. .	. .	. .	. .	29 30.81	25.77	II.	4	8.27	19 12.0	43.8	29 56.58	10 55.8
10	8	. .	. .	44.5	59.0	. .	. .	. .	30 58.80	25.80	IV.	9	8.42	43 20.2	43.7	31 24.60	35 3.9
11	7	. .	. .	. .	. .	. .	28.0	42.0	31 59.74	25.80	VII.	10	12.	50 1.2	43.7	32 25.54	41 44.9
12	9	. .	. .	18.5	32.6	. .	. .	. .	34 32.49	25.79	IV.	6	10.37	29 19.1	43.4	34 58.28	21 2.5
13	7	. .	. .	. .	38.0	52.0	5.8	. .	35 37.77	25.78	VI.	3	3.13	11 33.9	43.3	36 3.55	3 17.2
14	10	. .	. .	. .	. .	. .	51.5	6.0	37 23.31	25.78	VII.	2	7.48	8 52.9	43.2	37 49.09	0 36.1
15	7	. .	. .	. .	. .	. .	14.0	28.2	38 45.74	25.80	VII.	6	7.15	27 36.6	43.1	39 11.54	19 19.7
16	9	. .	. .	. .	. .	. .	. .	17.0	39 34.43	25.80	VII.	6	6.15	27 6.3	43.1	40 0.23	18 49.4
17	8	. .	. .	. .	. .	. .	. .	16.5	40 33.87	25.80	VII.	5	5.57	22 55.7	43.0	40 59.67	14 38.7
18	9	. .	. .	. .	11.5	25.5	. .	. .	15 42 11.32	+ 25.80	V.	6	2.56	−25 26.2	− 42.8	15 42 37.12	− 28 17 9.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 6,	12	+ 15.75	− 0.013	− 0.463	+ 0.300	0.000
6,	12	− 15.73	− 0.013	− 0.463	+ 0.300	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846 h. m.	in.	°	°
Zone 33	July 6, 15 12	29.80	80.0	77.5
	16 10	29.81	80.0	74.0

REMARKS.

(32) 69. T. II assumed as $15^{s}.5$, not $10^{s}.5$; and micrometer as 4 $2^{r}.43$ instead of 6 $4^{r}.43$.
(32) 70. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.
(32) 71. Minutes assumed as 54 instead of 55.
(32) 74. Transit over T. VII assumed as recorded over T. VI.
(32) 78. Minutes assumed as 25 instead of 26.
(32) 79. Micrometer reading assumed as $2^{r}.44$ instead of $1^{r}.44$.
(32) 82. Right ascension differs 10^{s} from Arg. Z. 221, 119; micrometer reading assumed as $9^{r}.6$ instead of $8^{r}.6$.
(32) 87. Micrometer reading assumed as 8 $10^{r}.50$ instead of 7 $10^{r}.50$.
(33) 1. Micrometer reading assumed as 4 $2^{r}.51$ instead of 4 $1^{r}.51$.
(33) 4. Micrometer reading assumed as $9^{r}.18$ instead of $7^{r}.18$.
(33) 7. Micrometer thread assumed as 9 instead of 5.

ZONE 33. JULY 6. A. D$_0$=−27° 51′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
19	8	..	..	..	..	..	15.3	29.5	15 43 47.10	+ 25.82	VII.	9	2.28	—40 10.9	— 42.7	15 44 12.92	— 28 31 53.6
20	10	..	..	13.5	27.5	..	..	..	46 27.48	25.82	IV.	7	10.5	34 3.4	42.5	46 53.30	25 45.9
21	7	..	..	..	28.0	42.0	..	..	47 27.82	25.81	V.	5	4.49	22 21.7	42.4	47 53.63	14 4.1
22	9	..	..	38.5	53.0	..	..	..	49 52.79	25.83	IV.	9	5.16	41 36.2	42.2	50 18.62	28 33 18.4
23	6	..	..	..	32.5	46.5	..	..	51 32.27	25.80	V.	1	5.17	2 37.5	42.1	51 58.07	27 54 19.6
24	9	..	..	..	..	..	..	1.0	52 18.25	25.81	VII.	3	7.24	13 40.4	42.0	52 44.06	28 5 22.4
25	8	..	..	..	..	..	..	57.2	53 14.42	25.81	VII.	3	1.42	11 17.9	41.9	53 40.23	2 59.8
26	9	..	..	..	23.0	37.0	..	..	55 22.79	25.81	V.	3	7.7	13 32.2	41.7	55 48.60	5 13.9
27	8	..	..	..	..	..	23.0	37.8	55 55.00	25.81	VII.	4	5.56	17 55.5	41.7	56 20.81	9 37.2
28	8	..	..	..	..	..	9.8	23.7	57 41.43	25.84	VII.	8	3.40	35 47.7	41.5	58 7.27	27 29.2
29	8	..	..	..	..	..	26.0	40.0	15 58 57.68	25.84	VII.	8	1.35	34 44.6	41.4	15 59 23.52	28 26 26.0
30	9	..	..	..	..	..	23.0	37.5	16 0 54.80	25.81	VII.	1	8.24	4 11.6	41.2	16 1 20.61	27 55 52.8
31	5	..	..	..	..	48.8	2.5	17.0	2 34.39	25.81	VII.	2	9.16	9 37.4	41.1	3 0.20	28 1 18.5
32	8	..	..	..	..	17.0	30.9	..	6 2.78	25.86	VI.	9	12.0	46 0.7	40.8	6 28.64	37 41.5
33	4	51.5	5.5	20.2	34.2	..	..	..	8 34.07	25.84	IV.	5	5.3	22 28.8	40.5	8 59.91	14 9.3
34	9	..	..	..	31.0	45.0	..	..	16 10 30.82	+ 25.84	V.	6	10.30	—29 15.5	— 40.4	16 10 56.66	— 28 20 55.9
ZONE 34. JULY 7. K. D$_0$=−39° 9′ 40″.																	
1	7	..	..	..	39.9	..	..	..	16 9 39.72	+ 25.54	IV.	1	11.40	— 5 46.2	— 17.7	16 10 5.26	— 39 15 43.9
2	8	..	..	..	56.3	..	..	..	11 56.12	25.60	IV.	8	13.50	41 0.5	17.1	12 21.72	50 57.6
3	8	48.0	..	..	..	..	..	..	16 36.66	25.58	II.	4	7.14	18 33.4	15.8	17 2.24	28 29.2
4	9	9.8	..	..	..	..	..	..	20 58.86	25.63	I.	9	9.15	43 41.2	14.5	21 24.49	53 35.7
5	7	..	14.4	..	47.0	..	..	..	27 46.69	25.60	IV.	2	11.26	10 39.8	12.6	28 12.29	20 32.4
6	7	27.6	..	..	..	..	..	..	29 16.27	25.62	II.	4	8.27	19 10.4	12.2	29 41.89	29 2.6
7	9	..	..	..	..	..	25.3	..	28 53.25	25.61	VI.	2	6.49	8 19.1	12.3	29 18.86	18 11.4
8	8	..	..	..	..	..	13.6	..	29 41.43	25.63	VII.	6	4.33	26 14.9	12.0	30 7.06	36 6.9
9	8	..	..	..	..	..	32.2	..	30 0.06	25.63	VII.	5	10.9	25 2.8	11.9	30 25.69	34 54.7
10	8	..	..	..	..	42.0	58.1	..	31 25.91	25.63	VI.	4	11.51	20 53.8	11.5	31 51.54	30 45.3
11	8	..	..	..	..	37.8	..	..	32 21.54	25.61	V.	1	6.36	3 11.9	11.2	32 47.15	13 3.1
12	8	22.7	39.1	..	..	..	..	..	35 11.47	25.65	II.	5	11.26	25 42.2	10.4	35 37.12	35 32.6
13	7	..	..	..	30.3	..	..	..	35 30.12	25.64	VII.	4	10.36	20 15.5	10.3	35 55.76	30 5.8
14	6	..	..	..	..	..	..	8.6	36 19.78	25.62	VII.	1	11.2	5 36.3	10.1	36 45.40	15 26.4
15	8	..	..	..	..	..	..	2.1	37 13.65	25.66	VII.	7	4.55	31 27.9	9.8	37 39.31	41 17.7
16	10	26.5	..	..	..	..	..	..	40 15.42	25.67	I.	7	10.19	34 7.2	9.0	40 41.09	43 56.2
17	9	..	..	..	32.0	..	..	..	40 31.82	25.66	IV.	5	8.53	24 24.8	8.9	40 57.48	34 13.7
18	10	..	14.0	..	..	..	..	..	43 46.19	25.65	II.	3	8.15	14 3.5	7.9	44 11.84	23 51.4
19	6	..	..	37.9	..	..	..	..	44 53.46	25.64	IV.	1	11.13	5 32.3	7.6	45 19.10	15 19.9
20	9	30.6	..	..	..	..	..	..	46 19.50	25.68	II.	7	9.51	33 58.4	7.2	46 45.18	43 45.6
21	9	16.8	..	49.6	..	..	..	..	48 5.29	25.66	III.	2	10.5	9 58.8	6.7	48 30.95	19 45.5
22	7	..	0.8	..	33.5	..	..	..	52 33.38	25.71	IV.	9	6.3	42 4.5	5.3	52 59.09	51.49.8
23	9	..	..	54.2	..	..	..	..	16 54 10.37	+ 25.71	IV.	8	11.32	—39 50.5	— 4.8	16 54 36.08	— 39 49 35.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
July 7,	12	— 14.66	— 0.030	— 0.463	+ 0.300	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 34	July 7,	16 10	29.93	78.0	68.0
		16 54	29.93	77.0	67.0

REMARKS.

(33) 25. Micrometer reading assumed as 2^{r}.42 instead of 1^{r}.42.
(33) 32. Micrometer reading assumed as 14^{r}.0 instead of 12^{r}.0.
(34) 14. Micrometer reading assumed as 11^{r}.22 instead of 11^{r}.2.

Zone 35. July 7. K. $D_{\circ} = -34^{\circ}\ 6'$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	. .	. .	18.1	19 15 32.76	+ 25.23	VII.	8	3.30	—35 43.5	. .	19 15 57.99	
2	8	30.9	. .	. .	. .	. .	. .	. .	20 16.36	25.17	II.	2	4.12	7 2.5	. .	20 41.53	
3	11	. .	19.3	. .	. .	. .	. .	. .	22 49.73	25.21	III.	8	5.41	36 50.2	. .	23 14.94	
4	5.6	. .	. .	. .	29.0	44.1	. .	. .	23 28.88	25.18	V.	5	9.43	24 50.2	. .	23 54.06	
5	8	46.3	. .	. .	. .	. .	. .	. .	25 32.27	25.21	III.	9	10.10	44 6.3	. .	25 57.48	
6	8	15.1	. .	. .	. .	. .	. .	. .	27 0.89	25.19	II.	7	4.29	31 14.0	. .	27 26.08	
7	9	. .	. .	. .	. .	51.5	. .	. .	27 36.25	25.14	VI.	1	8.19	4 7.5	. .	28 1.39	
8	7	. .	. .	. .	. .	. .	. .	5.8	28 20.61	25.22	VII.	10	5.19	46 40.5	. .	28 45.83	
9	9	. .	. .	. .	. .	9.4	. .	. .	29 54.24	25.16	V.	5	4.28	22 10.8	. .	30 19.40	
10	10	. .	. .	. .	. .	. .	. .	27.3	30 41.62	25.14	VII.	2	9.52	9 54.2	. .	31 6.76	
11	10	. .	6.0	. .	. .	. .	. .	. .	39 36.37	25.15	III.	7	5.34	31 47.0	. .	40 1.52	
12	9	56.5	. .	. .	. .	. .	. .	. .	47 42.29	25.12	II.	7	3.50	30 54.3	. .	48 7.41	
13	8	. .	54.5	. .	25.0	. .	. .	. .	51 24.82	25.09	II.	5	11.57	25 57.8	. .	51 49.91	
14	8	. .	. .	. .	27.8	. .	. .	. .	52 27.62	25.06	IV.	2	11.57	10 57.9	. .	52 52.68	
15	9	. .	. .	. .	56.7	. .	. .	. .	54 56.52	25.05	IV.	1	8.53	4 25.0	. .	55 21.57	
16	6.7	36.6	52.4	. .	. .	. .	. .	. .	19 59 22.33	+ 25.05	II.	3	5.14	—12 33.9	. .	19 59 47.38	

Zone 36. July 9. K. $D_{\circ} = -26^{\circ}\ 35'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	17.4	. .	. .	. .	. .	. .	. .	16 1 59.52	+ 23.38	II.	2	7.29	— 8 43.7	— 52.0	16 2 22.90	— 26 45 15.7
2	8	. .	. .	. .	. .	. .	16.1	. .	1 48.29	23.37	VI,	1	8.57	4 28.7	52.1	2 11.66	26 41 0.8
3	8	. .	. .	. .	. .	. .	. .	57.1	2 15.08	23.41	VII.	7	7.48	32 53.7	52.0	2 38.49	27 9 25.7
4	9	. .	. .	. .	52.8	. .	. .	. .	3 52.65	23.39	V.	5	8.36	24 16.4	51.6	4 16.04	27 0 48.0
5	7	2.3	16.4	. .	. .	58.8	. .	. .	5 44.49	23.38	II.	3	5.30	12 43.2	51.2	6 7.87	26 49 14.4
6	10	59.8	. .	. .	. .	. .	. .	. .	11 41.99	23.38	I.	3	11.0	15 29.6	49.8	12 5.37	51 59.4
7	7	11.4	25.4	. .	. .	. .	. .	. .	14 53.42	23.38	III.	2	12.31	11 15.4	49.0	15 16.80	26 47 44.4
8	8	. .	. .	. .	32.8	. .	. .	. .	15 32.65	23.43	VI.	9	6.51	42 23.8	48.8	15 56.08	27 18 52.6
9	8	. .	. .	. .	50.8	. .	. .	. .	16 50.65	23.43	IV.	9	9.58	43 58.4	48.5	17 14.08	27 20 26.9
10	7	. .	. .	. .	35.0	. .	. .	. .	17 34.85	23.39	V.	3	8.24	14 11.2	48.3	17 58.24	26 50 39.5
11	10	. .	. .	. .	. .	. .	. .	19.0	19 36.90	23.40	VII.	5	11.17	25 37.3	47.9	20 0.30	27 2 5.2
12	6	. .	. .	. .	. .	11.1	. .	39.3	20 57.03	23.39	VII.	3	8.15	14 6.3	47.5	21 20.42	26 50 33.8
13	7	. .	. .	. .	. .	21.0	. .	. .	25 6.90	23.39	V.	2	12.0	24 4.9	46.5	25 30.29	27 0 31.4
14	10	. .	. .	25.7	. .	. .	. .	. .	26 39.72	23.42	III.	7	9.27	33 44.1	46.1	27 3.14	27 10 10.2
15	10	. .	. .	. .	. .	31.1	. .	. .	27 17.00	23.39	V.	2	8.29	9 14.2	46.0	27 40.39	26 45 40.2
16	7	. .	. .	44.0	57.6	. .	. .	. .	28 57.51	23.38	IV.	1	9.0	4 30.4	45.6	29 20.89	40 56.0
17	7	. .	. .	37.8	. .	. .	. .	. .	29 51.65	23.40	III.	5	4.58	22 26.3	45.3	30 15.05	58 51.6
18	8	. .	28.8	. .	. .	. .	. .	. .	31 56.71	23.39	III.	3	4.14	12 4.9	44.8	32 20.10	48 29.7
19	8	. .	. .	. .	. .	24.1	. .	. .	32 10.01	23.39	VI.	3	4.26	12 10.9	44.8	32 33.40	48 35.7
20	6.7	. .	. .	. .	. .	20.9	. .	. .	33 6.83	23.40	VI.	4	4.35	17 14.9	44.5	33 30.23	26 53 39.4
21	5.6	. .	. .	21.9	. .	. .	. .	. .	34 35.92	23.42	III.	7	9.23	33 42.0	44.1	34 59.34	27 10 6.1
22	8	. .	. .	. .	8.7	. .	. .	. .	35 8.55	23.42	V.	7	9.36	33 48.6	44.0	35 31.97	10 12.6
23	10	. .	. .	26.6	. .	. .	. .	. .	36 40.47	23.40	III.	5	8.52	25 25.0	43.6	37 3.87	1 48.6
24	7	. .	. .	. .	. .	8.0	. .	. .	36 54.00	23.42	VII.	7	13.25	35 43.9	43.6	37 17.42	12 7.5
25	9	. .	57.1	. .	. .	. .	. .	. .	39 25.30	23.43	III.	9	5.20	41 38.0	42.9	39 48.73	27 18 0.9
26	9	. .	. .	. .	6.3	. .	. .	. .	40 6.15	23.38	V.	1	11.0	5 31.0	42.8	40 29.53	26 41 53.8
27	8	. .	20.3	. .	. .	. .	. .	. .	41 48.23	23.39	II.	3	9.37	14 47.9	42.3	42 11.62	51 10.2
28	8	. .	. .	19.1	. .	. .	. .	. .	42 32.65	23.38	III.	1	6.17	3 8.0	42.2	42 56.03	39 30.2
29	8	. .	. .	. .	. .	. .	. .	19.4	16 42 37.08	+ 23.39	VII.	2	7.53	— 8 55.6	— 42.1	16 43 0.47	— 26 45 17.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
July 9,	12	— 13.46	— 0.034	— 0.576	+ 0.428	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 35	July 7,	19 15	29.93	75.0	65.0
		19 59	29.94	74.5	64.8
Zone 36	July 9,	16 2	29.97	81.0	73.5
		19 2	29.99	78.0	71.0

REMARKS.

(36) 23. Micrometer reading assumed as $10^{r}.52$ instead of $8^{r}.52$.

ZONE 36. JULY 9. K. D₀=−26° 35′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			I.	′ ″	″	h. m. s.	° ′ ″
30	10	. .	. .	59.3	. .	. .	. .	. .	16 44 13.48	+ 23.43	III.	9	11.37	−44 48.4	− 41.7	16 44 36.91	− 27 21 10.1
31	8	. .	. .	. .	. .	57.1	. .	. .	44 43.12	23.43	V.	9	7.20	42 38.6	41.6	45 6.55	19 0.2
32	10	. .	. .	. .	9.1	. .	. .	. .	47 8.95	23.42	V.	8	12.1	40 1.0	41.0	47 32.37	27 16 22.0
33	8	. .	. .	. .	. .	. .	. .	58.8	47 16.45	23.38	VII.	1	12.19	6 10.5	40.9	47 39.83	26 42 31.4
34	7	. .	. .	. .	. .	. .	. .	51.4	48 9.55	23.43	VII.	9	13.45	45 52.7	40.7	48 32.98	27 22 13.4
35	7	. .	. .	. .	41.5	. .	. .	. .	49 41.35	23.40	V.	4	10.31	20 14.8	40.3	50 4.75	26 56 35.1
36	8	53.5	. .	. .	. .	. .	. .	. .	51 35.78	23.40	II.	5	10.0	24 58.6	39.8	51 59.18	27 1 18.4
37	9	. .	. .	30.2	44.2	. .	. .	. .	51 44.08	23.41	V.	6	4.51	26 24.2	39.8	52 7.49	27 2 44.0
38	8	. .	. .	. .	. .	. .	. .	44.4	52 2.06	23.39	VII.	2	4.23	7 9.6	39.7	52 25.45	26 43 29.3
39	7	. .	. .	. .	. .	35.5	. .	. .	53 21.42	23.40	IV.	4	2.37	16 15.5	39.4	53 44.82	52 34.9
40	8	. .	. .	. .	. .	32.5	. .	. .	54 18.45	23.40	V.	5	6.51	23 23.4	39.1	54 41.85	59 42.5
41	7	. .	. .	. .	. .	. .	. .	15.8	54 33.45	23.39	VII.	2	2.27	6 11.0	39.0	54 56.84	42 30.0
42	9	. .	. .	13.0	. .	. .	. .	. .	56 26.63	23.39	IV.	2	5.16	7 36.7	38.5	56 50.02	43 55.2
43	10	. .	. .	. .	16.8	. .	. .	. .	57 16.65	23.40	IV.	4	3.22	16 38.2	38.3	57 40.05	26 52 56.5
44	9	. .	52.8	. .	. .	. .	. .	. .	16 59 20.94	23.42	IV.	8	3.5	35 30.4	37.8	16 59 44.36	27 11 48.2
45	8	12.0	. .	40.4	. .	. .	. .	. .	17 0 54.12	23.39	IV.	3	4.32	12 14.1	37.4	17 1 17.51	26 48 31.5
46	6.7	45.8	. .	. .	. .	. .	. .	. .	2 27.98	23.39	II.	3	9.17	14 37.8	36.9	2 51.37	50 54.7
47	8	. .	. .	39.1	. .	. .	. .	. .	2 52.82	23.39	IV.	3	7.9	13 33.4	36.8	3 16.21	49 50.2
48	6.7	48.3	2.2	. .	. .	. .	58.5	. .	4 30.27	23.39	II.	3	3.22	11 38.5	36.4	4 53.66	26 47 54.9
49	8	. .	16.0	30.0	. .	. .	. .	. .	6 44.22	23.42	III.	10	5.49	46 54.0	35.8	7 7.64	27 23 9.8
50	8	26.3	. .	. .	. .	. .	. .	. .	11 8.70	23.41	I.	7	11.30	34 45.9	34.6	11 32.11	11 0.5
51	7	. .	. .	. .	19.4	. .	. .	. .	11 19.25	23.41	IV.	8	10.46	39 23.2	34.6	11 42.66	15 37.8
52	9	. .	. .	. .	2.9	. .	. .	. .	14 21.75	23.41	IV.	8	12.59	40 30.4	33.7	14 45.16	27 16 44.1
53	10	. .	. .	. .	. .	. .	18.2	. .	14 50.37	23.38	VII.	2	11.1	10 30.6	33.6	15 13.75	26 46 44.2
54	8	. .	. .	. .	. .	12.9	. .	. .	15 58.82	23.38	V.	3	9.35	14 47.0	33.3	16 22.20	26 51 0.3
55	8	. .	19.9	. .	. .	. .	. .	. .	20 47.98	23.40	III.	6	9.1	28 30.5	32.0	21 11.38	27 4 42.5
56	9	. .	. .	. .	33.5	. .	. .	. .	23 33.35	23.42	IV.	9	12.9	45 4.6	31.2	23 56.77	27 21 15.8
57	6	. .	. .	. .	2.1	. .	. .	. .	25 1.95	23.37	IV.	1	3.24	1 40.7	30.8	25 25.32	26 37 51.5
58	10	. .	. .	. .	. .	19.9	. .	. .	26 5.85	23.38	V.	5	3.20	21 36.8	30.5	26 29.23	57 47.3
59	9	. .	. .	. .	18.1	. .	. .	. .	27 17.95	23.38	IV.	5	7.28	23 42.1	30.2	27 41.33	59 52.3
60	7	38.4	. .	. .	. .	. .	. .	. .	29 20.57	23.37	II.	3	8.35	14 16.6	29.6	29 43.94	26 50 26.2
61	9	. .	. .	. .	. .	36.4	. .	. .	29 22.43	23.41	V.	9	11.33	44 46.4	29.6	29 45.84	27 20 56.0
62	7	. .	36.9	50.9	. .	. .	. .	. .	31 5.07	23.41	IV.	9	6.45	42 21.0	29.1	31 28.48	27 18 30.1
63	6.7	. .	52.1	. .	. .	. .	. .	. .	32 19.99	23.37	II.	2	9.8	9 33.7	28.8	32 43.36	26 45 42.5
64	9	51.4	. .	. .	. .	. .	. .	. .	33 33.79	23.40	II.	7	9.18	33 39.4	28.4	33 57.19	27 9 47.8
65	8	. .	58.0	. .	. .	. .	. .	. .	34 26.24	23.41	III.	10	5.45	46 52.0	28.2	34 49.65	23 0.2
66	7	. .	. .	44.8	. .	. .	. .	. .	34 58.81	23.40	III.	7	8.28	33 14.3	28.0	35 22.21	9 22.3
67	9	. .	. .	. .	. .	33.3	. .	. .	35 19.34	23.40	IV.	10	6.28	47 13.8	28.0	35 42.74	23 21.8
68	9	. .	. .	. .	. .	. .	31.2	. .	36 3.26	23.39	VII.	7	7.33	32 46.1	27.7	36 26.65	8 53.8
69	8	. .	. .	. .	. .	. .	. .	24.7	36 42.85	23.40	VII.	10	4.38	46 17.8	27.6	37 6.25	27 22 25.4
70	6	. .	. .	28.0	. .	56.0	. .	. .	38 41.85	23.38	V.	4	7.39	18 48.0	27.0	39 5.23	26 54 55.0
71	9	. .	. .	. .	50.1	. .	. .	. .	39 49.95	23.40	IV.	9	10.53	44 26.2	26.7	40 13.35	27 20 32.9
72	7	. .	. .	. .	. .	34.0	. .	. .	40 19.90	23.36	V.	2	8.40	9 19.7	26.6	40 43.26	26 45 26.3
73	6	. .	. .	. .	. .	. .	. .	17.0	40 34.88	23.37	VII.	5	8.48	24 22.1	26.5	40 58.25	27 0 28.6
74	8	. .	. .	. .	. .	9.8	. .	. .	41 55.72	23.36	V.	3	7.9	13 33.3	26.1	42 19.08	26 49 39.4
75	8	. .	. .	. .	. .	. .	. .	1.0	42 18.76	23.36	VII.	3	9.43	14 50.7	26.0	42 42.12	26 50 56.7
76	6	. .	. .	. .	. .	0.4	. .	. .	43 46.41	23.39	V.	8	8.57	38 28.1	25.6	44 10.80	27 14 33.7
77	9	. .	. .	. .	. .	. .	8.2	. .	44 40.23	23.39	VII.	8	10.38	39 18.8	25.3	45 3.62	27 15 24.1
78	7	56.9	. .	. .	. .	. .	. .	. .	17 46 39.01	+ 23.35	II.	2	6.33	− 8 15.5	− 24.8	17 47 2.36	− 26 44 20.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 36. JULY 9. K. $D_0=-26^\circ\ 35'\ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
79	8	. .	. .	56.0	. .	. .	. .	. .	17 47 9.96	+ 23.38	IV.	7	2.45	−30 21.1	− 24.6	17 47 33.34	− 27 6 25.7
80	10	. .	. .	49.9	. .	. .	. .	. .	48 3.75	23.36	IV.	5	6.21	23 8.2	24.4	48 27.11	26 59 12.6
81	9	. .	. .	55.1	. .	. .	. .	. .	49 9.29	23.39	IV.	10	3.19	45 38.3	24.1	49 32.68	27 21 42.4
82	9	. .	. .	. .	. .	. .	59.2	. .	49 31.29	23.36	VII.	5	.32	20 11.6	24.0	49 54.65	26 56 15.6
83	8	. .	. .	. .	. .	. .	. .	31.8	49 49.72	23.37	VII.	6	6.8	27 2.8	23.9	50 13.09	27 3 6.7
84	9	. .	. .	. .	. .	. .	. .	19.6	51 37.45	23.36	VII.	4	13.22	21 40.8	23.4	52 0.81	26 57 44.2
85	7	. .	. .	. .	. .	12.8	. .	. .	52 58.77	23.37	VI.	6	8.32	28 15.7	23.0	53 22.14	27 4 18.7
86	7	. .	. .	. .	. .	8.3	. .	. .	53 54.22	23.35	V.	3	11.43	15 51.7	22.7	54 17.57	26 51 54.4
87	7	. .	. .	. .	44.4	. .	. .	. .	54 44.25	23.35	IV.	3	9.44	14 51.6	22.5	55 7.60	26 50 54.1
88	8	. .	. .	. .	. .	30.0	. .	. .	55 15.97	23.36	VI.	6	10.22	29 10.5	22.3	55 39.33	27 5 12.8
89	8	. .	. .	. .	. .	25.7	. .	. .	56 11.65	23.36	VI.	5	5.34	22 44.4	22.1	56 35.01	26 58 46.5
90	8	. .	. .	. .	. .	. .	59.6	. .	56 31.75	23.34	VII.	3	3.27	11 40.8	22.0	56 55.09	26 47 42.8
91	9	. .	. .	. .	. .	. .	42.5	. .	57 14.57	23.37	VI.	7	3.11	30 34.0	21.8	57 37.94	27 6 35.8
92	8	. .	. .	. .	. .	. .	. .	59.6	17 58 17.73	23.39	VII.	9	9.11	43 34.3	21.5	17 58 41.12	27 19 35.8
93	9	. .	4.8	. .	. .	. .	. .	. .	18 1 32.63	23.33	II.	1	8.11	4 5.5	20.6	18 1 55.96	26 40 6.1
94	8	. .	. .	. .	. .	45.4	. .	. .	3 31.41	23.38	VI.	8	9.34	38 46.7	20.0	3 54.79	27 14 46.7
95	10	. .	. .	23.0	. .	. .	. .	. .	6 37.10	23.37	IV.	8	11.35	39 48.0	19.1	7 0.47	15 47.1
96	4.5	. .	48.3	2.4	. .	. .	. .	. .	8 16.42	23.36	III.	7	10.55	29 28.1	18.6	8 39.78	5 26.7
97	9	. .	. .	. .	. .	. .	. .	20.5	8 38.51	23.36	VII.	7	12.32	35 17.2	18.6	9 1.87	27 11 15.8
98	8	. .	12.1	. .	. .	. .	. .	. .	12 40.11	23.35	III.	5	5.4	22 29.3	17.4	13 3.46	26 58 26.7
99	8	. .	. .	. .	. .	58.1	. .	. .	12 44.05	23.35	V.	5	5.16	22 35.4	17.4	13 7.40	58 32.8
100	9	. .	. .	. .	. .	43.2	. .	. .	13 29.12	23.33	V.	3	8.59	14 29.0	17.2	13 52.45	26 50 26.2
101	9	. .	. .	. .	. .	. .	. .	21.5	13 39.39	23.35	VII.	5	10.42	25 19.7	17.1	14 2.74	27 1 16.8
102	8	. .	. .	57.7	. .	. .	. .	. .	16 11.94	23.37	IV.	10	9.20	48 40.6	16.4	16 35.21	27 24 37.0
103	6.5	. .	. .	. .	45.4	. .	. .	. .	17 50.27	23.31	V.	1	14.7	7 5.4	16.0	18 22.58	26 43 1.4
104	5.6	. .	. .	. .	. .	. .	49.0	. .	18 21.14	23.32	VII.	3	9.8	14 33.1	15.8	18 44.46	50 28.9
105	7	. .	. .	. .	. .	27.0	. .	. .	19 12.88	23.31	V.	1	8.53	4 26.8	15.6	19 36.19	26 40 22.4
106	10	. .	. .	28.1	. .	. .	. .	. .	20 41.98	23.34	III.	5	10.31	25 14.5	15.1	21 5.32	27 1 9.6
107	10	. .	. .	. .	. .	28.7	. .	. .	21 14.67	23.34	VI.	6	8.20	28 9.6	15.0	21 38.01	4 4.6
108	7	. .	. .	. .	28.8	. .	. .	. .	22 28.65	23.37	IV.	9	8.45	43 21.6	14.6	22 52.02	19 16.2
109	9	. .	. .	. .	. .	5.4	. .	. .	22 51.42	23.37	VI.	9	5.9	41 32.3	14.5	23 14.79	27 17 26.8
110	9	. .	. .	. .	. .	0.9	. .	. .	23 46.85	23.33	V.	5	5.5	22 29.8	14.2	24 10.18	26 58 24.0
111	8	. .	. .	. .	. .	. .	42.0	. .	24 14.12	23.32	VII.	4	6.30	18 12.7	14.1	24 37.44	26 54 6.8
112	10	38.8	. .	. .	. .	. .	. .	. .	25 21.27	23.36	II.	9	6.40	42 18.3	13.8	26 44.63	27 18 12.1
113	9	. .	15.0	. .	. .	. .	. .	. .	26 43.11	23.33	II.	7	7.26	32 42.8	13.4	27 6.44	27 8 36.2
114	9	. .	. .	. .	. .	. .	53.2	. .	26 25.38	23.29	VI.	1	10.19	5 10.1	13.5	26 48.67	26 41 3.6
115	8	. .	. .	8.2	. .	. .	. .	. .	31 21.95	23.30	IV.	3	13.4	16 32.6	12.1	31 45.25	26 52 24.7
116	8	. .	. .	46.1	. .	. .	. .	. .	32 0.09	23.33	IV.	7	6.47	32 23.3	11.9	32 23.42	27 8 15.2
117	8	. .	. .	37.6	. .	. .	. .	. .	32 51.24	23.30	IV.	2	7.15	8 36.8	11.7	33 14.54	26 44 28.5
118	4	10.9	25.5	. .	. .	. .	. .	. .	35 53.44	23.32	II.	7	7.2	32 30.7	10.8	36 16.76	27 8 21.5
119	8	27.0	. .	. .	. .	. .	. .	. .	38 9.44	23.33	I.	8	9.25	38 41.9	10.1	38 32.77	14 32.0
120	9	16.2	. .	. .	. .	. .	. .	. .	38 58.48	23.31	II.	5	9.38	24 47.6	9.9	39 21.79	0 37.5
121	8	. .	23.0	. .	. .	. .	. .	. .	39 51.20	23.34	IV.	9	4.58	41 26.9	9.7	40 14.54	27 17 16.6
122	7	11.5	25.8	. .	. .	. .	. .	. .	40 53.79	23.30	III.	4	10.41	20 19.8	9.4	41 17.09	26 56 9.2
123	7	. .	. .	12.8	. .	. .	. .	. .	41 40.98	23.34	III.	9	10.12	44 5.5	9.3	42 4.32	27 19 54.8
124	6.7	3.0	. .	31.3	. .	. .	. .	. .	42 45.08	23.29	IV.	3	6.57	13 27.3	8.9	43 8.37	26 49 16.2
125	7	11.8	. .	. .	. .	. .	. .	. .	44 54.12	23.30	II.	6	8.48	28 23.8	8.3	45 17.42	27 4 12.1
126	10	41.8	. .	. .	. .	. .	. .	. .	46 24.12	23.30	II.	6	7.7	27 32.8	7.8	46 47.42	27 3 20.6
127	9	. .	. .	. .	33.9	. .	. .	. .	18 46 33.75	+ 23.29	V.	4	5.22	−17 38.7	− 7.8	18 46 57.04	− 26 53 26.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(36) 96. Hor. thread assumed as 6 instead of 7.
(36) 103. Transit over T. III assumed as recorded over T. IV.
(36) 112. Minutes assumed as 26 instead of 25.
(36) 123. Transit over T. II assumed as recorded over T. III.

Zone 36. July 9. K. $D_0 = -26° 35' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
128	9	. .	. .	19.3	. .	. .	. .	. .	18 48 33.36	+ 23.31	IV.	8	6.45	−37 21.5	− 7.2	18 48 56.67	− 27 13 8.7
129	8	. .	16.4	. .	. .	. .	. .	. .	49 44.24	23.26	III.	1	11.44	5 53.2	6.9	50 7.50	26 41 40.1
130	9	. .	. .	. .	. .	14.6	. .	. .	51 0.53	23.27	VI.	3	13.7	16 34.0	6.5	51 23.80	52 20.5
131	9	. .	. .	49.3	. .	. .	. .	. .	56 3.04	23.26	IV.	3	11.39	15 49.7	5.1	56 26.30	26 51 34.8
132	7	. .	57.4	. .	. .	. .	. .	. .	58 25.48	23.28	III.	6	8.6	28 2.7	4.5	58 48.76	27 3 47.2
133	9	. .	. .	. .	. .	42.6	. .	. .	58 28.57	23.28	V.	6	8.59	28 29.5	4.4	18 58 51.85	4 13.9
134	6	. .	32.0	. .	. .	. .	. .	. .	18 59 2.42	23.30	III.	9	12.13	45 6.6	4.1	19 0 25.72	27 20 50.7
135	8	. .	. .	. .	. .	22.1	. .	. .	19 0 8.00	23.25	V.	2	11.44	10 52.6	4.0	0 31.25	26 46 36.6
136	7	. .	. .	. .	. .	. .	. .	53.9	0 11.67	23.25	VII.	3	14.34	17 17.7	4.0	0 34.92	26 53 1.7
137	8	. .	. .	. .	. .	. .	17.0	. .	19 1 49.02	+ 23.30	IV.	9	8.35	−43 16.5	− 3.5	19 2 12.32	− 27 19 0.0

Zone 37. July 10. A. $D_0 = -34° 7' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	. .	. .	. .	. .	36.0	51.5	16 5 6.03	+ 24.47	V.	9	11.20	−44 41.6	. .	16 5 30.50	
2	8	. .	. .	2.5	17.5	. .	. .	. .	7 17.36	24.45	IV.	4	7.32	18 43.9	. .	7 41.81	
3	7	. .	. .	. .	. .	20.2	35.4	50.6	8 5.14	24.46	VII.	5	8.46	24 20.9	. .	8 29.60	
4	10	. .	. .	2.5	17.5	. .	. .	. .	10 17.44	24.47	IV.	6	9.5	28 32.9	. .	10 41.91	
5	11	. .	. .	25.0	40.2	. .	. .	. .	11 40.00	24.48	IV.	5	8.5	24 0.7	. .	12 4.48	
6	8	. .	. .	45.8	1.0	16.2	. .	. .	13 0.89	24.48	V.	6	3.43	25 49.9	. .	13 25.37	
7	8	. .	. .	. .	32.8	47.9	. .	. .	16 14 32.68	+ 24.49	V.	5	8.40	−24 18.3	. .	16 14 57.17	

Zone 38. July 10. A. $D_0 = -36° 37' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	13.8	29.2	. .	. .	. .	16 40 29.26	+ 24.59	IV.	8	6.43	−37 22.4	. .	16 40 53.85	
2	11	. .	. .	. .	37.0	52.6	. .	. .	41 36.88	24.58	V.	4	8.11	19 3.2	. .	42 1.46	
3	11	. .	. .	53.0	8.5	. .	. .	. .	43 8.52	24.60	IV.	8	8.23	38 13.1	. .	43 33.12	
4	10	. .	. .	. .	. .	. .	. .	22.5	43 35.70	24.61	VII.	9	5.10	41 34.0	. .	44 0.31	
5	8	. .	. .	. .	29.0	44.5	. .	. .	45 28.87	24.60	V.	8	8.15	38 9.0	. .	45 53.47	
6	9	. .	. .	. .	. .	. .	51.2	7.5	47 20.30	24.58	VII.	2	12.	10 58.0	. .	47 44.88	
7	9	. .	. .	. .	. .	10.3	25.6	41.5	47 54.56	24.61	VII.	7	6.41	32 20.9	. .	48 19.17	
8	10	. .	. .	. .	. .	. .	41.0	57.0	49 9.97	24.62	VII.	7	10.55	34 29.5	. .	49 34.59	
9	8	. .	52.0	7.8	. .	. .	. .	. .	51 23.30	24.61	III.	6	5.40	26 49.2	. .	51 47.91	
10	8	19.3	35.5	51.1	. .	. .	. .	. .	53 6.52	24.63	III.	4	7.45	18 50.0	. .	53 31.15	
11	9	. .	. .	58.8	14.8	. .	. .	. .	54 14.55	24.64	IV.	8	3.55	35 57.4	. .	54 39.19	
12	5	. .	16.5	32.3	48.0	. .	. .	. .	16 55 47.79	+ 24.65	IV.	5	6.44	−23 19.6	. .	16 56 12.44	

Zone 39. July 10. A. $D_0 = -34° (8)'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	36.0	51.2	. .	. .	. .	17 1 51.11	+ 24.66	IV.	8	4.26	−36 12.3	. .	17 2 15.77	
2	8	23.9	39.2	54.4	. .	. .	. .	. .	4 9.57	24.66	III.	6	11.31	29 46.6	. .	4 34.23	
3	8	. .	54.5	10.0	25.0	. .	. .	. .	5 25.00	24.67	IV.	8	7.49	37 55.0	. .	5 49.67	
4	9	15.5	30.8	. .	. .	. .	. .	. .	7 1.26	24.65	II.	7	7.33	32 47.0	. .	7 25.91	
5	10	. .	. .	. .	. .	32.5	47.5	3.0	7 17.38	24.65	VII.	4	3.52	16 52.0	. .	7 42.03	
6	8	. .	. .	49.0	4.0	19.0	. .	. .	3.75	24.66	V.	1	8.27	4 11.8	. .	(10) 28.41	
7	10	. .	38.5	53.5	. .	. .	. .	. .	13 8.46	24.66	III.	3	5.42	12 52.7	. .	13 33.12	
8	7	. .	. .	. .	. .	1.5	16.5	. .	17 13 46.35	+ 24.68	VI.	6	3.37	−25 46.7	. .	17 14 11.03	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 10,	13	− 13.48	+ 0.098	− 0.463	+ 0.300	0.000

INSTRUMENT READINGS.

		Date.		Barom.	THERMOM.	
					At.	Ex.
		1846.	h. m.	in.	°	°
Zone	37	July 10,	16 5	30.5	86.0	81.5
			16 14	30.5	85.8	80.7
Zone	38	July 10,	16 40	30.5	85.3	79.2
			16 56	30.5	85.0	78.0
Zone	39	July 10,	17 2	30.5	85.0	78.0

REMARKS.

(36) 134. Transit over T. I assumed as recorded over T. II.
(39) Telescope not firmly clamped.

Zone 39. July 10. A. $D_\circ=-34^\circ$ (8)′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
9	6	. .	. .	. .	. .	. .	11.0	. .	17 14 40.87	+ 24.68	VI.	6	1.40	−24 47.6	. .	17 15 5.55	
10	9	7.2	23.0	. .	. .	. .	. .	. .	17 53.05	24.69	II.	5	2.	20 55.8	. .	18 17.74	
11	10	. .	. .	. .	30.5	. .	. .	. .	18 30.33	24.69	IV.	6	11.36	29 49.2	. .	18 55.02	
12	8	. .	. .	. .	58.5	13.5	. .	. .	19 58.31	24.68	V.	3	7.10	13 32.8	. .	20 22.99	
13	8	. .	. .	. .	. .	. .	. .	54.5	20 8.92	24.69	VII.	4	4.18	17 5.2	. .	20 33.61	
14	9	. .	. .	. .	23.0	38.0	53.0	. .	22 22.85	24.71	VI.	7	4.53	31 26.1	. .	22 47.56	
15	7	. .	. .	9.5	25.0	40.0	. .	. .	24 24.81	24.72	V.	8	1.55	34 55.9	. .	24 49.53	
16	9	. .	. .	51.0	6.0	. .	. .	. .	26 5.88	24.71	IV.	5	4.22	22 7.9	. .	26 30.59	
17	8	. .	. .	. .	10.5	24.5	. .	. .	27 9.83	24.71	V.	5	10.	24 58.8	. .	27 34.54	
18	10	. .	. .	. .	. .	. .	. .	16.5	27 31.07	24.71	VII.	6	10.	29 0.2	. .	27 55.78	
19	8	. .	. .	. .	. .	. .	7.0	22.5	28 36.93	24.71	VII.	4	10.55	20 26.0	. .	29 1.64	
20	8	. .	. .	. .	40.5	55.5	10.8	. .	30 40.45	24.73	VI.	8	3.27	35 42.2	. .	31 5.18	
21	7	. .	54.0	9.5	. .	. .	. .	. .	33 24.24	24.71	III.	3	9.25	14 41.0	. .	33 48.95	
22	7	. .	. .	. .	. .	6.2	21.3	36.3	33 51.07	24.74	VII.	7	10.	34 1.1	. .	34 15.81	
23	6	. .	33.0	48.2	3.5	. .	. .	. .	36 3.38	24.74	IV.	8	4.50	36 24.4	. .	36 28.12	
24	7	. .	. .	. .	. .	18.5	34.0	. .	37 3.60	24.74	VII.	8	10.46	39 24.0	. .	37 28.34	
25	6	. .	. .	. .	. .	18.0	33.2	. .	38 2.96	24.74	VII.	5	7.15	23 34.9	. .	38 27.70	
26	7	. .	. .	39.5	. .	. .	. .	. .	39 54.38	24.73	III.	4	5.51	17 52.7	. .	40 19.11	
27	5	3.0	18.5	. .	. .	. .	. .	. .	41 48.92	24.75	II.	8	7.9	37 34.4	. .	42 13.67	
28	5	. .	24.5	39.8	. .	. .	. .	. .	42 54.91	24.76	III.	7	9.10	33 36.3	. .	43 19.67	
29	5	. .	. .	. .	. .	. .	0.5	15.5	43 30.25	24.76	VII.	7	12.	35 1.8	. .	43 55.01	
30	6	. .	. .	. .	. .	. .	. .	10.0	44 24.49	24.75	VII.	5	5.26	22 39.7	. .	44 49.24	
31	7	. .	. .	2.0	17.3	. .	. .	. .	46 17.03	24.75	IV.	5	4.54	22 24.1	. .	46 41.78	
32	10	. .	. .	. .	. .	28.8	44.0	. .	48 13.75	24.77	VI.	8	9.33	38 47.4	. .	48 38.52	
33	8	. .	. .	. .	44.3	59.0	. .	. .	49 44.01	24.77	V.	7	7.25	32 43.2	. .	50 8.78	
34	8	. .	. .	. .	. .	. .	51.8	7.0	51 21.63	24.77	VII.	7	9.50	33 56.0	. .	51 46.40	
35	11	. .	. .	. .	. .	11.5	26.5	. .	51 56.35	24.76	VI.	5	10.10	25 3.7	. .	52 21.11	
36	8	. .	. .	. .	. .	. .	32.0	47.5	53 1.98	24.79	VI.	8	7.40	37 49.9	. .	53 26.77	
37	8	. .	47.2	2.0	17.6	. .	. .	. .	17 55 17.35	+ 24.77	IV.	6	10.44	−29 22.9	. .	17 55 42.12	

Zone 40. July 10. A. $D_\circ=-29^\circ\ 9'\ 10''$.

1	7	. .	. .	. .	3.5	18.0	. .	. .	18 1 3.50	+ 24.38	V.	8	6.13	−37 5.5	. .	18 1 27.88	
2	7	. .	. .	. .	. .	16.0	30.2	. .	2 1.59	24.37	VI.	7	5.7	31 32.8	. .	2 25.96	
3	10	. .	. .	. .	. .	36.5	51.0	6.0	3 22.40	24.35	VII.	4	7.31	18 43.4	. .	3 46.75	
4	8	. .	. .	. .	. .	. .	6.0	20.5	4 37.35	24.37	VII.	7	2.24	30 10.2	. .	5 1.72	
5	9	. .	. .	. .	. .	. .	14.5	28.5	6 45.60	24.38	VII.	7	3.55	30 56.1	. .	7 9.98	
6	8	. .	. .	. .	. .	. .	37.5	51.5	8 8.64	24.40	VII.	9	5.	36 28.8	. .	8 33.00	
7	7	. .	. .	. .	. .	57.3	11.4	25.5	9 42.68	24.38	VII.	7	4.20	31 8.8	. .	10 7.06	
8	7	. .	. .	. .	28.2	42.4	56.6	. .	11 28.01	24.38	VI.	7	5.	31 29.2	. .	11 52.39	
9	9	. .	. .	. .	. .	. .	55.9	10.0	12 27.06	24.39	VII.	8	3.30	35 42.8	. .	12 51.45	
10	8	. .	13.7	28.0	. .	. .	. .	. .	14 42.28	24.38	III.	7	4.42	31 20.3	. .	15 6.66	
11	11	. .	. .	2.5	17.4	. .	. .	. .	16 17.13	24.40	IV.	9	9.20	43 39.6	. .	16 41.53	
12	7	. .	. .	. .	. .	21.2	35.3	49.8	18 17 6.71	+ 24.38	VII.	7	3.25	−30 41.0	. .	18 17 31.09	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846, h. m.	in.	°	°
Zone 40	July 10, 18 17	30.05	84.0	77.7

REMARKS.

(40) 6. Micrometer thread assumed as 8 instead of 9.
(40) 9. Discordant from Mural, 1846.

ZONE 41. JULY 10. A. $D_0 = -35° 21' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	5	. .	. .	. .	. .	8.0	22.1	37.7	18 33 51.49	+ 25.00	VII.	5	9.40	−24 48.2	− 23.7	18 34 16.49	− 35 47 1.9
2	6	. .	. .	. .	. .	. .	20.0	35.0	34 49.11	25.00	VII.	8	7.58	37 59.4	23.5	35 14.11	36 0 12.9
3	11	. .	. .	. .	. .	. .	11.0	. .	36 40.36	24.99	VI.	7	3.48	30 53.4	23.1	37 5.35	35 53 6.5
4	11	. .	. .	. .	. .	35.5	50.8	. .	38 20.13	24.97	VI.	5	10.2	24 59.6	22.8	38 45.10	47 12.4
5	11	. .	. .	. .	. .	. .	19.5	35.2	39 48.94	24.98	VI.	6	7.25	27 42.1	22.5	40 13.92	49 54.6
6	8	. .	. .	35.5	50.9	. .	. .	. .	41 50.73	24.97	IV.	5	10.43	25 20.6	22.1	42 15.70	47 32.7
7	9	56.5	12.3	. .	. .	. .	. .	. .	43 43.08	24.99	II.	7	7.28	32 44.7	21.7	44 8.07	54 56.4
8	9	. .	. .	. .	29.0	44.2	59.5	. .	44 28.84	24.99	VI.	7	6.46	32 23.5	21.6	44 53.83	54 35.1
9	8	. .	. .	. .	21.2	36.8	. .	. .	46 21.16	24.95	V.	2	4.17	7 4.8	21.2	46 46.11	35 29 16.0
10	6	. .	. .	. .	26.0	41.5	. .	. .	48 26.01	25.01	V.	10	6.46	47 25.6	20.8	48 51.02	36 9 36.4
11	10	. .	. .	. .	29.5	44.5	. .	. .	50 29.23	24.99	V.	7	9.40	33 51.7	20.4	50 54.22	35 56 2.1
12	7	. .	. .	. .	. .	. .	50.0	5.2	51 19.22	25.00	VII.	9	6.30	42 15.0	20.2	51 44.22	36 4 25.2
13	10	. .	. .	36.0	51.0	. .	. .	. .	53 50.92	24.96	IV.	3	5.16	12 34.8	19.7	54 15.88	35 34 44.5
14	8	. .	. .	58.2	13.2	. .	. .	. .	55 13.13	24.96	IV.	3	6.10	13 2.1	19 5	55 38.09	35 11.6
15	9	. .	. .	. .	. .	. .	. .	19.5	55 33.29	24.98	VII.	6	5.38	26 47.7	19.4	55 58.27	48 57.1
16	11	. .	. .	. .	. .	. .	24.5	40.0	56 53.84	24.98	VII.	6	8.52	28 25.9	19.1	57 18.82	50 35.0
17	11	. .	. .	. .	. .	. .	. .	40.0	18 57 53.76	24.97	VII.	5	7.32	23 43.4	18.9	18 58 18.73	45 52.3
18	8	. .	36.0	51.0	. .	. .	. .	. .	19 5 6.16	24.94	III.	1	5.01	2 27.0	17.5	19 5 31.10	24 34.5
19	8	. .	. .	. .	. .	50.5	7.0	23.2	6 36.77	24.94	VII.	1	8.38	4 16.3	17.3	7 1.71	26 23.6
20	5	. .	47.5	3.2	18.5	. .	. .	. .	9 18.29	24.95	IV.	4	8.22	19 9.0	16.7	9 43.24	41 15.7
21	11	. .	. .	. .	. .	. .	. .	27.8	10 41.51	24.95	IV.	7	10.42	20 19.3	16.4	11 6.46	42 25.7
22	9	. .	. .	. .	. .	. .	22.0	38.0	12 51.57	24.95	VII.	4	5.40	17 46.5	16.0	13 16.52	39 52.5
23	11	. .	. .	. .	. .	52.0	7.0	23.0	15 36.59	24.95	VII.	5	7.38	23 46.4	15.5	16 1.54	45 51.9
24	7	. .	. .	. .	2.5	17.5	32.5	. .	18 2.12	24.92	VI.	1	6.47	3 20.4	15.0	18 27.04	25 25.4
25	8	. .	. .	. .	. .	35.0	. .	. .	19 19.54	24.92	V.	1	2.5	0 57.9	14.8	19 44.46	23 2.7
26	9	. .	44.0	59.5	15.0	. .	. .	. .	22 14.76	24.95	IV.	5	8.11	24 3.7	14.2	22 39.71	46 7.9
27	11	. .	. .	. .	31.0	46.5	. .	. .	24 30.96	24.95	V.	5	10.36	25 17.0	13.8	24 55.91	47 20.8
28	8	. .	39.8	55.2	. .	. .	. .	. .	27 10.30	24.93	III.	3	4.18	12 5.4	13.3	27 35.23	34 8.7
29	9	. .	. .	1.2	17.0	. .	. .	. .	31 16.76	24.97	IV.	9	4.50	41 24.9	12.6	31 41.73	35 3 27.5
30	8	. .	. .	20.2	35.3	. .	. .	. .	33 35.18	24.93	IV.	3	7.5	13 30.0	12.1	34 0.11	36 35 32.1
31	11	. .	. .	. .	. .	. .	23.0	39.0	34 52.55	24.93	VII.	3	3.25	11 38.1	11.9	35 17.48	36 33 40.0
32	7	. .	43.2	59.0	14.4	. .	. .	. .	37 13.99	24.91	IV.	2	10.17	10 7.0	11.5	37 38.90	35 32 8.5
33	11	. .	. .	. .	. .	. .	28.0	43.5	37 57.37	24.96	VII.	9	6.53	42 25.1	11.3	38 22.33	36 4 26.4
34	7	17.5	33.3	48.9	. .	. .	. .	. .	41 3.95	24.92	III.	4	8.14	19 3.9	10.8	41 28.87	36 41 4.7
35	6	. .	. .	. .	. .	. .	29.8	45.4	47 59.15	24.90	VII.	3	6.5	12 59.1	9.6	48 24.05	35 34 58.7
36	5	. .	. .	. .	. .	48.5	3.3	19.2	49 32.90	24.90	VII.	4	7.20	18 37.0	9.3	49 57.80	40 36.3
37	11	27.5	43.0	58.5	. .	. .	. .	. .	52 13.72	24.90	III.	4	8.	18 57.8	8.8	52 38.62	40 56.6
38	8	. .	. .	39.5	54.8	10.0	. .	. .	53 54.63	24.90	V.	5	3.59	21 56.1	8.5	54 19.53	43 54.6
39	9	. .	. .	. .	7.5	22.8	38.0	. .	54 7.37	24.90	VI.	5	6.47	23 20.9	8.5	54 32.27	45 19.4
40	7	. .	39.0	54.8	10.2	. .	. .	. .	57 9.80?	24.93	IV.	8	1.47	34 22.0	8.0	57 34.73?	56 20.0
41	8	. .	47.2	2.9	18.0	. .	. .	. .	59 17.64	24.88	IV.	3	8.8	14 1.8	7.6	19 59 42.52	35 59.4
42	7	. .	. .	. .	. .	7.0	22.5	37.9	19 59 52.21	24.89	VII.	5	8.28	24 11.7	7.5	20 0 17.10	46 9.2
43	11	. .	. .	2.5	17.8	. .	. .	. .	20 3 17.58	24.89	IV.	6	6.50	27 24.7	7.0	3 42.47	49 21.7
44	6	34.3	50.2	5.8	. .	. .	. .	. .	6 20.32	24.87	III.	4	4.39	17 16.1	6.5	6 45.19	39 12.6
45	11	. .	. .	. .	. .	19.5	35.0	50.5	7 4.76	24.88	VII.	6	10.	29 0.3	6.3	7 29.64	35 50 56.6
46	6	. .	. .	29.5	45.2	0.5	15.6	. .	11 45.17	24.90	VI.	10	5.9	46 36.3	5.5	12 10.07	36 8 31.8
47	7	. .	24.8	40.5	56.0	. .	. .	. .	12 55.51	24.87	IV.	6	10.10	29 5.9	5.4	13 20.38	35 51 1.3
48	7	. .	. .	. .	. .	57.5	12.7	28.2	13 42.52	24.85	VII.	3	8.49	14 22.0	5.2	14 7.37	36 17.2
49	10	. .	. .	. .	. .	9.0	24.5	40.0	16 54.28	24.87	VII.	7	5.32	31 45.7	4.7	17 19.15	53 40.4
50	8	. .	. .	. .	48.0	2.8	18.5	33.9	20 18 47.92	+ 24.85	VII.	6	10.35	−29 18.0	− 4.4	20 19 12.77	− 35 51 12.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 10,	13	− 13.48	+ 0.098	− 0.463	+ 0.300	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 41	July 10,	18 34	30.05	83.7	77.5
	10,	20 19	30.05	83.0	76.3

REMARKS.

(41) 40. Micrometer reading assumed as 0r.47 instead of 1r.47

ZONE 42. JULY 11. K. $D_\circ = -27^\circ\ 50'\ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	10	. .	12.0	. .	. .	. .	. .	. .	16 21 40.41	+ 26.06	II.	7	4.12	−31 4.9	− 37.4	16 22 6.47	− 28 22 22.3
2	10	. .	. .	. .	. .	6.4	. .	. .	21 52.15	26.03	VI.	3	6.17	13 6.8	37.3	22 18.18	4 24.1
3	10	. .	. .	9.4	. .	. .	. .	. .	25 23.37	26.06	IV.	5	7.44	23 50.2	36.9	25 49.43	15 7.1
4	4	. .	. .	. .	7.2	21.4	. .	. .	26 7.07	26.04	IV.	1	5.29	2 43.7	36.8	26 33.11	27 54 0.5
5	8	. .	. .	. .	. .	. .	. .	58.9	26 16.14	26.05	VII.	3	2.47	11 20.5	36.7	26 42.19	28 2 37.2
6	9	. .	. .	. .	. .	4.2	. .	. .	27 50.00	26.07	V.	6	6.12	27 5.2	36.5	28 16.07	18 21.7
7	8	. .	. .	3.3	. .	. .	. .	. .	29 17.58	26.10	IV.	9	11.14	44 37.0	36.3	29 43.68	35 53.3
8	7	. .	. .	6.8	. .	. .	. .	. .	30 21.11	26.10	V.	10	6.1	47 0.2	36.2	30 47.21	38 16.4
9	8	4.3	. .	. .	. .	. .	. .	. .	31 47.11	26.09	II.	6	4.13	26 4.9	36.0	32 13.20	17 20.9
10	9	. .	48.3	. .	. .	. .	. .	. .	32 16.84	26.11	II.	9	5.25	41 40.5	35.9	32 42.95	32 56.4
11	9	. .	. .	. .	. .	. .	46.3	. .	32 18.19	26.08	VI.	5	3.9	21 31.1	35.9	32 44.27	12 47.0
12	7	. .	. .	. .	39.0	. .	. .	. .	33 38.84	26.07	VI.	2	9.57	9 58.3	35.7	34 4.91	1 14.0
13	9	. .	. .	. .	. .	. .	36.2	. .	34 8.04	26.10	VI.	7	4.55	31 26.6	35.7	34 34.14	22 42.3
14	7	. .	. .	. .	. .	26.0	. .	. .	35 11.79	26.08	VI.	5	4.36	22 15.0	35.5	35 37.87	13 30.5
15	9	. .	. .	. .	. .	. .	. .	26.3	35 43.91	26.12	VII.	9	6.33	42 14.6	35.4	36 10.03	33 30.0
16	8	. .	. .	. .	. .	. .	21.0	. .	36 52.77	26.12	VII.	10	5.15	46 36.6	35.3	37 18.89	37 51.9
17	8	. .	. .	. .	. .	23.0	. .	. .	38 8.76	26.08	V.	3	10.6	15 2.6	35.1	38 34.84	6 17.7
18	10	. .	. .	. .	. .	19.0	. .	. .	39 4.77	26.10	VI.	4	7.34	18 45.2	34.9	39 30.87	10 0.1
19	10	55.0	. .	. .	. .	. .	. .	. .	41 37.73	26.10	II.	4	11.13	20 35.8	34.6	42 3.83	11 50.4
20	10	. .	. .	. .	. .	51.0	. .	. .	42 36.84	26.12	VI	8	5.0	36 28.4	34.4	43 2.96	27 42.8
21	8	. .	. .	. .	. .	37.2	. .	. .	43 22.98	26.11	VI.	4	10.33	20 15.6	34.3	43 49.09	11 29.9
22	10	. .	. .	26.1	. .	. .	. .	. .	44 40.11	26.12	III.	6	6.46	27 22.3	34.1	45 6.23	18 36.4
23	10	. .	16.8	. .	. .	. .	. .	. .	45 45.03	26.10	VI.	3	7.25	13 41.3	34.0	46 11.13	4 55.3
24	10	. .	. .	17.8	. .	. .	. .	. .	46 31.99	26.13	IV.	8	9.19	38 39.4	33.9	46 58.12	29 53.3
25	9	18.6	. .	. .	. .	. .	. .	. .	16 48 1.50	+ 26.13	II.	8	5.28	−36 42.5	− 33.6	16 48 27.63	− 28 27 56.1

ZONE 43. JULY 11. K. $D_\circ = -39^\circ\ 6'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	9.6	. .	. .	. .	16 54 9.32	+ 26.16	VI.	9	7.0	−42 32.9	− 13.7	16 54 35.58	− 39 49 36.6
2	7	. .	. .	12.3	. .	44.3	. .	. .	17 1 28.03	27.02	V.	3	3.36	11 42.3	12.8	17 1 55.05	18 45.1
3	6.7	48.5	. .	21.4	. .	. .	. .	. .	3 37.33	27.05	III.	6	7.50	27 55.3	12.5	4 4.38	34 57.8
4	10	. .	56.5	. .	. .	. .	. .	. .	5 28.76	27.04	III.	4	8.4	18 59.0	12.3	5 55.80	26 1.3
5	7.8	. .	44.2	. .	. .	. .	. .	. .	6 16.32	27.03	III.	2	6.42	8 15.8	12.2	6 43.35	15 18.0
6	7	. .	49.0	. .	. .	. .	. .	. .	7 11.33	27.06	III.	5	8.23	24 9.6	12.0	7 38.39	31 11.6
7	10	. .	. .	27.8	. .	. .	. .	. .	7 43.53	2..05	IV.	3	10.45	15 20.0	12.0	8 10.58	22 22.0
8	9	. .	. .	. .	. .	. .	32.8	. .	8 0.71	27.05	VII.	3	7.47	13 49.0	11.9	8 27.76	20 50.9
9	10	. .	. .	8.7	. .	. .	. .	. .	16 24.58	27.10	IV.	6	9.6	28 34.0	10.8	16 51.68	35 34.8
10	10	. .	27.0	. .	. .	. .	. .	. .	18 59.39	27.10	III.	6	7.18	27 39.1	10.5	19 26.49	34 39.6
11	10	. .	. .	. .	38.8	. .	. .	. .	20 38.62	27.14	VI.	9	10.0	44 4.2	10.3	21 5.76	51 4.5
12	10	25.6	. .	. .	. .	. .	. .	. .	25 14.08	27.09	II.	1	13.14	6 33.5	9.6	25 41.17	13 33.1
13	9	. .	32.5	. .	. .	. .	. .	. .	26 4.87	27.13	III.	6	5.51	26 55.0	9.5	26 32.00	33 54.5
14	8	5.1	. .	. .	. .	. .	. .	. .	28 53.61	27.10	III.	2	6.16	8 2.6	9.1	29 20.71	15 1.7
15	8	. .	. .	. .	. .	. .	10.0	. .	28 37.44	27.14	VII.	7	10.16	34 10.6	9.2	29 4.58	41 9.8
16	8	. .	. .	. .	. .	. .	47.2	. .	29 14.59	27.17	VII.	9	12.0	45 4.8	9.1	29 41.76	52 3.9
17	10	. .	. .	. .	40.0	. .	. .	. .	30 39.82	27.10	VI.	1	11.49	5 50.6	8.9	31 6.92	12 49.5
18	10	. .	. .	43.6	. .	. .	. .	. .	31 59.89	27.14	IV.	6	13.0	30 32.7	8.7	32 27.03	37 31.4
19	9	. .	. .	21.9	. .	. .	. .	. .	32 38.31	27.16	IV.	8	7.11	37 38.0	8.6	33 5.47	44 36.6
20	9	. .	. .	. .	. .	. .	19.2	. .	17 32 46.62	+ 27.16	VI.	8	5.10	−36 36.3	− 8.6	17 33 13.78	− 39 43 34.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
July 11, 13	− 15.39	+ 0.112	− 0.463	+ 0.300	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 42	July 11, 16 22	30.00	87.0	85.6
	11, 16 48	29.99	86.0	84.9
Zone 43	11, 16 54	29.99	86.0	84.9
	11, 18 4	29.98	85.0	83.5

REMARKS.

ZONE 43. JULY 11. K. $D_0 = -39° 6' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
21	9	. .	. .	. .	. .	. .	23.3	. .	17 33 53.70	+ 27.17	VII.	8	10.42	−39 24.4	− 8.4	17 34 17.87	− 39 46 22.8
22	7	. .	7.4	. .	39.7	. .	. .	. .	35 39.40	27.11	II.	1	9.45	4 47.8	8.2	36 6.51	11 46.0
23	8	. .	. .	11.3	. .	. .	. .	. .	36 27.28	27.13	IV.	3	8.44	14 18.6	8.1	36 54.41	21 16.7
24	7	58.7	15.1	. .	. .	. .	. .	. .	37 47.64	27.18	II.	9	8.27	43 17.1	7.9	38 14.82	50 15.0
25	9	. .	. .	. .	. .	15.8	. .	. .	37 59.76	27.13	VI.	3	10.25	15 9.5	7.9	38 26.89	22 7.4
26	10	. .	. .	. .	. .	39.3	. .	. .	39 23.34	27.18	VI.	8	6.44	37 24.0	7.7	39 50.52	44 21.7
27	10	. .	27.3	. .	. .	. .	. .	. .	41 59.49	27.16	III.	6	4.27	26 12.4	7.3	42 26.65	33 9.7
28	9	. .	. .	. .	44.3	. .	. .	. .	42 44.12	27.20	VI.	9	8.20	43 13.5	7.2	43 11.32	50 10.7
29	10	. .	. .	. .	53.8	. .	. .	. .	43 53.62	27.15	IV.	3	10.0	14 47.1	7.0	44 20.77	21 44.1
30	9	. .	. .	40.9	. .	. .	. .	. .	44 56.84	27.15	IV.	3	3.47	11 48.0	6.9	45 23.99	18 44.9
31	7	. .	. .	38.8	. .	. .	. .	. .	45 55.41	27.22	IV.	10	8.17	48 15.0	6.8	46 22.63	55 11.8
32	7	. .	. .	11.2	. .	. .	. .	. .	49 27.05	27.16	III.	2	3.30	6 38.5	6.2	49 54.21	13 34.7
33	8	. .	. .	. .	. .	. .	10.9	. .	49 38.35	27.20	VI.	7	5.59	32 0.6	6.2	50 5.55	38 56.8
34	10	. .	30.9	. .	. .	. .	. .	. .	52 2.89	27.17	III.	3	5.39	12 44.7	5.9	52 30.06	19 40.6
35	9	. .	. .	30.2	. .	. .	. .	. .	52 46.25	27.17	IV.	4	4.4	16 57.3	5.8	53 13.42	23 53.1
36	9	. .	. .	8.8	. .	. .	. .	. .	53 24.82	27.17	IV.	4	1.26	15 37.2	5.7	53 51.99	22 32.9
37	9	58.0	. .	. .	. .	. .	. .	. .	56 46.77	27.19	II.	5	9.21	24 38.8	5.2	57 13.96	31 34.0
38	8	11.1	. .	. .	. .	. .	. .	. .	17 57 59.86	27.19	II.	5	7.0	23 27.3	5.0	17 58 27.05	30 22.3
39	9	. .	45.0	. .	. .	. .	. .	. .	18 1 17.03	27.18	II.	3	10.28	15 11.0	4.6	18 1 44.21	22 5.6
40	8	. .	. .	. .	37.0	. .	. .	. .	1 37.82	27.18	IV.	3	10.24	15 9.3	4.5	2 5.00	22 3.8
41	8	. .	. .	. .	. .	. .	39.4	. .	2 7.06	27.16	VI.	1	8.25	4 7.1	4.4	2 34.22	11 1.5
42	8	. .	. .	. .	. .	. .	. .	22.3	2 34.00	27.22	VII.	8	6.24	37 13.4	4.4	3 1.24	44 7.8
43	10	. .	. .	. .	. .	. .	40.9	. .	18 4 8.53	+ 27.17	VII.	2	4.18	− 7 2.2	− 4.2	18 4 35.70	− 39 13 56.4

ZONE 44. JULY 14. K. $D_0 = -35° 16' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	24.0	. .	. .	. .	. .	. .	. .	17 20 10.44	+ 1.74	II.	6	7.4	−27 31.5	− 22.8	17 20 12.18	− 35 43 54.3
2	9	13.8	. .	. .	. .	. .	. .	. .	21 0.28	1.74	II.	6	12.16	30 9.4	22.7	21 2.02	46 32.1
3	10	. .	. .	. .	. .	43.3	. .	. .	21 27.98	1.76	V.	8	13.43	40 54.8	22.6	21 29.74	57 17.2
4	8	. .	. .	. .	9.1	. .	. .	. .	24 8.93	1.72	IV.	4	11.44	20 51.2	22.2	24 10.65	37 13.4
5	10	. .	. .	. .	17.5	. .	. .	. .	25 17.33	1.72	V.	2	8.13	9 4.1	22.0	25 19.05	25 26.1
6	9	. .	. .	. .	17.3	. .	. .	. .	27 17.13	1.73	IV.	4	12.17	21 7.9	21.7	27 18.86	37 29.6
7	9	. .	21.0	. .	. .	. .	. .	. .	28 51.91	1.77	III.	8	6.47	37 24.0	21.4	28 53.68	33 45.4
8	8	. .	. .	. .	31.0	. .	. .	. .	30 30.83	1.73	V.	4	4.17	17 4.9	21.2	30 32.56	33 26.1
9	8	. .	40.9	. .	. .	. .	. .	. .	32 11.68	1.75	III.	6	5.26	26 42.1	20.9	32 13.43	43 3.0
10	8	. .	. .	. .	. .	32.9	. .	. .	32 17.44	1.72	VI.	2	7.17	8 35.6	20.9	32 19.16	24 56.5
11	9	. .	. .	31.3	. .	. .	. .	. .	33 46.27	1.72	III.	2	8.1	8 58.0	20.7	33 47.99	25 18.7
12	7.8	. .	26.4	. .	. .	. .	. .	. .	34 56.98	1.72	III.	2	12.14	11 6.0	20.5	34 58.70	27 26.5
13	8	. .	51.4	. .	. .	. .	. .	. .	37 22.12	1.75	IV.	5	3.54	21 53.6	20.1	37 23.87	38 13.7
14	9	. .	. .	. .	. .	48.0	. .	. .	37 32.64	1.77	VI.	7	8.36	33 19.2	20.1	37 34.41	49 39.3
15	7	. .	. .	. .	. .	. .	38.7	. .	38 8.04	1.77	VII.	7	9.17	33 39.6	20.0	38 9.81	49 59.6
16	8	. .	. .	. .	. .	40.0	. .	. .	39 24.51	1.72	V.	1	6.2	2 57.8	19.8	39 26.23	19 17.6
17	9	. .	. .	. .	. .	33.1	. .	. .	40 17.69	1.75	VI.	5	6.22	23 8.3	19.7	40 19.44	39 28.0
18	9	. .	. .	. .	. .	. .	. .	24.7	40 38.34	1.74	VII.	3	5.2	12 27.1	19.6	40 40.08	28 46.7
19	7	. .	. .	. .	. .	. .	17.6	. .	41 47.14	1.72	VI.	1	5.32	2 42.4	19.4	41 48.86	19 1.8
20	7.6	. .	. .	. .	. .	7.0	. .	. .	42 51.57	1.74	VI.	4	6.49	18 21.8	19.3	42 53.31	34 41.1
21	9	. .	. .	. .	5.0	. .	. .	. .	44 4.83	1.77	V.	7	10.34	34 19.1	19.1	44 6.60	50 38.2
22	9	. .	. .	. .	. .	. .	1.1	. .	17 44 30.55	+ 1.73	VI.	2	12.45	−11 21.6	− 19.0	17 44 32.28	− 35 27 40.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
July 14,	13	− 23.27	+ 0.104	+ 0.272	− 0.039	+ 0.130
	15	− 10.53	+ 0.051	+ 0.272	− 0.031	+ 0.130

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 44	July 14,	17 20	30.01	76.0	65.5
	14,	18 31	30.02	74.0	61.2

REMARKS.

(44) 14. Differs 5ˢ and 20″ from No. 6 of Mural Zone of same date.
(44) 15. Differs 1ᵐ from observation April 17.

ZONE 44. JULY 14. K. $D_0 = -35° 16' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
23	6.7	1.9	. .	. .	. .	. .	. .	. .	17 47 48.57	+ 1.78	II.	9	7.7	−42 34.1	− 18.5	17 47 50.35	− 35 58 52.6
24	8	14.4	. .	. .	. .	. .	. .	. .	49 1.09	1.78	II.	9	10.38	44 20.9	18.3	49 2.87	36 0 39.2
25	8	. .	. .	4.3	. .	. .	. .	. .	49 19.85	1.78	III.	9	9.25	43 44.1	18.3	49 21.63	36 0 2.4
26	8	12.4	. .	. .	. .	. .	. .	. .	51 58.79	1.75	II.	5	6.29	23 11.8	17.9	52 0.54	35 39 29.7
27	9	20.8	. .	. .	. .	. .	. .	. .	53 7.15	1.74	II.	4	10.10	30 3.4	17.7	53 8.89	36 21.1
28	6	56.0	11.8	. .	. .	. .	. .	. .	54 42.65	1.78	III.	8	7.21	37 41.2	17.4	54 44.43	53 58.6
29	10	. .	. .	. .	. .	11.0	. .	. .	54 55.54	1.73	VI.	2	7.12	8 33.1	17.4	54 57.27	24 50.5
30	10	. .	. .	. .	. .	. .	5.9	. .	55 35.29	1.75	VII.	5	9.21	24 38.5	17.3	55 37.04	35 40 55.8
31	6	. .	. .	. .	. .	. .	. .	59.7	56 13.69	1.78	VII.	9	12.29	45 16.8	17.2	56 15.47	36 1 34.0
32	10	. .	. .	. .	. .	9.9	. .	. .	57 54.45	1.74	VI.	3	3.44	11 48.0	16.9	57 56.19	35 28 4.9
33	8	. .	. .	3.0	. .	. .	. .	. .	59 18.20	1.76	III.	6	6.13	27 5.9	16.7	59 20.02	43 22.6
34	10	. .	. .	. .	55.0	. .	. .	. .	17 59 54.83	1.74	IV.	3	9.51	14 53.9	16.6	17 59 56.57	31 10.5
35	10	23.3	. .	. .	. .	. .	. .	. .	18 4 9.52	1.73	II.	2	11.4	10 30.5	16.0	18 4 11.25	26 46.5
36	10	18.8	. .	. .	. .	. .	. .	. .	5 5.36	1.77	II.	7	11.58	35 1.4	15.8	5 7.13	51 17.2
37	7.8	. .	13.0	. .	. .	. .	. .	. .	5 43.75	1.75	III.	5	8.40	24 18.3	15.7	5 45.50	40 34.0
38	9	. .	24.2	. .	. .	. .	. .	. .	9 55.14	1.78	III.	8	12.47	40 26.2	15.1	9 56.92	35 56 41.3
39	9	. .	. .	. .	. .	. .	22.1	. .	9 51.36	1.79	VI.	10	7.3	47 34.1	15.1	9 53.15	36 3 49.2
40	6	. .	. .	58.6	. .	. .	. .	. .	15 14.22	1.79	III.	10	7.30	47 37.8	14.2	15 16.01	36 3 52.0
41	9	. .	. .	29.8	. .	. .	. .	. .	16 44.70	1.72	III.	1	11.36	5 46.8	14.0	16 46.42	35 22 0.8
42	9	. .	. .	. .	. .	. .	23.7	. .	16 53.20	1.73	VI.	2	7.8	8 31.0	13.9	16 54.93	35 24 44.9
43	8	. .	. .	. .	. .	15.3	. .	. .	17 59.99	1.79	VI.	10	6.15	47 9.8	13.8	18 1.78	36 3 23.6
44	10	. .	. .	. .	. .	18.9	. .	. .	19 3.50	1.75	VI.	5	8.1	23 58.4	13.6	19 5.25	35 40 12.0
45	9	. .	. .	35.6	. .	. .	. .	38.5	. . .	. .	IV.	2	7.43	8 49.0			
46	10	. .	. .	. .	. .	1.0	. .	. .	20 45.68	1.78	VII.	9	5.9	41 34.0	13.3	20 47.46	57 47.3
47	6.7	. .	. .	. .	29.4	44.6	. .	. .	22 29.18	1.73	VII.	2	11.36	10 46.3	13.0	22 30.91	26 59.3
48	7	35.3	. .	. .	. .	. .	. .	. .	26 21.60	1.74	II.	3	14.48	17 24.0	12.4	26 23.34	33 36.4
49	9	. .	6.1	. .	. .	. .	. .	. .	29 36.65	1.73	II.	2	7.53	8 53.8	11.9	29 38.38	25 5.7
50	9	. .	. .	. .	. .	. .	3.2	. .	18 31 32.58	+ 1.76	VI.	6	6.55	−27 27.0	− 11.6	18 31 34.34	− 35 43 38.6

ZONE 45. JULY 14. K. $D_0 = -33° 51' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	16.3	. .	. .	. .	18 41 16.14	+ 1.43	IV.	2	11.39	−10 49.2	− 27.9	18 41 17.57	− 34 2 47.1
2	7.8	. .	37.5	. .	. .	. .	. .	. .	46 7.48	1.45	III.	7	11.6	34 34.8	26.7	46 8.93	26 31.5
3	7	. .	. .	. .	28.2	. .	. .	. .	46 28.04	1.45	V.	7	12.26	35 15.2	26.6	46 29.49	27 11.8
4	7	. .	. .	. .	. .	20.3	. .	. .	47 5.44	1.46	VI.	8	10.5	39 3.3	26.5	47 6.90	30 59.8
5	9	. .	10.0	. .	. .	. .	. .	. .	48 39.70	1.42	III.	2	12.38	11 19.9	26.1	48 41.12	3 16.0
6	9	. .	. .	15.0	. .	. .	. .	. .	40 29.58	1.42	IV.	3	5.10	12 32.4	25.6	50 31.00	4 28.0
7	7.8	. .	. .	. .	9.6	. .	. .	. .	51 9.44	1.45	VI.	7	10.11	34 6.8	25.5	51 10.89	34 26 2.3
8	8	. .	45.0	. .	. .	. .	. .	. .	53 14.63	1.41	III.	1	10.44	5 21.5	24.9	53 16.04	33 57 16.4
9	9	. .	. .	49.7	. .	. .	. .	. .	55 4.58	1.45	IV.	7	4.33	31 16.1	24.5	55 6.03	34 23 10.6
10	9	. .	. .	. .	. .	44.8	. .	. .	54 29.85	1.43	VI.	5	4.24	22 8.7	24.4	55 31.28	14 3.1
11	9	. .	. .	. .	. .	34.5	. .	. .	56 19.55	1.43	VI.	5	3.31	21 41.9	24.2	56 20.98	13 36.1
12	9	. .	. .	44.1	. .	. .	. .	. .	18 58 59.18	1.46	III.	9	8.6	43 3.2	23.5	18 59 0.64	34 56.7
13	9	. .	. .	41.7	. .	. .	. .	. .	19 1 56.79	1.46	IV.	9	10.20	44 11.0	22.8	19 1 58.25	36 3.8
14	8	. .	. .	. .	37.9	. .	. .	. .	2 37.74	1.43	VI.	6	4.58	26 27.7	22.6	2 39.17	18 20.3
15	9	52.5	. .	. .	. .	. .	. .	. .	6 37.60	1.42	II.	6	6.36	27 17.3	21.6	6 39.02	19 8.9
16	9	. .	. .	. .	. .	58.9	. .	. .	19 6 44.05	+ 1.45	V.	9	5.13	−41 35.7	− 21.6	19 6 45.50	− 34 33 27.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 45	July 14, 18 41 14, 19 49	30.02 30.3	74.0 73.0	61.0 58.8

REMARKS.

ZONE 45. JULY 14. K. $D_{\circ}=-33^{\circ}\ 51'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
17	8	. .	3.9	. .	. .	. .	. .	. .	19 8 33.86	+ 1.42	III.	7	8.2	−33 1.7	− 21.1	19 8 35.28	− 34 24 52.8
18	7	. .	. .	56.5	. .	. .	. .	. .	9 11.53	1.44	III.	9	2.50	40 23.4	20.9	9 12.97	32 14.3
19	8	. .	. .	. .	. .	. .	48.6	. .	9 18.84	1.42	VII.	7	9.9	33 35.2	20.9	9 20.26	25 26.1
20	9	. .	. .	. .	7.2	. .	. .	. .	11 7.04	1.41	V.	6	6.29	27 13.9	20.5	11 8.45	19 4.4
21	8	. .	. .	51.9	. .	. .	. .	. .	13 6.59	1.39	IV.	4	7.56	18 56.1	20.0	13 7.98	10 46.1
22	7.8	. .	. .	. .	14.2	. .	. .	. .	21 14.04	1.37	V.	2	6.45	8 20.4	18.0	21 15.41	0 8.4
23	9	. .	. .	. .	. .	. .	19.0	. .	22 49.28	1.38	VII.	4	12.3	21 0.5	17.6	22 50.66	12 48.1
24	9	. .	. .	. .	. .	29.7	. .	. .	24 14.83	1.40	VII.	8	4.15	36 6.0	17.1	24 16.23	27 53.1
25	8	. .	. .	. .	. .	. .	. .	53.9	25 8.93	1.36	VII.	3	9.49	14 52.9	17.0	25 10.29	6 39.9
26	8	. .	. .	. .	. .	. .	. .	46.8	26 1.87	1.36	VII.	3	13.48	16 53.8	16.8	26 3.23	8 40.6
27	7	. .	. .	. .	. .	. .	. .	39.5	26 54.46	1.36	VII.	2	8.18	9 7.0	16.6	26 55.82	0 53.6
28	7	. .	. .	. .	. .	32.7	. .	. .	28 17.75	1.37	VI.	5	5.28	22 41.1	16.2	28 19.12	14 27.3
29	9	48.1	. .	. .	. .	. .	. .	. .	31 33.11	1.36	II.	4	11.28	20 43.1	15.4	31 34.47	12 28.5
30	9	50.3	. .	. .	. .	. .	. .	. .	40 35.41	1.35	III.	6	8.47	28 23.6	13.2	40 36.76	34 20 6.8
31	8	. .	. .	. .	. .	. .	37.1	. .	41 7.40	1.33	VII.	2	4.29	7 11.2	13.1	41 8.73	33 58 54.3
32	9	. .	. .	50.0	. .	. .	. .	. .	43 4.65	1.33	IV.	4	3.45	16 49.2	12.6	43 5.98	34 8 31.8
33	9	. .	. .	47.0	. .	. .	. .	. .	44 1.56	1.32	IV.	3	1.56	10 54.3	12.4	44 2.88	2 36.7
34	6.7	41.3	. .	11.6	. .	. .	. .	. .	45? 26.52	. .	IV.	7	10.21	34 12:1	12.1	. . .	25 54.2
35	9	13.0	. .	. .	. .	. .	. .	. .	48 57.87	1.30	II.	2	9.41	9 49.3	11.2	48 59.17	1 30.5
36	9	. .	20.9	. .	. .	. .	. .	. .	19 49 50.63	+ 1.30	III.	3	8.38	−14 17.5	− 11.0	19 49 51.93	− 34 5 58.5

ZONE 46. JULY 15. K. $D_{\circ}=-29^{\circ}\ 42'\ 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	33.4	. .	. .	. .	. .	16 43 47.74	− 12.83	III.	6	7.12	−27 35.5	− 22.7	16 43 34.91	− 30 10 18.2
2	9	. .	. .	. .	23.6	. .	. .	. .	44 23.44	12.83	IV.	6	4.43	26 20.3	22.3	44 10.61	9 2.6
3	6.7	. .	. .	. .	15.2	. .	. .	. .	45 15.04	12.82	IV.	8	6.51	37 24.9	21.6	45 2.22	20 6.5
4	8.9	33.4	48.1	. .	. .	. .	. .	. .	47 17.10	12.82	III.	8	6.52	37 25.4	19.9	47 4.28	30 20 5.3
5	9	. .	18.8	33.4	. .	. .	. .	. .	48 47.56	12.84	IV.	3	11.39	15 49.4	18.6	48 34.72	29 58 28.0
6	9	. .	. .	. .	. .	. .	45.7	. .	49 17.03	12.84	VII.	2	10.22	10 10.3	18.2	49 4.19	29 52 48.5
7	9	. .	. .	. .	. .	18.1	. .	. .	51 3.61	12.83	V.	4	5.29	17 42.0	16.7	50 50.78	30 0 18.7
8	9	. .	17.1	. .	. .	. .	. .	. .	16 52 46.17	− 12.80	IV.	9	7.54	−42 56.4	− 15.3	16 52 33.37	− 30 25 31.7

ZONE 47. JULY 15. K. $D_{\circ}=-37^{\circ}\ 51'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	43.5	. .	. .	. .	. .	. .	17 44 15.54	− 11.99	III.	9	8.3	−43 4.3	. .	17 44 3.55	
2	9	. .	. .	16.8	. .	. .	. .	. .	45 32.36	12.03	IV.	3	10.4	14 59.6	. .	45 20.33	
3	8	41.0	. .	. .	. .	. .	. .	. .	47 28.72	12.03	II.	3	3.43	11 46.3	. .	47 16.69	
4	10	. .	. .	41.4	. .	. .	. .	. .	47 57.07	12.01	IV.	5	2.44	21 17.9	. .	47 45.06	
5	7	. .	29.9	. .	. .	. .	. .	. .	49 1.90	11.98	III.	9	4.21	41 11.0	. .	48 49.92	
6	8	35.9	. .	. .	. .	. .	. .	. .	50 23.89	12.01	II.	6	9.4	28 32.5	. .	50 11.88	
7	10	. .	21.0	. .	. .	. .	. .	. .	50 52.62	12.02	III.	4	7.42	18 48.1	. .	50 40.60	
8	7	. .	. .	10.0	. .	. .	. .	. .	51 25.52	12.02	IV.	3	4.52	12 21.5	. .	51 13.49	
9	8	30.8	. .	. .	. .	. .	. .	. .	53 18.56	12.03	II.	3	8.13	14 3.1	. .	53 6.53	
10	9	. .	46.8	. .	. .	. .	. .	. .	57 18.47	12.01	III.	4	12.40	21 19.1	. .	57 6.46	
11	8	. .	. .	. .	45.9	. .	. .	. .	57 45.73	11.97	V.	9	7.28	42 46.6	. .	57 33.76	
12	10	. .	. .	. .	. .	. .	53.0	. .	58 21.38	12.00	VI.	5	3.54	21 53.1	. .	58 9.38	
13	8	. .	. .	. .	. .	. .	39.9	. .	59 8.09	11.97	VI.	10	3.29	45 47.7	. .	58 56.12	
14	9	. .	. .	. .	. .	. .	31.7	. .	17 59 59.90	− 11.97	VI.	9	9.21	−43 43.6	. .	17 59 47.93	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 15,	15	− 24.52	+ 0.063	+ 0.241	− 0.008	+ 0.130

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 46	July 15,	16 43	30.23	69.6	60.3
		16 52	30.23	69.0	60.3
Zone 47	July 15,	17 44	30.23	68.4	60.3
		18 59	30 23	66.0	58.0

REMARKS.

ZONE 47. JULY 15. K. D₀ = −37° 51′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
15	8	. .	35.3	. .	. .	. .	. .	. .	18 2 6.96	− 12.01	III.	4	11.44	−20 50.8	. .	18 1 54.95	
16	7.8	10.7	. .	43.0	. .	. .	. .	. .	3 58.85	11.99	IV.	7	11.50	34 58.5	. .	3 46.86	
17	6.7	. .	39.3	. .	. .	. .	. .	. .	7 10.98	12.00	III.	4	13.14	21 36.4	. .	6 58.98	
18	8	. .	36.9	. .	. .	. .	. .	. .	8 8.63	11.99	III.	5	9.50	24 53.7	. .	7 56.64	
19	7.8	22.0	38.3	. .	. .	. .	. .	. .	12 10.31	11.96	III.	9	11.27	44 47.8	. .	11 58.35	
20	7	. .	. .	32.8	. .	. .	. .	. .	14 48.94	11.96	IV.	10	6.17	47 13.2	. .	14 36.98	
21	8	. .	26.7	. .	. .	. .	. .	. .	17 58.60	11.97	III.	7	11.23	34 44.8	. .	17 46.63	
22	8	. .	. .	25.1	. .	. .	. .	. .	18 40.66	12.00	IV.	3	10.27	15 11.2	. .	18 28.66	
23	8	. .	. .	. .	9.1	. .	. .	. .	22 8.93	11.99	IV.	4	10.40	20 18.4	. .	21 56.94	
24	9	. .	. .	3.8	. .	. .	. .	. .	25 19.26	12.02	IV.	2	9.1	9 27.0	. .	25 7.24	
25	7	. .	. .	57.1	. .	. .	. .	. .	26 12.81	11.97	IV.	5	7.33	23 44.3	. .	26 0.84	
26	9	4.3	. .	. .	. .	. .	. .	. .	28 51.97	12.01	III.	2	6.29	8 10.0	. .	28 39.96	
27	5	. .	. .	25.3	41.3	. .	. .	. .	33 41.19	11.98	IV.	8	4.20	36 10.7	. .	33 29.21	
28	9	. .	. .	. .	36.0	. .	. .	. .	34 35.83	12.00	V.	5	9.37	24 47.1	. .	34 23.83	
29	9	. .	42.4	. .	. .	. .	. .	. .	42 13.97	12.03	III.	3	11.25	15 40.6	. .	42 1.94	
30	9	7.8	. .	. .	. .	. .	. .	. .	47 55.81	12.02	II.	6	11.16	29 39.4	. .	47 43.79	
31	6.5	26.9	. .	59.0	. .	. .	. .	. .	52 14.98	12.01	III.	7	14.41	36 25.1	. .	52 2.97	
32	9.8	11.0	. .	. .	. .	. .	. .	. .	54 58.84	12.04	II.	4	8.23	19 8.7	. .	54 46.80	
33	9	42.6	. .	. .	. .	. .	. .	. .	56 30.60	12.03	II.	6	10.42	29 22.2	. .	56 18.57	
34	6.7	. .	. .	40.0	. .	. .	. .	. .	56 55.46	12.05	IV.	2	9.20	9 36.7	. .	56 43.41	
35	5.4	. .	55.9	. .	28.0	. .	. .	. .	18 59 27.66	− 12.05	IV.	4	3.4	−16 27.3	. .	18 59 15.61	

ZONE 48. JULY 24. K. D₀ = −31° 34′ 30″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6.7	. .	. .	. .	. .	. .	34.0	. .	21 20 4.74	+ 0.58	VI.	4	7.00	−18 27.7	− 19.5	21 20 5.32	− 31 53 17.2
2	8	. .	. .	. .	. .	5.4	. .	. .	22 50.71	0.59	VI.	8	6.58	37 28.5	19.1	22 51.30	32 12 17.6
3	10	. .	. .	53.4	. .	. .	. .	. .	25 8.31	0.58	IV.	9	11.25	44 43.4	18.8	25 8.89	32 19 32.2
4	8	. .	37.2	. .	6.8	. .	. .	. .	33 6.62	0.52	IV.	5	3.18	21 35.6	17.7	33 7.14	31 56 23.3
5	8	. .	. .	24.6	. .	. .	8.3	. .	35 39.09	0.51	VII.	4	12.5	21 1.6	17.3	35 39.60	55 48.9
6	8	. .	. .	59.3	. .	28.3	. .	. .	47 13.50	0.43	VI.	1	6.25	3 10.8	15.8	47 13.93	31 37 56.6
7	8	. .	. .	. .	. .	. .	20.8	. .	47 51.48	0.46	VII.	7	4.4	31 0.8	15.7	47 51.94	32 5 46.5
8	9	39.7	54.6	. .	. .	. .	. .	. .	50 24.28	0.46	III.	9	3.53	40 54.9	15.4	50 24.74	15 40.3
9	7	. .	. .	54.8	9.7	. .	. .	. .	51 9.58	0.45	V.	8	11.16	39 39.1	15.3	51 10.03	14 24.4
10	10	. .	. .	. .	19.3	. .	. .	. .	52 19.14	0.45	VI.	8	9.28	38 44.3	15.2	52 19.59	13 29.5
11	8	48.0	. .	18.0	. .	. .	. .	. .	54 32.65	0.43	IV.	7	12.20	35 12.0	14.9	54 33.08	9 56.9
12	9	. .	. .	. .	. .	. .	11.3	. .	54 41.88	0.44	VII.	9	11.38	44 49.5	14.9	54 42.37	19 34.4
13	8	. .	. .	. .	52.3	7.0	. .	. .	21 57 52.24	0.43	V.	9	8.10	43 4.8	14.5	21 57 52.67	17 49.3
14	11	. .	. .	2.6	. .	. .	. .	. .	22 3 17.32	0.39	III.	7	7.11	32 35.8	13.9	22 3 17.71	7 19.7
15	9	. .	. .	59.9	. .	. .	. .	. .	4 14.73	0.36	IV.	8	11.33	39 47.7	13.7	5 15.11	14 31.4
16	10	. .	. .	22.1	. .	. .	. .	. .	7 36.82	0.37	IV.	7	8.47	33 24.4	13.5	7 37.19	32 8 7.9
17	9	. .	. .	5.4	20.1	. .	. .	. .	9 19.91	0.34	VI.	4	8.3	18 59.6	13.3	9 20.25	31 53 42.0
18	10	. .	7.2	. .	. .	. .	. .	. .	13 36.56	0.32	III.	4	6.28	18 11.7	12.9	13 36.88	52 54.6
19	8	. .	. .	12.8	27.7	. .	. .	. .	15 27.58	0.34	V.	8	10.46	39 23.9	12.7	15 27.92	31 14 6.6
20	9	14.0	29.0	. .	. .	. .	. .	. .	18 58.53	0.31	III.	7	8.27	33 14.2	12.4	18 58.84	32 7 56.6
21	7	. .	. .	. .	. .	13.0	. .	. .	18 58.34	0.32	VII.	9	10.22	44 11.1	12.4	18 58.66	18 53.5
22	9	. .	48.8	. .	. .	. .	. .	. .	22 18.46	0.30	III.	9	9.12	43 36.1	12.0	22 18.76	32 18 18.0
23	7	. .	. .	. .	. .	45.5	. .	. .	23 30.71	0.27	VII.	3	5.37	12 45.8	12.0	22 30.98	31 47 27.8
24	8	. .	. .	. .	. .	49.8	. .	. .	22 23 35.05	+ 0.27	VII.	5	2.56	−21 24.0	− 11.9	22 23 35.32	− 31 56 5.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 24,	15	− 10.85	+ 0.063	+ 0.572	− 0.411	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 48	July 24,	21 20	30.07	63.9	73.0
		22 45	29.92	75.8	71.5

REMARKS.

(48) 15. Minutes assumed as 5 instead of 4.

ZONE 48. JULY 24. K. $D_0 = -31° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
25	10	. .	35.2	. .	5.0	. .	. .	. .	22 36 4.71	+ 0.26	IV.	4	10.14	−20 6.0	— 10.9	22 36 4.97	— 31 54 46.9
26	8	11.7	. .	. .	. .	. .	. .	. .	40 56.12	0.19	V.	5	9.53	24 55.2	10.6	40 56.31	59 35.8
27	11	. .	20.8	. .	. .	. .	. .	. .	22 45 50.05	+ 0.16	IV.	2	5.41	− 7 48.5	— 10.3	22 45 50.21	— 31 42 28.8

ZONE 49. JULY 29. A. $D_0 = -30° 19' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	. .	. .	2.0	16.0	31.0	. .	19 52 1.79	+ 5.54	VI.	6	5.56	−26 57.0	— 44.1	19 52 7.33	— 30 46 41.1
2	10	. .	. .	. .	. .	. .	33.0	47.5	53 3.98	5.56	V.	7	6.	31 59.8	43.6	53 9.54	51 43.4
3	7	. .	. .	. .	56.2	10.5	. .	. .	54 55.97	5.52	V.	3	9.23	15 10.8	42.8	55 1.49	34 53.6
4	11	. .	. .	. .	31.5	. .	. .	. .	56 31.34	5.52	IV.	4	6.38	18 16.9	42.1	56 36.86	37 59.0
5	11	. .	. .	. .	7.0	21.5	. .	. .	58 6.87	5.51	V.	4	2.50	16 21.7	41.4	58 12.38	36 3.1
6	7	. .	. .	. .	28.5	43.0	. .	. .	19 59 28.40	5.52	V.	7	5.56	31 57.8	40.8	19 59 33.92	51 38.6
7	10	. .	. .	. .	. .	1.5	15.8	. .	20 0 46.92	5.50	VI.	4	10.	19 58.8	40.2	20 0 52.42	39 39.0
8	10	. .	4.5	19.2	. .	. .	. .	. .	3 33.77	5.50	III.	8	11.25	39 43.4	39.0	3 39.27	59 22.4
9	9	. .	. .	. .	. .	21.2	36.0	. .	4 6.88	5.48	VII.	4	12.	20 59.2	38.8	4 12.36	40 38.0
10	6	. .	56.5	11.5	. .	. .	. .	. .	6 25.50	5.44	III.	2	6.10	8 5.4	37.8	6 30.94	27 43.2
11	11	. .	. .	20.5	. .	. .	. .	. .	7 35.11	5.48	III.	8	9.30	38 45.3	37.3	7 40.59	58 22.6
12	8	. .	. .	. .	47.8	2.0	. .	. .	8 47.56	5.47	V.	7	10.2	34 2.1	36.8	8 53.03	53 38.9
13	7	. .	. .	. .	. .	44.8	59.0	14.0	12 30.25	5.45	VII.	7	4.56	31 27.0	35.2	12 35.70	51 2.2
14	8	. .	. .	. .	46.5	0.9	15.3	. .	14 46.35	5.44	VI.	8	8.45	38 22.4	34.2	14 51.79	57 56.6
15	11	. .	. .	58.5	. .	. .	. .	. .	17 12.70	5.40	III.	3	6.30	13 13.2	33.2	17 18.10	32 46.4
16	8	. .	. .	. .	. .	. .	. .	19.0	17 35.31	5.41	VII.	5	6.54	23 24.4	33.0	17 40.72	42 57.4
17	8	. .	38.5	53.0	. .	. .	. .	. .	20 7.59	5.41	III.	7	9.24	33 42.9	31.9	20 13.00	53 14.8
18	9	. .	5.2	20.0	. .	. .	. .	. .	22 34.27	5.38	III.	5	2.19	21 5.8	30.9	22 39.65	40 36.7
19	8	33.2	48.2	. .	. .	. .	. .	. .	24 17.09	5.37	II.	5	4.2	21 57.8	30.1	24 22.46	41 27.9
20	8	5.0	19.8	. .	. .	. .	. .	. .	25 48.68	5.35	II.	3	1.30	10 41.4	29.5	25 54.03	30 30 10.9
21	8	. .	. .	. .	. .	50.0	4.5	. .	27 35.50	5.38	VI.	9	10.	43 59.9	28.7	26 40.88	31 3 28.6
22	8	. .	. .	. .	49.0	. .	. .	. .	28 48.84	5.38	IV.	9	12.	45 0.8	28.2	28 54.22	31 4 29.0
23	9	. .	35.2	50.0	. .	. .	. .	. .	32 4.45	5.35	III.	7	11.5	34 33.9	26.8	32 9.80	30 54 0.7
24	9	. .	. .	. .	4.0	18.0	. .	. .	33 3.67	5.35	V.	9	8.5	43 2.0	26.4	33 9.02	31 2 28.4
25	7	. .	. .	52.0	6.7	. .	. .	. .	36 6.59	5.33	IV.	9	4.50	41 23.5	25.2	36 11.92	31 0 48.7
26	8	18.1	33.0	47.7	. .	. .	. .	. .	40 2.02	5.28	III.	5	9.57	24 57.3	23.5	40 7.30	30 44 20.8
27	10	. .	. .	47.0	1.5	. .	. .	. .	41 1.47	5.29	IV.	8	9.53	38 56.9	23.1	41 6.76	58 20.0
28	8	. .	. .	. .	. .	15.0	29.8	44.2	46 0.61	5.24	VII.	5	6.17	23 5.7	21.1	46 5.85	30 42 26.8
29	7	. .	. .	. .	. .	. .	41.5	56.0	50 12.53	5.25	VII.	10	3.55	45 56.8	19.3	50 17.78	31 5 16.1
30	9	. .	15.8	30.2	. .	. .	. .	. .	52 44.82	5.23	III.	7	7.40	32 50.3	18.3	52 49.05	30 52 8.6
31	9	34.0	49.0	. .	. .	. .	. .	. .	56 18.05	5.21	II.	7	11.15	34 38.8	16.9	56 23.26	53 55.7
32	5	. .	. .	. .	52.0	6.2	20.3	. .	56 51.62	5.19	VI.	5	7.32	23 43.8	16.6	56 56.81	43 0.4
33	9	. .	17.5	32.0	. .	. .	. .	. .	20 59 46.39	5.17	III.	4	8.40	19 18.5	15.5	20 59 51.56	38 34.0
34	11	. .	. .	28.0	42.5	. .	. .	. .	21 4 42.40	+ 5.15	IV.	6	10.34	−29 17.7	— 13.5	21 4 47.55	— 30 48 31.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
July 29,	15	— 5.82	— 0.015	+ 0.572	— 0.411	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°
Zone 49	July 29,	19 52	29.92	77.0	69.5
		21 4	29.90	76.8	68.8

REMARKS.

(49) 3. Micrometer reading assumed as 10r.23 instead of 9r.23.
(49) 21. Minutes assumed as 26 instead of 27.

ZONE 50. AUGUST 3. A. $D_0 = -27° 50' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	7	. .	. .	2.5	16.0	30.0	. .	. .	21 42 1.99	+ 3.72	V.	10	6.35	−47 17.6	− 12.3	21 42 5.71	− 28 38 9.9
2	8	. .	. .	. .	. .	. .	15.7	30.0	43 47.42	3.67	VII.	2	10.22	10 10.6	12.2	43 51.09	1 2.8
3	7	11.5	26.0	40.2	. .	. .	. .	. .	50 54.33	3.64	III.	6	11.38	29 49.8	11.4	50 57.97	20 41.2
4	9	. .	. .	. .	. .	36.5	. .	4.5	50 22.54	3.63	VII.	4	6.27	18 11.1	11.4	51 25.67	9 2.5
5	6	. .	35.4	49.9	3.8	. .	. .	. .	21 54 3.67	3.61	IV.	3	8.45	14 21.7	11.1	21 54 7.28	5 12.8
6	9	. .	. .	19.5	33.5	. .	. .	. .	22 1 33.47	3.58	IV.	7	8.36	33 18.5	10.3	22 1 37.05	28 24 8.8
7	4	. .	. .	. .	53.5	7.2	21.2	. .	2 53.14	3.55	VI.	1	4.53	2 25.2	10.2	2 56.69	27 53 15.4
8	9	. .	. .	. .	5.0	18.5	. .	. .	5 4.57	3.55	V.	6	12.	20 59.7	10.0	5 8.12	28 11 49.7
9	5	. .	. .	. .	. .	. .	12.5	26.8	5 44.37	3.56	VII.	8	11.7	39 33.6	9.9	5 47.93	30 23.5
10	7	2.0	16.5	30.8	. .	. .	. .	. .	8 44.71	3.52	III.	4	4.29	17 11.9	9.7	8 48.23	8 1.6
11	7	34.2	49.0	3.3	. .	. .	. .	. .	11 17.12	3.50	III.	4	5.8	17 31.6	9.4	11 20.62	8 21.0
12	9	41.0	55.5	. .	. .	. .	. .	. .	14 23.85	3.50	II.	6	7.35	27 47.0	9.2	14 27.35	18 36.2
13	6	. .	. .	. .	. .	14.5	. .	. .	15 0.38	3.53	V.	10	7.28	47 44.3	9.1	15 3.91	38 33.4
14	9	. .	13.0	27.0	. .	. .	. .	. .	17 41.04	3.48	III.	3	10.33	15 16.2	8.9	17 44.52	28 6 5.1
15	8	. .	. .	30.0	44.5	. .	. .	. .	19 44.03	3.46	IV.	2	4.57	7 26.9	8.7	19 47.49	27 58 15.6
16	8	. .	. .	51.0	5.0	. .	. .	. .	33 4.81	3.39	IV.	3	3.8	11 30.5	7.8	33 8.20	28 2 18.3
17	7	. .	. .	. .	. .	11.5	25.0	39.6	33 57.03	3.38	VII.	4	8.17	19 6.7	7.7	34 0.41	28 9 54.4
18	9	. .	. .	. .	37.0	51.0	. .	. .	35 36.78	3.38	V.	2	6.57	8 27.5	7.6	35 40.16	27 59 15.1
19	8	21.8	36.0	. .	. .	. .	. .	. .	39 4.41	3.36	II.	4	8.47	19 22.0	7.4	39 7.77	28 10 9.4
20	6	. .	41.0	55.3	9.5	. .	. .	. .	40 9.38	3.36	IV.	6	12.	30 1.0	7.3	40 12.74	28 20 48.3
21	6	. .	. .	48.0	2.0	. .	. .	. .	51 1.74	3.27	IV.	1	6.10	3 4.3	6.8	51 5.01	27 53 51.1
22	5	. .	. .	25.6	39.7	53.6	. .	. .	22 56 39.38	3.25	V.	1	11.44	5 52.9	6.5	22 56 42.63	27 56 39.4
23	9	. .	. .	52.0	6.0	. .	. .	. .	23 2 5.83	3.23	IV.	3	10.30	15 14.7	6.3	23 2 9.06	28 6 1.0
24	9	. .	8.5	23.0	37.0	. .	. .	. .	7 36.77	3.20	IV.	2	8.	8 59.3	6.2	7 39.97	59 45.5
25	6	. .	. .	. .	. .	39.0	53.0	. .	23 8 24.84	+ 3.18	VI.	1	6.32	− 3 15.2	− 6.1	23 8 28.02	− 27 54 1.3
ZONE 51. AUGUST 5. A. $D_0 = -27° 48' 0''$.																	
1	8	. .	. .	. .	. .	. .	9.5	24.5	17 10 41.56	+ 4.75	VII.	2	5.6	−12 33.7	− 33.0	17 10 46.31	− 28 1 6.7
2	7	. .	. .	. .	47.0	1.3	. .	. .	12 46.92	4.74	V.	1	4.50	2 23.9	32.2	12 51.66	27 50 56.1
3	5	. .	. .	. .	. .	5.0	19.1	33.5	13 50.83	4.74	VII.	3	2.5	10 59.3	31.9	13 55.57	27 59 31.2
4	8	. .	. .	. .	. .	. .	. .	32.5	14 50.11	4.79	VII.	9	5.55	41 55.4	31.5	14 54.90	28 30 26.9
5	7	. .	. .	29.5	43.5	. .	. .	. .	16 43.44	4.76	IV.	6	8.4	28 1.8	30.9	16 48.20	16 32.7
6	8	31.0	45.4	. .	. .	. .	. .	. .	18 13.77	4.75	II.	5	9.52	24 54.6	30.4	18 18.52	13 25.0
7	9	. .	. .	. .	. .	. .	. .	52.0	18 9.26	4.73	VII.	3	8.29	14 13.2	30.4	18 13.99	2 43.6
8	9	. .	. .	. .	9.0	23.0	. .	. .	20 8.85	4.78	VII.	9	6.3	41 59.5	29.7	20 13.63	30 29.2
9	8	55.5	10.2	. .	. .	. .	. .	. .	25 38.34	4.73	II.	4	4.42	17 18.5	27.8	25 43.07	5 46.3
10	7	28.7	43.0	. .	. .	. .	. .	. .	28 11.49	4.74	II.	7	5.48	31 53.4	26.9	28 16.23	28 20 20.3
11	6	. .	. .	. .	. .	55.2	8.8	. .	29 40.83	4.71	VI.	2	7.6	8 32.0	26.4	28 45.54	27 56 58.4
12	7	. .	. .	. .	. .	. .	56.5	11.0	30 28.41	4.74	VII.	7	3.5	30 30.8	26.2	29 33.15	28 18 57.0
13	8	17.2	31.8	. .	. .	. .	. .	. .	33 0.07	4.72	II.	5	10.58	25 27.0	25.3	33 4.79	13 52.3
14	8	. .	36.2	50.6	. .	. .	. .	. .	35 4.48	4.71	III.	4	5.50	17 52.8	24.6	35 9.19	6 17.4
15	7	. .	. .	49.5	4.0	. .	. .	. .	36 3.71	4.73	IV.	7	5.28	31 43.4	24.2	36 8.44	20 7.6
16	8	. .	38.2	53.0	. .	. .	. .	. .	38 6.91	4.73	III.	8	3.42	35 49.1	23.5	38 11.64	24 12.6
17	8	. .	49.5	4.0	. .	. .	. .	. .	39 17.89	4.73	III.	5	6.11	23 3.1	23.1	39 22.62	11 26.2
18	10	. .	. .	. .	. .	. .	40.0	. .	40 11.84	4.72	VI.	7	7.12	32 35.8	22.8	40 16.56	20 58.6
19	8	54.0	8.5	22.5	. .	. .	. .	. .	42 36.85	4.72	III.	8	3.55	35 55.7	22.0	42 41.57	24 17.7
20	4	26.5	41.0	55.5	9.2	. .	. .	. .	17 47 9.18	+ 4.67	IV.	3	7.27	−13 42.4	− 20.5	17 47 13.85	− 28 2 2.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Aug. 3,	15	− 6.67	− 0.005	+ 0.372	− 0.163	0.000
Aug. 5,	18	− 6.86	− 0.002	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 50	Aug. 3,	21 42	30.23	74.2	60.5
		23 8	30.22	74.5	60.0
Zone 51	Aug. 5,	17 10	30.05	82.0	77.0
		18 43	30.04	80.0	75.5

REMARKS.

(50) 1. Transits over T.'s IV–VI assumed to have been recorded as over T.'s III–V.
(50) 4. Minutes assumed as 51 instead of 50.
(50) 8. Hor. thread assumed as 4 instead of 6.
(51) 1. Micrometer assumed as 15r.6 instead of 5r.6.
(51) 11. Minutes assumed as 28 instead of 29.
(51) 12. Minutes assumed as 29 instead of 30.
(51) 13. Micrometer assumed as 6r.58 instead of 10r.58.

ZONE 51. AUGUST 5. A. $D_0 = -27° 48' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
21	9	. .	8.0	22.8	. .	. .	. .	. .	17 48 36.49	+ 4.68	III.	4	7.50	−18 53.4	− 19.9	17 48 41.17	− 28 7 13.3
22	9	. .	. .	19.2	33.5	. .	. .	. .	52 33.33	4.68	IV.	7	11.25	34 43.8	18.6	52 38.01	28 23 2.4
23	6	. .	. .	. .	. .	37.2	51.5	. .	53 23.19	4.64	VI.	1	0.30	0 12.4	18.3	53 27.83	27 48 30.7
24	7	. .	. .	35.8	49.8	. .	. .	. .	55 49.53	4.64	IV.	1	3.35	1 46.1	17.5	55 54.17	27 50 3.6
25	6	. .	. .	. .	12.2	26.3	40.4	. .	57 12.14	4.67	VI.	7	9.50	33 55.6	17.0	57 16.81	28 22 12.6
26	4	. .	. .	. .	. .	. .	58.5	12.4	17 58 30.16	4.68	VII.	8	11.32	39 46.2	19.8	17 58 34.84	28 6.0
27	9	. .	. .	45.2	59.5	. .	. .	. .	18 0 59.23	4.65	IV.	5	4.46	22 20.2	19.0	18 1 3.88	10 39.2
28	9	. .	. .	. .	. .	. .	. .	8.2	1 25.69	4.66	VII.	7	7.4	32 31.6	18.8	1 30.35	20 50.4
29	7	. .	. .	50.0	4.4	. .	. .	. .	3 4.13	4.64	IV.	6	7.9	27 40.0	18.3	3 8.77	15 52.3
30	10	. .	. .	. .	. .	. .	. .	7.5	3 24.99	4.65	VII.	7	7.5	32 32.1	18.2	3 29.64	20 50.3
31	8	. .	. .	. .	4.5	18.8	. .	. .	5 4.44	4.62	V.	3	5.29	12 42.7	17.6	5 9.06	1 0.3
32	8	. .	. .	. .	. .	20.5	34.5	49.2	6 6.39	4.62	VII.	4	7.44	18 50.0	17.3	6 11.01	7 7.3
33	5	. .	. .	. .	49.0	3.0	. .	. .	7 48.83	4.64	V.	7	4.42	31 20.2	16.7	7 53.47	19 36.9
34	9	. .	. .	16.0	30.5	. .	. .	. .	9 30.18	4.62	IV.	6	7.49	27 54.2	16.2	9 34.80	16 10.4
35	8	40.4	55.0	. .	. .	. .	. .	. .	11 23.25	4.62	II.	5	5.7	22 30.7	15.6	11 27.87	10 46.3
36	5	. .	57.5	12.0	26.2	. .	. .	. .	12 26.10	4.64	IV.	9	4.38	41 17.0	15.2	12 30.74	29 32.2
37	9	. .	. .	. .	. .	. .	. .	30.5	12 47.93	4.61	VII.	6	6.2	26 59.7	15.1	12 52.54	15 14.8
38	8	. .	. .	. .	31.6	45.5	. .	. .	18 31.39	4.62	V.	8	11.21	39 41.0	13.2	18 36.01	27 54.2
39	8	. .	54.0	8.4	22.5	. .	. .	. .	21 22.27	4.57	IV.	3	9.3	14 30.8	12.4	21 26.84	2 43.2
40	7	. .	. .	. .	19.0	32.5	. .	. .	22 18.61	4.61	V.	10	8.38	48 17.2	12.0	22 23.22	36 29.2
41	9	. .	. .	. .	58.0	. .	26.0	. .	23 57.86	4.58	VI.	5	8.59	24 27.9	11.5	24 2.44	12 39.4
42	7	. .	. .	. .	. .	. .	. .	22.0	24 39.57	4.59	VII.	8	9.58	38 58.7	11.3	24 44.16	27 10.0
43	7	. .	. .	. .	. .	18.8	33.2	47.2	26 4.81	4.59	VII.	8	8.14	38 6.1	10.8	26 9.40	26 16.9
44	5	. .	. .	. .	. .	. .	. .	11.5	27 29.19	4.59	VII.	10	10.38	49 19.9	10.4	27 33.78	37 30.3
45	7	. .	. .	27.5	41.8	. .	. .	. .	29 41.59	4.55	IV.	6	12.	30 1.0	9.7	29 46.14	18 10.7
46	8	. .	4.5	18.8	33.1	. .	. .	. .	31 32.95	4.56	IV.	8	2.25	35 10.3	9.1	31 37.51	23 19.4
47	8	. .	18.0	32.7	. .	. .	. .	. .	33 46.80	4.57	III.	10	6.21	47 10.4	8.3	33 51.37	35 18.7
48	8	. .	8.8	23.3	37.6	. .	. .	. .	35 37.37	4.54	IV.	7	10.5	34 3.4	7.7	35 41.91	22 11.1
49	7	22.2	36.8	51.2	. .	. .	. .	. .	38 5.34	4.55	III.	8	8.13	38 6.0	7.0	38 9.89	26 13.0
50	9	. .	44.6	59.6	13.8	. .	. .	. .	18 43 27.77	+ 4.52	IV.	7	4.15	−31 6.6	− 5.3	18 43 32.29	− 28 19 11.9

ZONE 52. AUGUST 8. A. $D_0 = -27° 47' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	. .	25.5	40.2	18 44 57.43	+ 4.65	VII.	3	6.21	−13 8.6	− 43.7	18 45 2.08	− 28 0 52.3
2	7	. .	. .	. .	. .	42.5	56.5	10.8	46 28.31	4.68	VII.	7	4.28	31 11.5	43.4	46 32.99	18 54.9
3	9	. .	. .	. .	. .	. .	4.2	18.7	47 36.11	4.67	VII.	7	3.18	30 37.4	43.2	47 40.78	28 18 20.6
4	7	. .	. .	17.5	31.0	45.5	. .	. .	49 31.06	4.62	V.	1	6.20	3 9.4	42.8	49 35.68	27 50 52.2
5	6	. .	. .	. .	. .	44.5	58.3	12.9	50 30.26	4.65	VII.	6	6.37	27 17.4	42.6	50 34.91	28 15 0.0
6	8	. .	51.0	5.5	. .	. .	. .	. .	54 19.20	4.61	III.	2	6.28	8 12.4	41.9	54 23.81	27 55 54.3
7	9	. .	17.8	32.2	. .	. .	. .	. .	55 46.26	4.64	III.	7	6.16	32 7.7	41.6	55 50.90	28 19 49.3
8	10	. .	. .	. .	. .	. .	34.5	48.8	56 6.32	4.64	VII.	7	10.46	34 23.7	41.5	56 10.96	28 22 5.2
9	10	. .	46.0	0.5	14.6	. .	. .	. .	18 59 14.29	4.59	IV.	2	7.39	8 48.8	40.9	18 59 18.88	27 56 29.7
10	8	42.6	57.0	. .	. .	. .	. .	. .	19 1 25.43	4.62	II.	7	5.33	31 45.8	40.5	19 1 30.05	28 19 26.3
11	9	. .	24.6	38.8	. .	. .	. .	. .	2 53.01	4.62	III.	8	3.3	35 29.4	40.2	2 57.63	23 9.6
12	10	40.5	54.5	. .	. .	. .	. .	. .	5 23.11	4.59	II.	6	10.15	29 7.7	39.7	5 27.70	16 47.4
13	10	. .	44.5	59.2	. .	. .	. .	. .	6 12.95	4.58	III.	4	8.22	19 9.6	39.6	6 17.53	6 49.2
14	9	. .	. .	50.6	4.5	. .	. .	. .	9 4.65	4.56	IV.	4	3.58	16 56.3	38.9	9 9.21	4 35.2
15	11	. .	. .	. .	. .	59.0	13.5	. .	19 9 45.08	+ 4.56	VI.	4	7.56	−18 56.3	− 38.9	19 9 49.64	− 28 6 35.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
Aug. 8, 18	− 6.72	+ 0.009	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 52	Aug. 8, 18 45	30.01	83.2	79.2
	21 16	29.9	82.0	75.5

REMARKS.

(51) 26. The instrument apparently moved a little in declination.
(51) 50. Transits over T.'s I–III assumed as recorded over T.'s II–V.
(52) 14. Transits over T.'s III and IV assumed as $50^{s}.6$ and $5^{s}.0$ instead of $30^{s}.6$ and $45^{s}.0$, to agree with Arg. Z. 231, 17; 241, 13; and 394, 2.

ZONE 52. AUGUST 8. A. $D_0 = -27° 47' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
16	8	. .	. .	. .	. .	24.5	38.5	52.6	19 11 10.24	+ 4.56	VII.	6	9.15	−28 37.2	− 38.6	19 11 14.80	− 28 16 15.8
17	9	. .	37.5	51.6	. .	. .	. .	. .	14 5.59	4.53	III.	3	11.28	15 44.0	38.1	14 10.12	3 22.1
18	4	. .	. .	50.5	4.5	18.8	32.5	47.1	15 4.44	4.55	VII.	5	3.5	21 28.8	37.9	15 8.99	9 6.7
19	11	. .	. .	. .	32.0	. .	. .	. .	21 31.84	4.50	IV.	4	9.8	19 32.9	36.7	21 36.34	7 9.6
20	10	. .	. .	. .	. .	. .	. .	37.0	21 54.44	4.51	VII.	6	8.17	28 7.9	36.6	21 58.95	15 44.5
21	6	. .	. .	. .	. .	29.0	43.0	57.0	23 14.71	4.52	VII.	7	3.7	30 31.8	36.4	23 19.23	18 8.2
22	8	. .	. .	. .	. .	. .	. .	48.8	24 6.30	4.51	VII.	7	8.20	33 10.0	36.2	24 10.81	20 46.2
23	9	. .	. .	. .	. .	50.0	4.0	. .	25 35.83	4.50	VI.	7	8.2	33 1.1	35.9	25 40.33	28 20 37.0
24	6	. .	. .	. .	35.5	49.5	. .	. .	27 35.27	4.46	V.	1	4.12	2 4.7	35.5	27 39.73	27 49 40.2
25	9	. .	. .	. .	1.5	15.8	29.8	. .	29 1.54	4.46	VI.	4	9.8	19 32.7	35.3	29 6.00	28 7 8.0
26	8	. .	. .	24.0	37.8	. .	. .	. .	30 37.65	4.44	IV.	1	9.32	4 46.4	35.0	30 42.09	27 52 21.4
27	5	. .	. .	. .	26.8	41.0	54.9	. .	31 26.74	4.44	VI.	3	9.4	14 31.2	34.8	31 31.18	28 2 6.0
28	8	. .	. .	. .	. .	. .	34.2	48.8	36 6.10	4.43	VII.	4	3.36	16 44.8	34.0	36 10.53	4 18.8
29	8	. .	3.2	17.5	31.5	. .	. .	. .	38 31.40	4.42	IV.	4	6.23	18 9.5	33.5	38 35.82	5 43.0
30	8	21.0	35.6	49.8	. .	. .	. .	. .	42 3.95	4.42	III.	7	10.31	34 16.5	32.9	42 8.37	21 49.4
31	8	. .	. .	8.8	23.5	. .	. .	. .	43 23.20	4.44	IV.	9	9.29	43 43.9	32.7	43 27.64	28 31 16.6
32	8	. .	. .	. .	. .	56.2	10.0	. .	44 41.94	4.37	VI.	1	9.41	4 50.7	32.4	44 46.31	27 52 23.1
33	8	. .	. .	3.0	17.2	31.3	. .	. .	47 16.96	4.37	V.	3	6.59	13 28.2	32.0	47 21.33	28 1 0.2
34	9	. .	50.0	4.2	. .	. .	. .	. .	49 18.21	4.36	III.	4	10.18	20 8.2	31.6	49 22.57	7 39.8
35	8	. .	. .	41.0	55.2	9.5	. .	. .	50 55.04	4.35	V.	3	9.35	14 47.0	31.3	50 59.39	2 18.3
36	7	. .	18.5	33.0	. .	. .	. .	. .	52 47.02	4.38	III.	8	5.43	36 50.2	31.0	52 51.40	24 21.2
37	3	. .	. .	. .	. .	35.8	49.7	4.1	53 21.53	4.35	VII.	4	9.46	19 51.7	30.9	53 25.88	7 22.6
38	7	. .	. .	. .	8.5	22.6	36.5	. .	55 8.37	4.35	VI.	5	4.43	22 18.5	30.6	55 12.72	9 49.1
39	6	. .	. .	. .	. .	. .	28.2	42.5	55 59.99	4.34	VII.	6	5.0	26 28.4	30.5	56 4.33	13 58.9
40	8	4.5	19.5	. .	. .	. .	. .	. .	19 59 47.68	4.34	II.	8	2.51	35 23.2	29.8	19 59 52.02	22 53.0
41	6	. .	. .	. .	. .	17.5	31.6	45.9	20 0 3.40	4.34	VII.	8	3.30	35 42.7	29.8	20 0 7.74	23 12.5
42	9	. .	. .	. .	27.5	41.5	. .	. .	3 27.34	4.32	V.	7	10.14	34 7.9	29.2	3 31.66	21 37.1
43	8	. .	55.0	9.1	23.8	. .	. .	. .	6 23.53	4.32	IV.	9	10.29	44 14.4	28.7	6 27.85	31 43.1
44	8	. .	. .	. .	. .	34.0	48.0	2.8	7 19.92	4.28	VII.	4	2.22	16 7.4	28.5	7 24.20	3 35.9
45	9	. .	. .	. .	57.8	11.5	25.5	40.0	10 57.44	4.28	VII.	7	4.8	31 2.7	28.0	11 1.72	18 30.7
46	8	. .	. .	. .	. .	18.5	32.0	46.5	15 4.08	4.27	VII.	9	4.22	41 8.5	27.3	15 8.35	28 35.8
47	9	. .	. .	. .	. .	23.0	36.8	51.5	18 8.74	4.20	VII.	3	7.10	13 33.3	26.8	18 12.94	28 1 0.1
48	5	. .	. .	. .	29.3	43.5	57.0	. .	20 29.11	4.18	VII.	1	1.38	0 51.5	26.4	20 33.29	27 48 17.9
49	8	. .	. .	0.0	14.0	28.2	. .	. .	22 13.95	4.20	V.	6	6.48	27 23.3	26.1	22 18.15	28 14 49.4
50	11	. .	. .	50.5	. .	. .	. .	. .	24 4.44	4.19	III.	5	6.52	23 23.8	25.8	24 8.63	10 49.6
51	9	. .	54.5	. .	23.0	. .	. .	. .	26 22.94	4.21	IV.	9	6.34	42 15.6	25.5	26 27.15	29 41.1
52	11	. .	. .	41.0	. .	. .	. .	. .	28 55.09	4.18	III.	7	5.55	31 57.1	25.1	28 59.27	19 22.2
53	7	4.6	19.2	. .	. .	. .	. .	. .	30 47.52	4.16	II.	6	6.00	26 59.0	24.8	30 51.68	14 23.8
54	7	. .	59.8	14.2	28.5	. .	. .	. .	31 28.19	4.14	IV.	4	8.37	19 17.2	24.7	31 32.33	6 41.9
55	6	. .	. .	. .	. .	38.8	52.8	6.9	32 24.59	4.18	VII.	9	10.19	44 8.8	24.5	32 28.77	31 33.3
56	7	. .	18.7	33.0	47.5	. .	. .	. .	34 47.25	4.16	IV.	8	11.15	39 38.0	24.2	34 51.41	28 27 2.2
57	8	. .	. .	. .	. .	. .	. .	13.8	35 31.02	4.11	VII.	3	2.23	11 8.4	24.1	35 35.13	27 58 32.5
58	7	28.5	42.9	57.2	. .	. .	. .	. .	38 11.27	4.12	III.	6	6.15	27 6.6	23.7	38 15.39	28 14 30.3
59	5	. .	. .	. .	47.0	1.0	15.2	. .	38 46.90	4.12	VI.	7	3.	30 28.6	23.6	38 51.02	28 17 52.2
60	6	. .	33.0	47.5	. .	. .	. .	. .	41 1.20	4.07	III.	2	5.35	7 46.1	23.3	41 5.27	27 55 9.4
61	5	. .	. .	. .	30.5	44.5	. .	. .	42 30.36	4.12	V.	10	3.35	45 46.5	23.0	42 34.48	28 33 9.5
62	7	. .	. .	. .	14.5	28.5	. .	. .	44 14.36	4.11	V.	10	7.28	47 44.2	22.8	44 18.47	35 7.0
63	5	. .	. .	. .	. .	. .	. .	44.5	45 2.10	4.10	VII.	9	5.45	41 50.4	22.7	45 6.20	29 13.1
64	8	55.0	9.2	23.8	. .	. .	. .	. .	20 48 37.79	+ 4.06	III.	7	5.26	−31 42.4	− 22.2	20 48 41.85	− 28 19 4.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM. At.	THERMOM. Ex.
1846.	h. m.	in.	°	°

REMARKS.

(52) 45. Declination apparently 15″ too large.

ZONE 52. AUGUST 8. A. $D_\circ = -27^\circ\ 47'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
65	11	. .	. .	. .	41.5	. .	. .	. .	20 49 41.34	+ 4.02	IV.	2	4.45	− 7 20.9	− 22.0	20 49 45.36	− 27 54 42.9
66	7	. .	49.8	4.4	18.3	. .	. .	. .	51 18.08	4.01	IV.	2	5.46	7 51.7	21.8	51 22.09	27 55 13.5
67	7	. .	. .	. .	31.2	45.0	59.3	. .	52 31.00	4.05	VI.	8	3.37	35 46.4	21.6	52 35.05	28 23 8.0
68	5	. .	. .	. .	9.2	23.2	37.1	. .	54 9.00	4.03	VI.	7	5.27	31 42.8	21.4	54 13.03	19 4.2
69	8	. .	. .	. .	. .	. .	. .	3.5	55 20.83	4.00	VII.	4	10.00	19 58.7	21.3	55 24.83	7 20.0
70	8	. .	23.0	37.2	51.8	. .	. .	. .	20 57 51.42	4.00	IV.	6	8.20	28 9.8	20.9	20 57 55.42	15 30.7
71	7	. .	50.8	4.8	19.4	. .	. .	. .	21 3 19.22	3.99	IV.	9	8.51	43 24.8	20.2	21 3 23.21	30 45.0
72	4	. .	. .	. .	19.5	33.5	47.2	1.5	4 19.15	3.96	VII.	6	4.46	26 21.4	20.1	4 23.11	28 13 41.5
73	5	. .	29.5	44.0	58.0	. .	. .	. .	10 57.71	3.89	IV.	1	6.5	3 1.8	19.3	11 1.60	27 50 21.1
74	8	. .	. .	. .	14.5	28.0	42.5	56.5	12 14.13	3.93	VII.	8	1.25	34 39.6	19.1	12 18.06	28 21 58.7
75	8	43.8	58.3	12.5	. .	. .	. .	. .	21 16 26.66	+ 3.90	III.	7	6.26	−32 12.7	− 18.6	21 16 30.56	− 28 19 31.3

ZONE 53. AUGUST 11. A. $D_\circ = -25^\circ\ 17'\ 0''$.

1	8	. .	. .	. .	. .	. .	. .	56.0	17 31 14.25	+ 4.04	VII.	4	6.56	−13 27.0	− 111.0	17 31 18.29	− 25 32 18.0
2	9	. .	. .	. .	. .	21.5	34.5	. .	33 7.25	4.04	VI.	5	6.21	23 7.9	110.4	33 11.29	41 58.3
3	10	49.0	3.5	. .	. .	. .	. .	. .	35 30.97	4.03	II.	4	11.10	20 34.4	109.6	35 35.00	39 24.0
4	8	39.0	53.8	. .	. .	. .	. .	. .	37 21.14	4.03	II.	5	5.21	22 37.8	109.0	37 25.17	41 26.8
5	11	. .	. .	. .	. .	. .	. .	11.5	37 29.82	4.03	VII.	5	7.26	23 40.7	108.9	37 33.85	42 29.6
6	7	. .	11.2	25.0	. .	. .	. .	. .	39 38.80	4.02	III.	5	5.43	22 49.0	108.2	39 42.82	41 37.2
7	8	. .	. .	. .	15.0	28.8	42.0	. .	40 14.72	4.04	VI.	8	5.45	36 50.9	108.0	40 18.76	55 38.9
8	7	51.5	5.5	. .	. .	. .	. .	. .	42 33.27	4.01	II.	5	9.43	24 50.1	107.3	42 37.28	43 37.4
9	10	. .	. .	. .	. .	. .	7.0	21.5	42 39.63	4.01	VII.	6	4.12	26 4.2	107.2	42 43.64	44 51.4
10	8	. .	. .	. .	. .	. .	25.2	39.2	43 57.63	4.03	VII.	8	10.00	38 59.5	106.8	44 1.66	57 46.3
11	9	. .	. .	. .	. .	. .	23.0	37.0	44 55.42	4.03	VII.	8	5.36	36 46.2	106.5	44 59.45	55 32.7
12	6	. .	26.2	40.0	54.0	. .	. .	. .	46 53.79	3.99	IV.	4	9.30	19 44.1	105.8	46 57.78	38 29.9
13	6	. .	. .	. .	7.0	21.5	. .	. .	48 7.18	3.97	V.	1	6.00	2 59.6	105.4	48 11.15	25 21 45.0
14	7	. .	. .	. .	. .	17.0	31.0	. .	49 3.26	4.02	VI.	10	3.00	45 28.4	105.1	49 7.28	26 4 13.5
15	6	. .	. .	. .	. .	. .	. .	35.8	49 54.19	3.99	VII.	6	10.12	29 6.0	104.8	49 58.18	25 47 50.8
16	11	. .	51.0	5.5	. .	. .	. .	. .	52 18.88	3.97	III.	4	4.52	17 23.6	104.0	52 22.85	25 36 7.6
17	8	. .	. .	. .	. .	21.0	. .	. .	53 7.18	4.01	V.	10	7.53	47 26.2	103.8	53 11.19	26 6 10.0
18	7	. .	. .	. .	. .	13.0	27.0	41.0	53 59.33	4.00	VII.	8	3.48	35 51.6	103.5	54 3.33	25 54 35.1
19	6	. .	. .	. .	. .	41.2	54.8	9.2	55 27.32	3.96	VII.	4	5.30	17 42.5	103.0	55 31.28	36 25.5
20	7	. .	. .	. .	12.5	26.0	40.0	. .	57 12.29	3.95	VI.	2	10.20	10 10.2	102.4	57 16.24	28 52.6
21	7	. .	. .	. .	. .	. .	41.0	55.2	58 13.44	3.95	VII.	3	12.	16 0.0	102.1	58 17.39	34 42.1
22	7	. .	. .	. .	. .	. .	. .	42.0	17 59 0.34	3.96	VII.	5	10.16	25 6.6	101.8	17 59 4.30	43 48.4
23	5	1.5	15.5	29.5	. .	. .	. .	. .	18 1 43.30	3.96	III.	6	8.56	28 27.9	100.9	18 1 47.26	25 47 8.8
24	8	. .	. .	. .	. .	29.5	43.3	56.8	2 15.57	3.97	VII.	9	8.56	43 26.6	100.7	2 19.54	26 2 7.3
25	7	7.8	21.8	35.8	. .	. .	. .	. .	5 49.64	3.95	III.	7	4.5	31 1.4	99.6	5 53.59	25 49 41.0
26	8	. .	. .	. .	36.0	50.0	. .	. .	6 35.98	3.94	V.	6	4.00	26 28.7	99.3	6 39.92	45 8.0
27	8	. .	. .	. .	. .	. .	25.5	39.8	6 57.99	3.93	VII.	4	3.48	16 51.0	99.2	7 1.92	35 30.2
28	5	. .	. .	7.0	20.8	34.7	. .	. .	9 20.70	3.91	V.	4	11.15	20 37.0	98.4	9 24.61	39 15.4
29	7	. .	. .	. .	. .	. .	. .	30.0	9 48.22	3.90	VII.	3	11.37	15 48.4	98.2	9 52.12	34 26.6
30	9	. .	. .	. .	. .	41.5	55.0	. .	11 27.51	3.92	VI.	6	10.58	29 29.4	97.7	11 31.43	48 7.1
31	9	. .	. .	. .	. .	. .	. .	18.0	12 36.40	3.92	VII.	7	2.37	30 16.8	97.3	12 40.32	25 48 54.1
32	8	. .	. .	. .	. .	53.0	6.5	. .	15 39.00	3.93	VI.	9	6.39	42 17.6	96.3	15 42.93	26 0 53.9
33	8	. .	. .	. .	17.2	31.0	. .	. .	17 17.10	3.92	V.	9	4.29	41 12.1	95.8	17 21.02	25 59 47.9
34	10	. .	. .	. .	. .	52.5	6.5	. .	18 18 38.75	+ 3.89	VI.	6	6.46	−27 22.2	− 95.3	18 18 42.64	− 25 45 57.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
Aug. 11, 18	− 7.22	− 0.008	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 53	Aug. 11, 17 31	30.06	78.0	71.5

REMARKS.

(53) 1. Micrometer assumed as wire 3 instead of wire 4.
(53) 17. Micrometer reading assumed as $6^{r}.53$ instead of $7^{r}.53$.
(53) 26. Micrometer reading assumed as $5^{r}.00$ instead of $4^{r}.00$.

ZONE 53. AUGUST 11. A. $D_0 = -25° 17' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
35	7	. .	55.0	9.5	. .	. .	. .	. .	18 20 22.91	+ 3.87	III.	4	9.3	−20 0.6	− 94.7	18 20 26.78	− 25 38 35.3
36	7	. .	. .	. .	59.2	. .	27.0	. .	20 59.24	3.87	VI.	4	9.54	19 56.0	94.5	21 3.11	38 30.5
37	7	. .	. .	. .	19.5	33.5	. .	. .	22 19.48	3.87	V.	6	9.28	28 44.1	94.1	22 23.35	47 18.2
38	11	. .	. .	1.5	16.0	. .	. .	. .	24 15.58	3.86	IV.	6	11.45	29 53.3	93.4	24 19.44	48 26.7
39	8	. .	. .	. .	. .	. .	15.5	29.8	24 47.96	3.84	VII.	2	11.6	10 33.2	93.3	24 51.80	29 6.5
40	10	. .	. .	. .	. .	. .	47.0	1.0	27 19.37	3.85	VII.	5	10.5	25 1.0	92.4	26 23.22	43 33.4
41	6	. .	. .	. .	50.5	4.0	18.0	. .	27 50.29	3.85	VI.	6	8.19	28 9.1	92.3	27 54.44	46 41.4
42	6	. .	. .	. .	. .	. .	23.3	37.5	28 55.73	3.83	VII.	3	8.16	14 6.9	91.9	28 59.56	32 38.8
43	8	. .	. .	. .	32.0	46.0	0.0	13.5	30 32.04	3.83	VII.	4	8.59	19 28.0	91.4	30 35.87	37 59.4
44	9	. .	. .	. .	. .	. .	. .	41.0	31 59.21	3.81	VII.	3	10.21	15 10.0	90.9	32 3.02	33 40.9
45	9	. .	. .	. .	. .	47.0	0.8	14.6	34 33.07	3.81	VII.	4	9.28	19 42.7	90.0	34 36.88	38 12.7
46	9	. .	. .	. .	. .	. .	19.2	33.0	34 51.44	3.81	VII.	4	7.30	18 43.1	89.9	34 55.25	37 13.0
47	8	. .	. .	46.5	. .	13.5	. .	. .	37 59.72	3.78	V.	1	7.35	3 47.6	88.9	38 3.50	22 16.5
48	8	. .	. .	. .	20.5	. .	48.0	. .	40 20.38	3.80	VI.	6	8.8	28 3.6	88.1	40 24.18	46 31.7
49	8	. .	. .	50.0	3.5	. .	. .	. .	42 3.38	3.76	IV.	1	6.27	3 13.3	87.5	42 7.14	21 40.8
50	7	9.5	23.3	. .	. .	. .	. .	. .	47 51.12	3.75	II.	4	11.41	20 50.0	85.6	47 54.87	39 15.6
51	11	. .	. .	. .	. .	50.5	4.0	18.5	48 36.59	3.75	VII.	4	4.44	17 19.3	85.3	48 40.34	35 44.6
52	8	. .	. .	6.0	20.0	. .	. .	. .	50 19.75	3.74	IV.	4	8.32	19 14.8	84.8	50 23.49	37 39.6
53	8	. .	. .	. .	40.5	54.0	. .	. .	51 40.24	3.76	V.	8	6.33	37 15.3	84.3	51 44.00	55 39.6
54	7	. .	. .	51.5	5.5	. .	. .	. .	53 5.37	3.76	IV.	8	3.3	35 29.3	83.8	53 9.13	53 53.1
55	8	. .	. .	. .	26.5	. .	. .	. .	54 26.35	3.70	IV.	1	8.27	4 13.9	83.4	54 30.05	22 37.3
56	5	. .	. .	. .	29.0	43.0	. .	. .	55 28.94	3.71	V.	2	7.0	8 29.3	83.0	55 32.65	25 26 52.3
57	8	. .	. .	. .	. .	25.5	39.5	. .	57 11.75	3.75	VI.	9	10.12	44 5.2	82.5	57 15.50	26 2 27.7
58	6	. .	. .	. .	36.2	50.0	3.7	. .	58 36.09	3.74	VI.	8	6.57	37 27.3	82.0	58 40.83	25 55 49.3
59	9	. .	. .	. .	. .	. .	17.0	31.2	18 59 49.48	3.71	VII.	5	9.55	24 56.0	81.6	18 59 53.19	43 17.6
60	8	. .	39.0	53.0	. .	. .	. .	. .	19 2 6.76	3.70	III.	6	4.26	26 11.6	80.9	19 2 10.46	44 32.5
61	8	. .	57.8	11.5	. .	. .	. .	. .	3 25.52	3.69	III.	8	5.00	36 28.3	80.5	3 29.21	54 48.8
62	8	. .	. .	. .	. .	18.0	31.5	46.0	4 4.13	3.69	VII.	6	8.55	28 27.1	80.2	4 7.82	46 47.3
63	10	. .	. .	. .	. .	. .	. .	56.0	5 14.24	3.68	VII.	4	4.50	17 22.3	79.9	5 17.92	35 42.2
64	5	. .	. .	40.0	54.5	. .	. .	. .	6 54.13	3.69	IV.	8	6.7	37 2.2	79.3	6 57.82	55 21.5
65	8	. .	. .	. .	. .	. .	35.0	50.0	7 7.84	3.67	VII.	4	5.20	17 37.4	79.3	7 11.51	35 56.7
66	9	. .	. .	. .	. .	55.5	9.2	. .	10 41.61	3.64	VI.	3	7.35	13 46.4	78.1	10 45.25	32 4.5
67	7	. .	. .	28.5	42.0	. .	. .	. .	11 42.08	3.65	IV.	6	12.0	30 0.9	77.8	11 45.73	25 48 18.7
68	8	. .	. .	. .	. .	53.0	6.5	. .	12 39.00	3.67	VI.	9	5.57	41 56.4	77.5	12 42.67	26 0 13.9
69	6	. .	. .	. .	. .	8.0	22.0	36.0	13 54.29	3.64	VII.	6	5.45	26 51.2	77.0	13 57.93	25 45 8.2
70	9	. .	. .	. .	. .	. .	. .	33.5	14 51.77	3.63	VII.	4	9.8	19 32.6	76.7	14 55.40	37 49.3
71	8	47.5	1.5	. .	. .	. .	. .	. .	17 29.07	3.63	II.	6	10.25	34 13.3	75.9	17 32.70	52 29.2
72	8	19.2	33.3	. .	. .	. .	. .	. .	20 1.05	3.61	II.	6	7.40	27 49.4	75.1	20 4.66	46 4.5
73	7	. .	30.5	44.5	58.5	. .	. .	. .	20 58.29	3.61	IV.	6	4.38	26 17.7	74.7	21 1.90	25 44 32.4
74	5	. .	. .	. .	1.5	15.0	29.0	. .	22 1.29	3.62	VI.	9	10.52	44 25.4	74.4	22 4.91	26 2 39.8
75	7	. .	28.0	42.2	. .	. .	. .	. .	23 55.87	3.59	III.	6	7.45	27 52.1	73.8	23 59.46	25 46 5.9
76	8	. .	. .	. .	45.5	. .	. .	. .	24 45.35	3.61	IV.	9	8.21	43 9.4	73.5	24 48.96	26 1 22.9
77	10	. .	. .	. .	. .	48.5	. .	. .	26 4.62	3.59	V.	7	2.44	30 20.5	73.1	26 8.21	25 48 33.6
78	6	. .	. .	. .	. .	4.5	18.0	32.4	27 50.50	3.55	VII.	2	2.17	6 6.1	72.5	27 54.05	24 18.6
79	9	. .	. .	. .	. .	. .	4.5	18.0	29 36.67	3.57	VII.	8	4.32	36 13.9	72.0	29 40.24	54 25.9
80	9	26.0	40.0	. .	. .	. .	. .	. .	33 7.74	3.54	II.	5	4.24	22 9.0	70.8	33 11.28	40 19.8
81	8	. .	. .	31.5	46.0	. .	. .	. .	33 45.61	3.56	IV.	7	11.22	34 42.1	70.6	33 49.17	52 52.7
82	10	57.5	11.5	25.5	. .	. .	. .	. .	35 39.18	3.53	III.	5	3.22	21 37.8	70.0	35 42.71	39 47.8
83	9	. .	. .	. .	. .	. .	27.7	41.5	19 35 59.98	+ 3.53	VII.	6	3.31	−25 43.5	− 69.9	19 36 3.51	− 25 43 53.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(53) 35. Micrometer reading assumed as 10$^{\text{r}}$.3 instead of 9$^{\text{r}}$.3.
(53) 40. Minutes assumed as 26 instead of 27.
(53) 71. Micrometer assumed as wire 7 instead of wire 6.

ZONE 53. AUGUST 11. A. $D_0 = -25° 17' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
84	7	45.6	0.0	14.1	. .	. .	. .	. .	19 38 27.85	+ 3.54	III.	9	4.40	−41 17.7	− 69.1	19 38 31.39	− 25 59 26.8
85	8	47.4	2.0	15.7	. .	. .	. .	. .	41 29.43	3.49	III.	5	5.19	22 36.9	68.2	41 32.92	40 45.1
86	7	15.5	30.1	44.0	. .	. .	. .	. .	43 57.71	3.50	III.	7	6.50	32 24.8	67.4	44 1.21	50 32.2
87	11	. .	. .	. .	. .	. .	29.5	. .	46 1.87	3.48	VI.	8	4.56	36 26.2	66.8	46 5.35	54 33.0
88	8	. .	51.8	5.5	19.7	. .	. .	. .	48 19.36	3.45	IV.	4	2.39	16 16.5	66.0	48 22.81	34 22.5
89	9	. .	. .	. .	. .	. .	22.5	37.0	19 49 55.07	+ 3.43	VII.	3	3.4	−11 29.3	− 65.5	19 49 58.50	− 25 29 34.8

ZONE 54. AUGUST 11. A. $D_0 = -25° 17' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	32.8	46.8	. .	. .	. .	. .	. .	20 47 14.60	+ 3.14	II.	6	7.38	−27 48.4	− 66.4	20 47 17.74	− 25 45 54.8
2	7	. .	. .	. .	. .	3.2	17.0	31.0	48 49.29	3.11	VII.	2	8.58	9 28.6	65.9	48 52.40	27 34.5
3	7	. .	. .	. .	. .	. .	37.0	50.8	50 9.34	3.13	VII.	8	9.28	38 43.3	65.5	50 12.47	56 48.8
4	7	. .	11.5	26.0	39.5	. .	. .	. .	53 39.32	3.06	IV.	2	9.10	9 35.0	64.5	53 42.38	27 39.5
5	7	. .	. .	. .	. .	39.5	53.0	7.4	55 25.58	3.08	VII.	5	3.30	21 41.6	64.0	54 28.66	39 45.6
6	4	. .	50.0	3.3	17.5	31.6	. .	. .	20 58 17.40	3.06	V.	4	6.10	18 3.0	63.1	20 58 20.46	36 6.1
7	8	. .	53.0	7.0	21.0	. .	. .	. .	21 0 20.61	3.03	IV.	1	10.13	5 7.4	62.6	21 0 23.64	23 10.0
8	8	. .	. .	. .	. .	31.0	44.2	58.5	1 16.78	3.02	IV.	1	12.	7 32.2	62.3	1 19.80	25 34.5
9	11	. .	. .	. .	. .	. .	41.0	54.5	3 13.20	3.06	VII.	9	5.4	41 29.5	61.7	3 16.26	59 31.2
10	9	. .	. .	. .	. .	. .	17.0	31.0	4 49.39	3.04	VII.	7	1.18	29 36.0	61.3	4 52.43	47 37.3
11	9	5.0	19.0	33.0	. .	. .	. .	. .	9 46.71	2.99	III.	5	1.29	20 40.8	59.8	9 49.70	38 40.6
12	7	. .	. .	. .	. .	58.0	11.0	. .	12 43.76	2.95	VI.	1	5.4	2 31.2	59.0	12 46.71	20 30.2
13	6	27.3	41.7	55.7	. .	. .	. .	. .	15 9.41	2.98	III.	7	6.48	32 23.7	58.4	15 12.39	50 22.1
14	9	56.0	10.8	. .	. .	. .	. .	. .	16 38.07	2.94	II.	3	9.16	14 37.4	57.9	16 41.01	32 35.3
15	7	. .	. .	. .	. .	16.0	30.3	44.0	17 2.41	2.97	VII.	7	11.45	34 53.4	57.8	17 5.38	52 51.2
16	8	. .	55.5	9.5	. .	. .	. .	. .	19 23.39	2.96	III.	8	8.7	38 2.8	57.2	19 26.35	56 0.0
17	9	. .	. .	. .	. .	52.0	6.0	20.0	19 38.29	2.94	VII.	6	5.24	26 40.6	57.1	19 41.23	44 37.7
18	6	. .	14.8	28.8	. .	. .	. .	. .	21 42.62	2.94	III.	7	7.35	32 47.4	56.5	21 45.56	50 43.9
19	7	. .	. .	. .	. .	. .	. .	37.5	22 56.02	2.93	VII.	8	10.49	39 24.2	56.2	22 58.95	57 20.4
20	9	. .	. .	47.0	1.0	15.0	. .	. .	25 0.97	2.92	V.	8	4.6	36 1.0	55.6	25 3.89	53 56.6
21	9	. .	. .	. .	. .	. .	15.5	29.5	25 47.85	2.89	VII.	4	8.11	19 3.8	55.4	25 50.74	36 59.2
22	8	16.0	30.0	44.2	. .	. .	. .	. .	28 57.80	2.88	III.	5	6.35	23 15.3	54.6	29 0.68	41 9.9
23	10	. .	56.5	. .	. .	. .	. .	. .	30 24.28	2.88	II.	6	9.50	28 55.1	54.2	30 27.16	46 49.3
24	8	. .	. .	0.5	14.5	28.2	. .	. .	31 14.36	2.88	V.	8	3.46	35 51.0	54.0	31 17.24	53 45.0
25	6	25.0	39.1	53.2	. .	. .	. .	. .	33 6.91	2.86	III.	6	9.47	28 53.7	53.5	33 9.77	46 47.2
26	8	. .	. .	. .	. .	. .	35.0	49.0	34 7.28	2.83	VII.	1	10.8	5 4.5	53.2	34 10.11	22 57.7
27	6	. .	. .	. .	. .	8.0	21.8	36.0	35 54.19	2.83	VII.	4	5.19	17 37.0	52.7	35 57.02	35 29.7
28	8	. .	. .	. .	36.2	50.0	3.5	. .	37 36.02	2.81	VI.	3	5.2	12 29.2	52.3	37 38.83	30 21.5
29	7	. .	. .	. .	. .	. .	49.5	3.0	38 21.63	2.83	VII.	6	7.23	27 40.6	52.1	38 24.46	45 32.7
30	8	34.2	48.5	2.2	. .	. .	. .	. .	41 16.15	2.82	III.	7	7.55	32 57.6	51.3	41 18.97	50 48.9
31	10	18.3	32.5	. .	. .	. .	. .	. .	43 0.19	2.81	II.	6	5.51	26 54.4	50.9	43 3.00	25 44 45.3
32	8	. .	. .	. .	. .	1.0	14.5	. .	43 47.01	2.82	VI.	9	12.	46 30.5	50.7	43 49.83	26 4 21.2
33	9	. .	. .	. .	. .	31.0	44.5	59.0	45 17.15	2.80	VII.	7	6.39	32 18.9	50.3	45 19.95	25 50 9.2
34	8	. .	. .	. .	. .	9.0	23.0	36.8	46 55.22	2.78	VII.	5	10.50	25 23.7	49.9	46 58.00	25 43 13.6
35	7	. .	4.5	18.5	32.8	. .	. .	. .	50 32.54	2.78	IV.	10	4.31	46 14.5	49.0	50 35.32	26 4 3.5
36	8	58.3	12.2	26.4	. .	. .	. .	. .	52 40.07	2.75	III.	6	3.36	25 46.3	48.5	52 42.82	25 43 34.8
37	8	. .	. .	. .	. .	. .	36.0	50.3	53 8.51	2.74	VII.	5	4.22	17 7.1	48.4	53 11.25	34 55.5
38	8	. .	. .	. .	19.0	33.0	46.5	. .	55 18.96	2.72	VI.	3	8.58	14 28.3	47.8	55 21.68	32 16.1
39	9	. .	50.0	4.0	18.0	. .	. .	. .	21 59 17.63	+ 2.70	IV.	2	5.45	− 7 51.5	− 46.9	21 59 20.33	− 25 25 38.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1846. h. m.	in.	°	°
Zone 54	Aug. 11, 22 29	30.08	76.0	68.0

REMARKS.

(54) 5. Minutes assumed as 54 instead of 55.
(54) 8. Micrometer reading assumed as 15ʳ.00 instead of 12ʳ.00.
(54) 32. Micrometer reading assumed as 15ʳ.00 instead of 12ʳ.00.
(54) 37. Hor. thread assumed as 4 instead of 5.

ZONE 54. AUGUST 11. A. D₀=−25° 17′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
40	10	. .	12.0	. .	. .	. .	. .	. .	22 1 39.78	+ 2.70	II.	6	11.16	−29 38.5	− 46.3	22 1 42.48	− 25 47 24.8
41	9	. .	27.5	41.4	. .	. .	. .	. .	2 55.14	2.68	III.	5	4.30	22 12.2	46.0	2 57.82	39 58.2
42	10	. .	. .	. .	58.5	. .	. .	. .	3 58.35	2.70	IV.	8	11.32	39 46.3	45.8	4 1.05	57 32.1
43	5	. .	. .	. .	. .	29.4	43.0	56.8	5 15.40	2.69	VII.	8	7.10	37 33.6	45.5	5 18.09	55 19.1
44	9	. .	. .	. .	51.5	5.5	19.0	. .	6 51.45	2.67	VI.	6	4.20	26 8.4	45.1	6 54.12	43 53.5
45	8	. .	. .	. .	22.0	35.5	. .	. .	12 21.74	2.65	V.	7	10.35	34 18.4	43.8	12 24.39	52 2.2
46	9	. .	50.0	3.8	. .	. .	. .	. .	14 17.43	2.61	III.	2	7.58	8 58.6	43.4	14 20.04	26 42.0
47	4	. .	. .	52.5	6.0	19.8	. .	. .	15 5.92	2.60	V.	3	6.48	13 22.8	43.2	15 8.52	31 6.0
48	9	. .	49.5	3.5	. .	. .	. .	. .	17 17.07	2.59	III.	2	12.	11 31.1	42.7	17 19.66	29 13.8
49	10	. .	. .	39.0	52.8	. .	. .	. .	21 52.58	2.56	IV.	2	10.42	10 21.4	41.7	21 55.14	28 3.1
50	9	. .	. .	. .	24.5	. .	. .	. .	23 24.35	2.55	IV.	2	10.30	10 15.4	41.4	23 26.90	27 56.8
51	8	. .	. .	. .	21.5	35.0	. .	. .	24 21.19	2.54	V.	1	10.49	5 25.6	41.2	24 23.73	23 6.8
52	10	. .	10.0	. .	. .	. .	. .	. .	27 37.75	2.54	II.	6	4.29	26 13.0	40.5	27 40.29	43 53.5
53	9	. .	. .	. .	54.0	8.0	. .	. .	27 53.99	2.55	V.	8	3.53	35 54.5	40.4	27 56.54	53 34.9
54	10	. .	13.0	26.8	. .	. .	. .	. .	22 29 40.69	+ 2.53	III.	6	10.15	−29 7.8	− 40.0	22 29 43.22	− 25 46 47.8

ZONE 55. AUGUST 12. K. D₀=−30° 56′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	49.7	4.3	19.0	. .	. .	. .	17 34 18.78	+ 4.55	V.	3	11.22	−15 40.7	− 6.0	17 34 23.33	− 31 11 56.7
2	9	6.5	. .	36.2	. .	. .	. .	. .	37 50.45	4.54	IV.	3	2.45	11 19.5	5.2	37 54.99	7 34.7
3	6	37.7	52.7	7.2	22.2	. .	. .	. .	39 22.05	4.58	IV.	9	7.00	42 29.3	4.9	39 26.63	38 44.2
4	8	4.6	19.4	34.0	. .	. .	. .	. .	41 48.63	4.53	IV.	5	11.17	25 37.8	4.4	41 53.16	21 52.2
5	7	. .	. .	16.0	30.8	45.3	. .	. .	42 30.56	4.52	VI.	4	11.22	20 40.2	4.3	42 35.c8	16 54.5
6	9.10	. .	. .	40.6	55.3	9.6	. .	. .	46 55.11	4.54	VII.	7	8.36	33 18.2	3.4	46 59.65	29 31.6
7	9.10	. .	58.8	. .	29.0	. .	. .	. .	17 49 28.47	+ 4.52	VI.	6	10.15	−29 7.9	− 2.9	17 49 32 99	− 31 25 20.8

ZONE 56. AUGUST 12. K. D₀=−36° 31′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	7.9	. .	18 5 36.93	+ 4.42	VI.	1	9.17	− 4 35.6	− 51.7	18 5 41.35	− 36 36 47.3
2	4.5	. .	. .	8.8	24.3	. .	. .	. .	7 24.12	4.44	IV.	3	11.43	15 50.3	51.2	7 28.56	48 1.5
3	10	. .	. .	. .	10.8	. .	. .	. .	17 10.63	4.41	VI.	5	11.51	25 54.8	48.4	17 15.04	36 58 3.2
4	10	. .	. .	15.8	. .	. .	. .	. .	18 31.42	4.43	VI.	7	7.41	32 51.6	48.0	18 35.85	37 4 59.6
5	10	. .	. .	35.7	. .	. .	. .	. .	18 51.33	4.42	VI.	7	9.28	33 45.8	47.9	18 55.75	37 5 53.7
6	9	9.1	. .	. .	. .	. .	. .	. .	20 56.22	4.39	III.	4	14.15	22 7.4	47.3	21 0.61	36 54 14.7
7	10	38.1	. .	. .	. .	. .	. .	. .	23 25.24	4.39	II.	5	4.55	22 24.1	46.6	23 29.63	54 30.7
8	11	. .	. .	. .	38.1	. .	. .	. .	25 37.93	4.38	VII.	5	6.33	23 13.4	45.9	25 42.31	55 19.3
9	7.8	. .	23.3	39.1	. .	. .	. .	. .	33 54.50	4.33	IV.	4	8.55	19 25.5	43.5	33 58.83	36 51 29.0
10	7	. .	. .	51.1	7.0	. .	. .	. .	38 6.82	4.35	V.	8	8.14	38 8.5	42.2	38 11.17	37 10 10.7
11	9	. .	. .	2.0	17.6	. .	. .	. .	40 17.46	4.32	V.	6	5.29	26 43.7	41.6	40 21.78	36 58 45.3
12	8	. .	. .	. .	27.2	. .	. .	. .	41 27.03	4.28	V.	2	1.45	5 47.1	41.3	41 31.31	36 37 48.4
13	7	. .	. .	15.9	. .	47.3	. .	. .	48 31.74	4.30	V.	9	13.33	45 50.4	39.2	48 36.04	37 17 49.6
14	7	. .	19.0	. .	50.6	. .	. .	. .	50 50.48	4.28	VI.	9	9.26	43 45.1	38.5	50 54.76	15 43.6
15	6.7	. .	. .	35.8	. .	. .	. .	. .	50 51.60	4.28	VI.	9	9.32	43 48.2	38.5	50 55.88	15 46.7
16	9	. .	. .	. .	. .	. .	. .	14.0	51 27.10	4.26	VII.	7	9.12	33 37.4	38.3	51 31.36	5 35.7
17	8	. .	. .	17.8	. .	. .	. .	. .	54 33.42	4.24	VI.	7	7.6	32 33.9	37.4	54 37.66	4 31.3
18	5	. .	40.7	56.2	. .	. .	. .	. .	18 56 12.11	4.25	IV.	9	10.41	44 23.4	36.9	18 56 16.36	16 20.3
19	7	. .	54.6	. .	26.0	. .	. .	. .	19 5 25.94	+ 4.19	IV.	8	12.14	−40 10.1	− 34.2	19 5 30.13	− 37 12 4.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Aug. 12,	18	− 7.78	− 0.008	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 55	Aug. 12,	17 34	30.07	80.0	74.0
		20 59	30.06	82.0	77.0

REMARKS.

(54) 48. Micrometer reading assumed as 13ʳ.00 instead of 12ʳ.00.

ZONE 56. AUGUST 12. A. $D_\circ$=−36° 31′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
20	8	. .	. .	. .	14.9	. .	. .	. .	19 9 14.73	+ 4.17	V.	8	7.18	−37 40.1	− 33.1	19 9 18.90	− 37 9 33.2
21	9	5.6	. .	37.2	. .	. .	. .	. .	25 52.91	4.06	IV.	8	3.48	35 53.9	28.2	25 56.97	7 42.1
22	8	58.7	14.8	. .	. .	. .	. .	. .	31 46.22	4.02	III.	9	7.59	42 0.7	26.5	31 50.24	37 13 47.2
23	8	. .	. .	. .	. .	26.9	. .	. .	32 11.26	4.00	VI.	6	7.27	27 43.2	26.4	32 15.26	36 59 29.6
24	7	. .	. .	. .	6.5	22.1	. .	. .	45 6.34	3.86	VI.	1	7.14	3 33.3	22.7	45 10.20	36 35 16.0
25	7	. .	43.8	59.8	. .	. .	. .	. .	48 15.29	3.89	IV.	7	8.16	33 9.6	21.9	48 19.18	37 4 51.5
26	8	. .	. .	. .	37.4	. .	. .	. .	51 37.23	3.87	V.	7	8.53	33 28.3	20.9	51 41.10	5 9.2
27	8	49.0	. .	. .	. .	. .	. .	. .	53 36.22	3.85	II.	6	9.37	28 49.2	20.4	53 40.07	37 0 29.6
28	9	. .	. .	7.1	. .	. .	. .	. .	55 22.43	3.82	IV.	3	12.16	16 7.0	19.9	55 26.25	36 47 46.9
29	9	. .	. .	. .	. .	7.8	. .	. .	55 52.14	3.82	VI.	5	7.4	23 29.5	19.7	55 55.96	55 9.2
30	9	. .	. .	14.8	. .	. .	. .	. .	19 59 30.26	3.81	V.	5	8.26	24 11.2	18.7	19 59 34.07	55 49.9
31	8	46.2	2.1	. .	. .	. .	. .	. .	20 6 33.34	3.74	III.	5	5.33	22 43.6	16.8	20 6 37.08	54 20.4
32	11	. .	. .	. .	6.4	. .	. .	. .	10 6.33	3.72	VI.	6	5.2	26 29.8	15.9	10 9.95	36 58 5.7
33	9	5.9	21.9	. .	. .	. .	. .	. .	11 52.24	3.71	III.	7	8.7	33 5.0	15.4	11 55.95	37 4 40.4
34	10	. .	57.8	13.5	29.4	. .	. .	. .	13 29.22	3.72	V.	8	8.20	38 11.6	15.0	13 32.94	37 9 46.6
35	8.9	. .	16.6	32.2	47.8	. .	. .	. .	18 47.58	3.62	V.	2	9.0	9 27.4	13.6	18 51.20	36 41 1.0
36	9	. .	31.9	47.8	. .	. .	. .	. .	23 3.02	3.56	IV.	3	4.47	12 19.6	12.4	23 6.58	43 52.0
37	10	. .	. .	. .	23.6	. .	. .	. .	29 23.43	3.55	V.	4	12.7	21 2.6	10.8	29 26.98	52 33.4
38	7	. .	. .	. .	. .	28.3	. .	. .	30 12.56	3.52	V.	1	3.42	1 46.1	10.6	30 16.08	33 16.7
39	8	. .	10.0	. .	. .	. .	. .	. .	36 41.05	3.47	III.	2	6.14	8 3.3	9.0	36 44.52	36 39 32.3
40	9	. .	6.8	22.6	. .	. .	. .	. .	43 38.19	3.45	IV.	7	7.43	32 52.9	7.3	43 41.64	37 4 20.2
41	9	. .	. .	. .	. .	21.3	36.7	. .	44 5.64	3.42	VII.	3	7.55	13 54.3	7.2	44 9.06	36 45 21.5
42	7	. .	56.1	12.1	27.6	. .	. .	. .	50 27.32	3.36	V.	2	11.55	10 56.0	5.7	50 30.68	42 21.7
43	8	. .	. .	. .	22.5	. .	53.4	. .	51 22.33	3.35	VII.	2	3.51	6 50.4	5.4	51 25.68	36 38 15.8
44	8	. .	. .	. .	. .	. .	. .	5.5	52 18.66	3.27	VII.	8	8.9	38 5.5	5.2	52 21.93	37 9 30.7
45	10	. .	59.8	. .	. .	. .	. .	. .	56 31.00	3.28	III.	4	9.36	19 46.2	4.2	56 34.28	36 51 10.4
46	8.7	. .	21.5	37.3	. .	. .	. .	. .	20 59 53.11	+ 3.34	IV.	10	5.36	−46 51.1	− 3.4	20 59 56.45	− 37 18 14.5

ZONE 57. AUGUST 13. A. $D_\circ$=−24° 1′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	36.3	49.8	. .	. .	. .	18 15 49.76	+ 3.53	IV.	6	7.58	−27 58.7	− 44.0	18 15 53.29	− 24 29 42.7
2	8	. .	. .	. .	49.0	2.2	. .	. .	18 48.70	3.54	V.	8	6.32	37 14.7	43.2	18 52.24	38 57.9
3	8	. .	. .	. .	1.2	14.8	. .	. .	20 1.08	3.53	V.	7	4.15	31 6.4	43.0	20 4.61	32 49.4
4	8	. .	. .	. .	10.5	24.2	. .	. .	21 10.38	3.49	V.	2	5.43	7 50.6	42.7	21 13.87	9 33.3
5	8	. .	. .	37.5	51.2	. .	. .	. .	22 51.20	3.54	IV.	10	8.18	48 8.9	42.3	22 54.74	49 51.2
6	5	. .	. .	. .	. .	14.0	28.0	. .	24 0.53	3.48	VI.	3	1.31	11 13.0	42.0	24 4.01	12 55.0
7	6	. .	. .	. .	. .	32.5	46.0	0.0	26 18.79	3.48	VII.	4	6.40	18 17.9	41.5	25 22.27	19 59.4
8	8	. .	. .	. .	53.0	6.5	. .	. .	27 52.83	3.49	V.	7	5.1	31 29.6	41.1	26 56.32	33 10.7
9	10	. .	. .	. .	7.5	21.5	. .	. .	28 7.59	3.49	V.	7	10.45	34 23.3	41.1	28 11.08	36 4.4
10	11	. .	. .	. .	53.5	. .	. .	. .	30 53.35	3.48	IV.	7	9.11	33 35.9	40.4	30 56.83	35 16.3
11	6	54.0	8.0	. .	. .	. .	. .	. .	32 35.35	3.46	II.	6	7.22	27 40.3	40.0	32 38.81	29 20.3
12	10	. .	. .	. .	. .	11.5	24.5	. .	32 57.53	3.44	VI.	2	6.52	8 25.3	39.9	33 0.97	10 5.2
13	7	. .	. .	. .	. .	. .	. .	26.5	33 45.12	3.43	VII.	1	9.50	4 55.6	39.8	33 48.55	6 35.4
14	9	. .	30.5	44.5	. .	. .	. .	. .	35 57.96	3.45	III.	5	9.9	24 33.0	39.2	36 1.41	26 12.2
15	7	. .	50.3	4.0	. .	. .	. .	. .	38 17.62	3.44	III.	6	6.3	27 0.6	38.7	38 21.06	28 39.3
16	11	. .	. .	. .	. .	. .	14.0	. .	38 46.77	3.43	VI.	6	8.19	28 9.1	38.6	38 50.20	29 47.7
17	8	. .	. .	. .	16.0	29.5	. .	. .	40 15.86	3.46	V.	9	3.38	40 46.2	38.2	40 19.32	42 24.4
18	7	. .	. .	. .	. .	. .	23.5	37.3	18 40 56.30	+ 3.46	VII.	10	5.30	−46 43.8	− 38.1	18 40 59.76	− 24 48 21.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Aug. 13,	18	− 7.55	− 0.002	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1846.	h.	m.	in.	°	°
Zone 57	Aug. 13,	18	15	29.95	82.0	77.0
	13,	21	41	29.95	80.5	73.0

REMARKS.

(56) 22. Micrometer reading assumed as 5ʳ.59 instead of 7ʳ.59.
(57) 6. Micrometer reading assumed as 2ʳ.31 instead of 1ʳ.31.
(57) 7. Minutes assumed as 25 instead of 26.
(57) 8. Minutes assumed as 26 instead of 27.

ZONE 57. AUGUST 13. A. $D_0 = -24° 1' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
19	8	. .	. .	. .	. .	34.0	47.5	1.5	18 42 20.36	+ 3.43	VII.	7	12.	−35 0.9	− 37.8	18 42 23.79	− 24 36 38.7
20	8	. .	. .	. .	. .	. .	41.5	56.0	44 14.50	3.39	VII.	2	7.3	8 30.7	37.4	44 17.89	10 8.1
21	7	. .	. .	14.5	28.5	. .	. .	. .	47 28.34	3.43	IV.	10	6.10	47 4.3	36.6	47 31.77	48 40.9
22	8	. .	. .	. .	. .	. .	57.5	. .	53 30.26	3.38	VI.	7	7.35	32 47.3	35.2	53 33.64	34 22.5
23	10	. .	. .	. .	25.5	. .	. .	. .	56 25.35	3.36	IV.	6	6.47	27 22.8	34.5	56 28.71	28 57.3
24	9	. .	13.0	27.0	. .	. .	. .	. .	57 40.43	3.35	III.	5	6.43	23 19.4	34.2	57 43.78	24 53.6
25	9	. .	. .	. .	20.0	. .	. .	. .	58 19.85	3.34	IV.	4	7.55	18 56.1	34.1	58 23.19	20 30.2
26	8	. .	. .	. .	34.5	48.0	. .	. .	18 59 34.35	3.36	V.	8	6.0	36 58.5	33.8	18 59 37.71	38 32.3
27	9	. .	. .	. .	. .	54.0	7.5	. .	19 0 40.29	3.34	VI.	5	5.58	22 56.5	33.6	19 0 43.63	24 30.1
28	7	. .	. .	. .	. .	2.5	16.0	. .	1 48.79	3.33	VI.	5	7.25	23 40.4	33.3	1 52.12	25 13.7
29	9	. .	. .	. .	15.0	28.5	. .	. .	3 14.83	3.34	V.	7	5.39	31 48.8	33.0	3 18.17	33 21.8
30	5	40.0	54.0	7.8	. .	. .	. .	. .	6 21.33	3.32	III.	5	8.11	24 3 8	32.3	6 24.65	25 36.1
31	9	. .	. .	. .	. .	59.0	12.5	27.0	6 45.45	3.30	VII.	4	7.42	18 49.2	32.2	6 48.75	20 21.4
32	9	. .	. .	. .	. .	25.0	38.0	. .	8 11.03	3.29	VI.	2	8.53	9 26.4	31.9	8 14.32	10 58.3
33	8	. .	. .	. .	. .	. .	2.5	16.8	9 35.39	3.28	VII.	2	4.48	7 22.5	31.5	9 38.67	8 54.0
34	6	17.0	31.0	. .	. .	. .	. .	. .	11 58.34	3.29	II.	6	5.36	26 46.8	31.0	12 1.63	28 17.8
35	8	. .	. .	28.0	41.5	55.0	. .	. .	12 41.48	3.32	V.	9	2.19	40 6.3	30.8	12 44.80	41 37.1
36	9	. .	. .	0.5	14.0	. .	. .	. .	14 13.96	3.28	IV.	6	8.39	28 19.4	30.5	14 17.24	29 49.9
37	4	. .	37.5	51.5	5.2	. .	. .	. .	16 5.15	3.30	IV.	10	3.57	45 57.2	30.1	16 8.45	47 27.3
38	8	. .	. .	. .	. .	. .	. .	53.0	16 12.03	3.30	VII.	9	2.48	40 20.7	30.1	16 15.33	41 50.8
39	8	. .	. .	. .	. .	2.8	16.3	. .	17 49.09	3.25	VI.	4	7.20	18 38.3	29.7	17 52.34	20 8.0
40	10	. .	. .	. .	. .	. .	15.6	29.7	18 48.44	3.25	VII.	4	6.8	18 1.8	29.5	18 51.69	19 31.3
41	8	. .	. .	. .	22.5	36.5	. .	. .	20 22.58	3.25	V.	6	10.32	29 16.4	29.1	20 25.83	30 45.5
42	6	. .	. .	33.3	47.0	. .	. .	. .	21 46.76	3.22	IV.	3	7.51	13 54.7	28.8	21 49.98	15 23.5
43	7	. .	. .	. .	. .	. .	30.3	44.3	22 3.10	3.24	VII.	5	5.10	22 32.1	28.8	22 6.34	24 0.9
44	11	. .	. .	45.0	58.8	. .	. .	. .	23 58.65	3.24	IV.	7	8.5	33 2.6	28.4	24 1.89	34 31.0
45	11	. .	. .	. .	. .	59.0	12.5	. .	24 45.29	3.24	VI.	7	9.19	33 39.8	28.2	24 48.53	35 8.0
46	9	. .	. .	. .	. .	. .	5.5	18.5	25 37.90	3.25	VII.	10	6.42	47 20.1	28.0	25 41.15	48 48.1
47	9	. .	. .	. .	. .	. .	13.5	27.5	26 46.38	3.25	VII.	9	2.53	40 23.2	27.7	26 49.63	41 50.9
48	9	42.8	56.9	. .	. .	. .	. .	. .	29 24.18	3.20	II.	5	9.49	24 53.1	27.1	29 27.38	26 20.2
49	9	. .	40.0	53.5	. .	. .	. .	. .	30 7.25	3.20	III.	6	10.16	29 8.3	27.00	30 10.45	30 35.3
50	9	. .	. .	. .	. .	43.0	56.8	10.7	30 29.49	3.20	VII.	6	6.2	26 59.8	26.9	30 32.69	28 26.7
51	9	. .	. .	. .	. .	. .	. .	22.0	31 41.00	3.21	VII.	8	9.	38 29.1	26.6	31 44.21	39 55.7
52	6	. .	. .	15.5	29.6	. .	. .	. .	33 29.35	3.21	IV.	9	5.55	41 55.4	26.2	33 32.56	43 21.6
53	10	. .	. .	. .	. .	. .	56.5	10.0	35 29.14	3.20	VII.	9	9.55	43 56.3	25.8	35 32.34	45 22.1
54	8	. .	. .	49.8	3.0	. .	. .	. .	38 2.94	3.13	IV.	1	8.21	4 11.0	25.2	38 6.07	5 36.2
55	11	. .	29.0	. .	. .	. .	. .	. .	39 56.42	3.15	II.	6	11.32	29 46.6	24.8	39 59.57	31 11.4
56	8	. .	25.0	39.0	. .	. .	. .	. .	40 52.21	3.12	III.	1	7.48	3 54.3	24.6	40 55.33	5 18.9
57	8	. .	30.8	44.5	58.2	. .	. .	. .	42 58.26	3.17	IV.	10	7.	47 29.6	24.2	43 1.43	48 53.8
58	5	34.0	47.0	. .	. .	. .	. .	. .	45 14.75	3.11	II.	4	3.51	16 52.8	23.7	45 17.86	18 16.5
59	8	. .	39.4	53.5	. .	. .	. .	. .	46 6.80	3.11	III.	4	2.34	16 14.0	23.5	46 9.91	17 37.5
60	8	15.2	29.2	. .	. .	. .	. .	. .	47 56.69	3.14	II.	9	6.6	42 0.8	23.1	47 59.83	43 23.9
61	8	. .	. .	. .	53.5	7.0	. .	. .	48 53.37	3.14	V.	10	8.24	48 11.9	22.9	48 56.51	49 34.8
62	8	. .	. .	. .	. .	31.0	44.8	58.3	51 17.33	3.09	VII.	4	10.3	20 0.4	22.4	51 20.42	21 22.8
63	9	. .	31.0	45.0	. .	. .	. .	. .	54 58.68	3.11	III.	9	10.58	44 28.4	21.6	55 1.79	45 50.0
64	8	. .	. .	. .	. .	. .	52.2	6.0	19 55 24.90	3.08	VII.	5	5.17	22 35.6	21.5	19 55 27.98	23 57.1
65	9	. .	. .	. .	. .	. .	. .	. .	20 12	3.00	VI.	9	5.15	41 35.1	18.1	20 12 3.00	42 53.2
66	8	. .	27.0	41.0	. .	. .	. .	. .	14 54.59	2.98	III.	8	6.10	37 3.6	17.6	14 57.57	38 21.2
67	8	. .	. .	. .	17.5	. .	. .	. .	20 18 17.35	+ 2.97	IV.	10	9.59	−48 59.9	− 16.9	20 18 20.32	− 24 50 16.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 57. AUGUST 13. A. $D_0 = -24° 1' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
68	7	. .	. .	17.5	31.5	. .	. .	. .	20 19 31.28	+ 2.95	IV.	8	7.13	−37 35.4	− 16.7	20 19 34.23	− 24 38 52.1
69	6	. .	. .	. .	. .	. .	14.5	28.4	19 47.27	2.94	VII.	6	5.56	26 56.7	16.6	19 50.21	28 13.3
70	9	. .	. .	59.0	12.5	26.5	. .	. .	22 12.44	2.91	V.	2	2.30	6 13.2	16.1	22 15.35	7 29.3
71	9	. .	. .	. .	. .	45.5	59.2	13.0	23 31.88	2.92	VII.	6	5.31	26 44.1	15.9	23 34.80	28 0.0
72	10	58.5	12.2	. .	. .	. .	. .	. .	26 39.67	2.90	II.	5	6.31	23 13.2	15.3	26 42.57	24 28.5
73	9	. .	. .	. .	. .	51.5	5.2	. .	28 37.89	2.92	VI.	9	4.43	41 18.9	14.9	28 40.81	42 33.8
74	8	24.0	38.0	. .	. .	. .	. .	. .	30 5.41	2.90	II.	8	1.20	34 37.0	14.6	30 7.31	35 51.6
75	6	44.0	58.2	. .	. .	. .	. .	. .	32 25.53	2.89	II.	8	5.16	36 36.2	14.2	31 28.42	37 50.4
76	5	. .	. .	. .	. .	. .	. .	54.0	31 12.76	2.88	VII.	4	5.34	17 44.6	14.4	31 15.64	18 59.0
77	8	44.8	58.5	. .	. .	. .	. .	. .	36 25.97	2.85	II.	5	7.14	23 34.9	13.4	36 28.82	24 48.3
78	9	. .	53.5	7.0	21.0	. .	. .	. .	37 20.71	2.84	IV.	4	7.57	18 57.2	13.3	37 23.55	20 10.5
79	7	. .	. .	. .	. .	. .	. .	6.5	37 25.24	2.83	VII.	3	9.12	14 35.3	13.3	37 28.07	15 48.6
80	9	58.0	12.0	. .	. .	. .	. .	. .	40 39.36	2.83	II.	6	8.48	28 23.8	12.7	40 42.19	29 36.5
81	9	. .	. .	. .	. .	. .	7.0	20.8	40 39.72	2.83	VII.	6	7.5	27 31.6	12.6	40 42.55	28 44.2
82	9	. .	. .	12.5	26.2	. .	. .	. .	43 26.15	2.83	IV.	9	5.32	41 43.8	12.2	43 28.98	42 56.0
83	4	. .	. .	. .	. .	23.8	37.3	51.3	44 10.09	2.80	VII.	4	8.25	19 10.9	12.0	44 12.89	20 22.9
84	9	47.2	1.0	. .	. .	. .	. .	. .	46 28.47	2.80	II.	6	11.11	29 35.9	11.6	47 31.27	30 47.5
85	8	0.1	14.0	28.0	. .	. .	. .	. .	48 27.68	2.77	III.	5	7.44	23 50.1	11.2	48 30.45	25 1.3
86	9	13.0	27.0	. .	. .	. .	. .	. .	50 54.34	2.77	II.	6	4.14	26 5.4	10.8	50 57.11	27 16.2
87	6	. .	27.0	41.0	. .	. .	. .	. .	52 54.41	2.75	III.	5	3.36	21 44.9	10.5	52 57.16	22 55.4
88	7	. .	. .	31.0	44.6	. .	. .	. .	20 59 44.64	2.74	IV.	10	6.23	47 10.9	9.3	20 59 47.38	48 20.2
89	6	. .	. .	. .	. .	. .	54.0	8.1	21 1 26.81	2.70	VII.	3	5.22	12 39.1	9.0	21 0 29.51	13 48.1
90	10	. .	. .	. .	. .	57.5	11.5	25.0	1 43.96	2.71	VII.	5	2.13	21 2.7	9.0	1 46.67	22 11.7
91	7	. .	. .	. .	. .	30.2	43.7	57.2	3 16.41	2.72	VII.	9	7.33	42 44.6	8.7	3 19.13	43 53.3
92	11	. .	. .	. .	. .	0.0	13.5	. .	5 46.28	2.67	VI.	2	5.36	7 46.9	8.3	5 48.95	8 55.2
93	9	32.0	46.0	. .	. .	. .	. .	. .	8 13.38	2.68	II.	7	3.34	30 45.6	7.9	8 16.06	31 53.5
94	8	. .	. .	. .	49.5	3.0	16.8	. .	8 49.41	2.68	VI.	8	7.54	37 56.0	7.8	8 52.09	39 3.8
95	8	. .	. .	. .	. .	15.5	29.0	42.8	10 1.74	2.65	VII.	5	9.48	24 52.4	7.6	10 4.39	26 0.0
96	8	. .	. .	. .	. .	. .	. .	30.0	10 48.81	2.65	VII.	5	5.46	22 50.2	7.5	10 51.46	23 57.7
97	7	. .	. .	20.0	33.5	. .	. .	. .	13 33.27	2.61	IV.	1	3.53	1 55.7	7.1	13 35.88	3 2.8
98	5	52.5	6.7	20.5	. .	. .	. .	. .	15 33.86	2.61	III.	3	10.13	15 6.4	6.8	15 36.47	16 13.2
99	8	. .	22 5	36.2	. .	. .	. .	. .	16 49.64	2.61	III.	3	3.39	11 47.5	6.6	16 52.25	12 54.1
100	4	. .	. .	. .	. .	21.0	34.7	48.4	17 7.35	2.63	VII.	6	5.25	26 41.1	6.6	17 9.98	27 47.7
101	8	. .	. .	. .	. .	18.8	32.2	46.2	29 5.03	2.55	VII.	4	11.39	20 48.9	4.8	29 7.58	21 53.7
102	7	. .	37.3	51.2	. .	. .	. .	. .	32 4.80	2.55	III.	7	9.40	33 50.5	4.4	32 7.35	34 54.9
103	11	. .	. .	. .	. .	. .	45.0	59.0	32 17.82	2.54	VII.	6	7.55	27 56.8	4.3	32 20.36	29 1.1
104	6	. .	. .	. .	. .	. .	11.5	25.0	34 44.15	2.55	VII.	10	8.28	48 13.6	4.0	34 46.70	49 17.6
105	9	14.0	27.8	. .	. .	. .	. .	. .	38 55.19	2.50	II.	4	11.13	20 36.0	3.4	38 57.69	21 39.4
106	9	. .	. .	. .	21.0	34.0	. .	. .	39 20.58	2.51	V.	6	7.5	27 31.9	3.4	39 23.09	28 35.3
107	9	. .	. .	. .	21.5	35.0	48.7	. .	40 21.38	2.49	VI.	4	8.9	19 3.0	3.2	40 23.87	20 6.2
108	9	. .	. .	. .	. .	44.5	58.0	. .	21 41 30.78	+ 2.51	VI.	7	2.51	−30 23.9	− 3.1	21 41 33.29	− 24 31 27.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(57) 75. Minutes assumed as 31 instead of 32.
(57) 84. Minutes assumed as 47 instead of 46.
(57) 85. Transits over T.'s II–IV assumed as recorded over T.'s I–III.
(57) 89. Minutes assumed as 0 instead of 1.

Zone 58. August 18. A. $D_{\circ}=-28^{\circ}\ (3)'$.

No.	Mag.	SECONDS OF TRANSIT.							T.		a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.										
									h. m. s.		s.			r.	′ ″	″	h. m. s.	° ′ ″
1	8	6.5	21.0	. .	. .	. .	. .	. .	18 45 49.60	+	2.67	II.	8	12.	−40 0.6	. .	18 45 52.27	
2	6	. .	. .	16.0	30.0	. .	. .	. .	46 29.87		2.62	IV.	3	10.21	15 10.2	. .	46 32.49	
3	7	. .	. .	23.6	37.8	. .	. .	. .	47 37.56		2.62	IV.	3	8.57	14 27.8	. .	47 40.18	
4	11	. .	. .	. .	. .	. .	33.5	48.0	48 5.43		2.64	VII.	8	5.40	36 48.4	. .	48 8.07	
5	6	. .	. .	. .	. .	51.0	5.5	. .	49 37.07		2.64	VI.	9	7.19	42 38.2	. .	49 39.71	
6	5	. .	. .	. .	. .	. .	. .	14.3	50 31.51		2.60	VII.	2	10.29	10 14.2	. .	50 34.11	
7	10	. .	. .	. .	. .	39.0	. .	. .	52 24.80		2.61	V.	6	7.12	27 35.4	. .	52 27.41	
8	7	. .	. .	. .	. .	. .	30.0	44.5	53 1.94		2.63	VII.	10	3.23	45 40.2	. .	53 4.57	
9	6	5.0	19.5	. .	. .	. .	. .	. .	55 47.68		2.57	II.	3	8.35	14 16.5	. .	55 50.25	
10	8	. .	. .	49.0	3.2	. .	. .	. .	57 3.16		2.61	IV.	10	3.12	45 35.0	. .	57 5.77	
11	4	. .	. .	. .	. .	15.0	29.2	43.0	58 0.82		2.60	VII.	10	3.55	45 56.3	. .	18 58 3.42	
12	8	. .	. .	. .	. .	12.5	26.5	40.5	18 59 58.24		2.59	VII.	9	3.38	40 46.3	. .	19 0 0.83	
13	7	. .	. .	. .	. .	. .	57.2	11.3	19 2 28.93		2.57	VII.	8	11.57	39 55.6	. .	2 31.50	
14	8	. .	. .	. .	. .	. .	6.5	20.5	2 38.16		2.56	VII.	8	6.59	37 28.3	. .	2 40.72	
15	7	51.5	5.5	. .	. .	. .	. .	. .	19 5 34.04	+	2.53	II.	5	3.35	−21 44.2	. .	19 5 36.57	

Zone 59. August 18. A. $D_{\circ}=-29^{\circ}\ (3–5)'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.		a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	24.5	. .	. .	. .	. .	. .	19 31 52.99	+	2.57	II.	6	7.23	−27 40.9	. .	19 31 55.56	
2	8	. .	. .	17.8	32.8	. .	. .	. .	32 32.41		2.57	IV.	7	11.33	34 48.0	. .	32 34.98	
3	9	4.0	19.0	. .	. .	. .	. .	. .	35 47.41		2.54	II.	5	8.44	24 20.2	. .	35 49.95	
4	7	. .	. .	21.0	35.0	. .	. .	. .	37 34.91		2.51	IV.	2	5.54	7 55.5	. .	37 37.42	
5	5	. .	. .	. .	27.0	41.2	. .	. .	38 26.83		2.52	V.	6	7.9	27 34.0	. .	38 29.35	
6	6	. .	. .	. .	. .	30.0	44.3	. .	39 15.64		2.50	VI.	3	4.4	11 59.4	. .	39 18.14	
7	11	. .	. .	46.8	1.5	. .	. .	. .	43 1.22		2.48	IV.	6	8.59	28 29.6	. .	43 3.70	
8	5	24.0	38.6	. .	. .	. .	. .	. .	46 7.23		2.47	II.	5	10.41	25 19.4	. .	46 9.70	
9	6	. .	. .	. .	. .	35.5	. .	. .	46 21.13		2.48	V.	7	6.21	32 10.3	. .	46 23.61	
10	8	. .	. .	. .	. .	33.0	47.0	. .	48 18.48		2.45	VI.	5	10.	24 58.7	. .	48 20.93	
11	7	. .	. .	. .	50.8	5.0	. .	. .	49 50.59		2.42	VI.	3	2.45	11 19.5	. .	49 53.01	
12	9	. .	29.5	44.5	. .	. .	. .	. .	51 58.26		2.42	III.	4	5.44	17 49.7	. .	52 0.68	
13	5	14.5	29.2	44.0	. .	. .	. .	. .	55 57.94		2.40	III.	6	3.53	25 54.9	. .	56 0.34	
14	7	. .	. .	42.8	57.0	. .	. .	. .	56 56.98		2.40	IV.	7	2.46	30 21.7	. .	56 59.38	
15	8	. .	36.7	51.5	. .	. .	. .	. .	19 59 5.33		2.36	III.	3	11.9	15 34.3	. .	19 59 7.69	
16	11	. .	. .	48.5	2.8	. .	. .	. .	20 0 2.68		2.37	IV.	5	8.14	24 5.3	. .	20 0 5.05	
17	11	. .	. .	. .	. .	. .	53.5	8.0	0 24.82		2.37	VII.	5	9.43	24 49.8	. .	0 27.19	
18	8	. .	8.0	22.5	. .	. .	. .	. .	2 36.51		2.35	III.	4	6.31	18 13.4	. .	2 38.86	
19	9	. .	. .	. .	3.0	. .	. .	. .	5 2.84		2.35	IV.	8	5.31	36 44.4	. .	5 5.19	
20	9	. .	. .	. .	. .	5.5	19.5	34.5	5 51.06		2.32	VII.	4	5.54	17 54.4	. .	5 53.38	
21	9	. .	. .	. .	. .	33.5	47.5	. .	7 18.99		2.32	VI.	6	8.50	28 24.9	. .	7 21.31	
22	6	. .	. .	. .	. .	. .	46.0	59.5	8 16.92		2.35	VII.	10	7.52	47 26.1	. .	8 19.27	
23	6	. .	29.0	. .	. .	. .	. .	. .	10 57.53		2.31	II.	7	6.20	32 9.7	. .	10 59.84	
24	6	. .	. .	. .	10.5	24.8	39.0	53.0	11 10.26		2.31	VII.	8	4.6	36 1.0	. .	11 12.57	
25	7	. .	. .	. .	. .	54.0	8.7	23.0	13 39.85		2.28	VII.	7	9.42	33 51.5	. .	13 42.13	
26	4	. .	. .	. .	27.0	41.2	55.3	. .	15 26.78		2.27	VI.	6	11.11	29 36.1	. .	15 29.05	
27	5	. .	. .	3.3	17.8	. .	. .	. .	17 17.63		2.25	IV.	6	11.21	29 41.3	. .	17 19.88	
28	6	. .	. .	. .	14.5	29.0	. .	. .	18 14.45		2.23	V.	3	9.8	14 33.2	. .	18 16.68	
29	7	45.5	0.0	14.4	. .	. .	. .	. .	20 28.69		2.23	III.	6	6.57	27 27.9	. .	20 30.92	
30	5	. .	13.5	28.2	. .	. .	. .	. .	20 21 42.30	+	2.23	III.	7	7.50	−32 55.3	. .	20 21 44.53	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Aug. 18,	18	− 8.62	− 0.009	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 58	Aug. 18, 18 45	30.11	75.7	70.0
	18, 19 0	30.13	74.1	68.4
Zone 59	18, 20 0	30.13	74.1	68.0
	18, 21 44	30.09	75.0	64.0

REMARKS.

(58) Instrument not clamped properly.
(59) Instrument not clamped properly.
(59) 22. Micrometer reading assumed as $6^{r}.52$ instead of $7^{r}.52$.

ZONE 59. AUGUST 18. A. $D_0 = -29°$ (3–5)′—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
31	6	. .	. .	55.5	9.8	. .	. .	. .	20 23 9.52	+ 2.18	IV.	1	5.15	− 2 36.3	. .	20 23 11.70	
32	4	. .	. .	. .	. .	. .	58.8	13.0	23 29.89	2.17	VII.	1	4.49	2 22.7	. .	23 32.06	
33	5	. .	. .	. .	. .	. .	. .	17.0	24 36.02	2.23	VII.	10	0.37	44 16.5	. .	24 38.25	
34	7	. .	36.0	50.9	. .	. .	. .	. .	28 4.62	2.16	III.	2	9.56	9 57.7	. .	28 6.78	
35	8	. .	. .	. .	. .	. .	5.0	19.5	38 36.29	2.17	VII.	4	3.50	16 51.7	. .	28 38.46	
36	7	. .	29.4	44.2	. .	. .	. .	. .	30 58.10	2.15	III.	4	10.10	20 4.1	. .	31 0.25	
37	10	. .	39.0	53.5	. .	. .	. .	. .	32 7.58	2.15	III.	5	7.11	23 33.4	. .	32 9.73	
38	5	. .	. .	. .	. .	51.5	5.0	19.8	32 36.64	2.11	VII.	3	8.21	13 38.8	. .	32 38.75	
39	5	. .	. .	. .	. .	. .	21.8	36.3	33 53.08	2.11	VII.	3	8.59	14 28.2	. .	33 55.19	
40	9	. .	. .	. .	52.5	6.5	21.0	. .	35 52.28	2.13	VI.	7	5.16	31 37.3	. .	35 54.41	
41	8	. .	. .	13.0	27.0	. .	. .	. .	37 26.99	2.10	IV.	4	5.51	17 53.2	. .	37 29.09	
42	9	59.0	13.7	. .	. .	. .	. .	. .	39 42.28	2.09	II.	5	10.42	25 19.9	. .	39 44.37	
43	8	. .	. .	. .	. .	7.5	21.5	36.0	39 52.94	2.10	VII.	7	4.45	31 21.4	. .	39 55.04	
44	7	. .	. .	. .	24.0	37.5	. .	. .	41 23.48	2.09	V.	7	3.54	30 25.8	. .	41 25.57	
45	9	. .	. .	1.0	15.5	. .	. .	. .	43 15.28	2.07	IV.	5	8.3	23 59.7	. .	43 17.35	
46	10	. .	. .	. .	. .	. .	. .	44.0	45 0.56	2.03	VII.	2	5.45	7 50.6	. .	45 2.59	
47	9	. .	. .	. .	. .	. .	44.0	58.5	46 15.31	2.04	VII.	5	1.43	20 47.3	. .	46 17.35	
48	10	5.5	20.0	. .	. .	. .	. .	. .	50 48.72	2.00	II.	6	10.32	29 16.4	. .	50 50.72	
49	8	. .	. .	24.0	38.0	. .	. .	. .	51 37.99	1.99	IV.	4	6.37	18 16.5	. .	51 39.98	
50	5	. .	23.8	38.4	. .	. .	. .	. .	53 52.62	1.99	III.	8	8.22	38 10.7	. .	53 54.61	
51	10	. .	. .	. .	. .	. .	9.5	23.5	56 40.62	1.97	VII.	8	9.42	38 50.8	. .	56 42.59	
52	9	29.5	44.8	. .	. .	. .	. .	. .	59 13.13	1.96	II.	7	4.18	31 8.0	. .	20 59 15.09	
53	11	. .	. .	50.0	5.0	. .	. .	. .	20 0 4.63	1.95	IV.	8	5.31	36 44.4	. .	21 0 6.58	
54	5	. .	. .	15.7	30.0	. .	. .	. .	21 1 29.71	1.91	IV.	1	3.27	1 41.7	. .	1 31.62	
55	8	. .	. .	. .	. .	. .	44.0	58.5	2 15.33	1.93	IV.	5	10.37	25 17.6	. .	2 17.26	
56	7	. .	. .	9.0	23.0	. .	. .	. .	4 23.00	1.90	IV.	4	9.	19 28.8	. .	4 24.90	
57	10	. .	. .	41.0	55.5	. .	. .	. .	5 55.39	1.90	IV.	8	8.54	38 27.0	. .	5 57.29	
58	10	. .	. .	. .	59.0	. .	. .	. .	6 58.84	1.87	IV.	3	6.	12 58.2	. .	7 0.71	
59	7	. .	. .	. .	. .	. .	. .	13.0	7 31.52	1.85	VII.	1	7.42	3 50.1	. .	7 33.37	
60	6	. .	. .	. .	9.5	23.6	. .	. .	9 9.25	1.85	V.	3	9.57	14 57.9	. .	9 11.10	
61	4	. .	. .	. .	. .	14.3	28.5	. .	9 59.89	1.85	VI.	4	8.33	19 14.9	. .	10 1.74	
62	6	. .	23.0	37.7	. .	. .	. .	. .	12 51.88	1.85	III.	8	9.32	43 45.7	. .	12 53.73	
63	9	35.0	50.0	. .	. .	. .	. .	. .	14 18.56	1.84	II.	8	8.20	38 9.6	. .	14 20.40	
64	8	. .	. .	. .	. .	. .	. .	1.5	14 18.43	1.84	VII.	8	8.12	38 5.3	. .	14 20.27	
65	9	. .	. .	. .	. .	. .	. .	0.5	15 17.52	1.84	VII.	9	11.4	44 31.8	. .	15 19.36	
66	7	. .	19.5	34.0	. .	. .	. .	. .	17 48.23	1.81	III.	7	12.	35 1.6	. .	17 50.04	
67	11	. .	. .	. .	. .	56.5	. .	. .	18 42.05	1.77	V.	3	3.5	11 29.8	. .	18 43.82	
68	9	. .	9.5	23.5	. .	. .	. .	. .	20 37.82	1.77	III.	5	5.11	22 32.8	. .	20 39.59	
69	8	. .	. .	16.5	30.8	. .	. .	. .	21 30.69	1.77	IV.	6	2.44	25 20.1	. .	21 32.46	
70	9	. .	. .	. .	. .	23.0	37.5	52.0	22 8.75	1.77	VII.	5	7.52	18 54.0	. .	22 10.52	
71	11	. .	. .	. .	. .	. .	1.0	15.5	23 32.32	1.75	VII.	5	6.39	23 16.9	. .	23 34.07	
72	6	5.0	19.5	. .	. .	. .	. .	. .	25 48.21	1.74	II.	6	9.45	28 52.6	. .	25 49.95	
73	9	28.0	43.0	. .	. .	. .	. .	. .	28 11.33	1.71	II.	4	4.9	17 1.5	. .	28 13.04	
74	9	. .	. .	. .	. .	. .	18.5	33.0	31 49.77	1.67	VII.	3	1.39	10 45.9	. .	31 51.44	
75	9	. .	. .	. .	. .	40.0	. .	. .	35 25.51	1.65	V.	2	2.18	6 6.4	. .	35 27.16	
76	6	. .	. .	. .	. .	0.2	14.2	. .	36 45.69	1.66	VI.	7	1.27	20 39.5	. .	36 47.35	
77	9	. .	. .	. .	. .	34.0	48.5	3.5	41 19.86	1.60	VII.	2	10.28	10 13.5	. .	41 21.46	
78	8	14.0	28.5	. .	. .	. .	. .	. .	43 57.24	1.61	II.	7	5.24	31 41.4	. .	43 58.85	
79	8	. .	. .	. .	13.0	27.0	. .	. .	44 12.72	1.60	V.	5	7.54	23 55.1	. .	44 14.32	
80	6	. .	. .	. .	. .	. .	26.0	40.3	21 44 57.20	+ 1.57	VII.	4	5.53	−17 53.8	. .	21 44 58.77	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM. At.	Ex.
1846. h. m.	in.	°	°

REMARKS.

(59) 33. Transit over T. VII assumed as 19^{s} instead of 17^{s}.
(59) 38. Micrometer reading assumed as $7^{r}.21$ instead of $3^{r}.21$.
(59) 44. Micrometer reading assumed as $2^{r}.54$ instead of $3^{r}.54$.
(59) 59. Transit over T. VII assumed as $15^{s}.0$ instead of $13^{s}.0$.
(59) 62. Hor. thread assumed as 9 instead of 8.
(59) 70. Hor. thread assumed as 4 instead of 5.
(59) 76. Hor. thread assumed as 5 instead of 7.

ZONE 60. AUGUST 29. A. $D_0 = -39° 4' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	5	. .	. .	. .	. .	. .	10.0	26.5	18 59 37.89	+ 4.77	VII.	6	8.56	−28 59.3	− 43.23	18 59 42.66	− 39 34 22.5
2	8	. .	. .	20.2	36.4	. .	. .	. .	19 1 36.15	4.75	IV.	5	10.14	25 5.9	42.18	19 1 40.90	30 28.1
3	8	. .	6.2	22.5	39.0	. .	. .	. .	3 38.50	4.71	IV.	3	8.34	14 13.4	41.07	3 43.21	19 34.5
4	8	. .	48.2	4.8	. .	. .	. .	. .	5 20.54	4.73	III.	5	2.40	21 15.6	40.18	5 25.27	26 35.8
5	7	. .	46.5	3.0	19.5	. .	. .	. .	8 19.20	4.73	IV.	9	6.57	42 31.8	38.57	8 23.93	47 50.4
6	11	. .	. .	44.5	1.0	. .	. .	. .	15 0.65	4.64	IV.	6	11.5	29 34.4	35.02	15 5.29	34 49.4
7	10	50.1	6.8	. .	. .	. .	. .	. .	18 39.00	4.60	II.	5	10.22	25 9.7	33.07	18 43.60	30 22.8
8	10	. .	. .	. .	59.5	15.5	. .	. .	18 59.34	4.59	V.	4	10.18	20 6.9	32.89	19 3.93	25 19.8
9	7	. .	. .	. .	. .	. .	16.0	32.3	19 43.80	4.60	VII.	7	4.50	31 25.3	32.49	19 48.40	36 37.8
10	11	. .	. .	. .	. .	36.0	52.2	. .	21 19.92	4.58	VI.	6	6.51	27 25.2	31.66	21 24.50	32 36.9
11	10	. .	. .	. .	. .	. .	. .	58.5	22 9.91	4.57	VII.	5	3.50	21 50.5	31.22	22 14.48	27 1.7
12	11	. .	. .	52.0	9.0	. .	. .	. .	25 8.29	4.54	IV.	4	5.35	17 43.4	29.67	25 12.83	22 53.1
13	8	49.5	6.0	. .	. .	. .	. .	. .	28 38.05	4.48	II.	2	5.36	7 42.0	27.79	28 42.53	12 49.8
14	6	. .	. .	21.5	38.0	. .	. .	. .	29 37.74	4.53	IV.	9	1.55	39 58.6	27.26	29 42.27	45 5.9
15	8	. .	59.0	15.5	. .	. .	. .	. .	32 31.66	4.50	III.	9	9.51	44 0.1	25.77	32 36.16	49 5.9
16	7	. .	. .	. .	23.5	40.0	. .	. .	33 23.54	4.44	V.	2	4.47	7 17.4	25.31	33 27.98	12 22.7
17	10	. .	. .	. .	. .	45.5	1.5	. .	34 29.35	4.43	VI.	2	9.	9 25.5	24.75	34 33.78	14 30.3
18	8	. .	. .	. .	16.3	32.4	. .	. .	36 16.23	4.47	V.	9	4.15	41 9.6	23.79	36 20.70	46 13.4
19	11	. .	. .	. .	22.5	38.5	. .	. .	37 22.31	4.42	V.	4	3.4	16 26.8	23.22	37 26.73	21 30.0
20	11	. .	. .	. .	48.5	4.5	. .	. .	38 48.32	4.40	V.	4	7.27	18 40.1	22.47	38 52.72	23 42.6
21	9	. .	46.0	2.5	19.0	. .	. .	. .	42 18.72	4.41	IV.	9	10.40	44 25.0	20.65	42 23.13	49 25.7
22	10	. .	. .	. .	. .	. .	46.5	3.0	43 14.34	4.35	VII.	3	2.36	21 14.8	20.17	43 18.69	26 15.0
23	11	. .	. .	42.0	58.2	. .	. .	. .	45 58.09	4.35	IV.	7	7.30	32 47.2	18.74	46 2.44	37 45.9
24	6	. .	. .	. .	9.0	25.0	. .	. .	47 8.88	4.36	V.	9	3.6	40 34.6	18.13	47 13.24	45 32.7
25	8	. .	. .	. .	. .	. .	24.8	40.8	47 52.46	4.33	VII.	7	4.9	31 4.5	17.75	47 56.79	36 2.2
26	10	. .	53.0	9.5	. .	. .	. .	. .	51 25.18	4.27	III.	3	5.38	12 44.1	15.95	51 29.45	17 40.0
27	8	. .	. .	. .	. .	44.0	0.5	. .	53 27.08	4.29	VI.	8	9.54	39 0.5	14.86	53 31.37	43 55.4
28	5	. .	. .	. .	. .	. .	. .	17.0	53 28.24	4.24	VII.	2	9.53	9 52.0	14.87	53 32.48	14 46.9
29	9	. .	27.0	43.0	. .	. .	. .	. .	55 59.40	4.27	III.	9	7.24	42 45.5	13.57	56 3.67	47 39.1
30	8	. .	36.5	53.5	. .	. .	. .	. .	57 9.38	4.27	III.	9	3.39	40 51.3	13.00	57 13.65	45 44.3
31	7	. .	. .	. .	. .	31.5	47.5	4.5	19 59 15.48	+ 4.18	VII.	2	6.	− 7 53.8	− 11.90	19 59 19.66	− 39 12 45.7

ZONE 61. AUGUST 29. A. $D_0 = -35° (17)'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	. .	30.5	46.0	. .	. .	. .	20 15 45.81	+ 3.88	IV.	6	8.56	−28 28.4	. .	20 15 49.69	
2	11	. .	. .	. .	. .	43.0	59.0	. .	16 27.99	3.86	VI.	5	8.8	24 1.9	. .	16 31.85	
3	9	. .	. .	. .	. .	. .	46.0	1.0	18 15.11	3.86	VII.	8	3.38	35 47.8	. .	18 18.97	
4	9	. .	. .	. .	. .	. .	45.5	1.0	19 14.84	3.84	VII.	7	2.4	30 0.5	. .	19 18.68	
5	8	. .	. .	. .	. .	. .	39.5	55.0	19 8.85	3.84	VII.	7	8.40	33 20.9	. .	19 12.69	
6	9	. .	. .	. .	. .	53.0	8.0	23.5	21 37.45	3.63	VII.	7	8.29	33 15.3	. .	21 41.08	
7	8	. .	. .	. .	. .	16.0	31.5	47.0	22 0.81	3.65	VII.	9	8.28	43 14.7	. .	22 4.46	
8	9	. .	18.5	34.0	49.6	. .	. .	. .	28 49.36	3.55	IV.	7	4.49	31 24.5	. .	28 52.91	
9	7	. .	. .	. .	. .	45.0	0.6	16.0	30 29.83	3.55	VII.	8	9.10	38 35.8	. .	30 33.38	
10	9	. .	. .	0.0	15.5	. .	. .	. .	33 15.40	3.62	IV.	8	10.6	39 4.8	. .	33 19.02	
11	8	. .	. .	. .	. .	13.5	29.0	44.5	33 58.32	3.52	VII.	10	4.14	46 8.2	. .	34 2.84	
12	4	. .	. .	. .	39.0	54.0	. .	. .	35 38.71	3.47	V.	5	8.44	24 20.3	. .	35 42.18	
13	8	. .	. .	. .	. .	. .	32.0	47.2	36 1.21	3.49	VII.	8	5.45	36 52.1	. .	36 4.70	
14	7	. .	. .	. .	42.2	57.5	. .	. .	20 37 42.06	+ 3.45	V.	5	7.42	−23 48.9	. .	20 37 45.51	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°
Zone 60	Aug. 29,	18 59	30.06	77.5	73.5
		19 59	30.06	77.5	75.5
Zone 61	Aug. 29,	20 15	30.06	77.0	73.0
		21 3	30.07	77.0	71.3

REMARKS.

(60) 1. Micrometer reading assumed as $9^r.56$ instead of $8^r.56$.

ZONE 61. AUGUST 29. A. $D_0 = -35°$ (17)′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
15	8	. .	. .	. .	. .	. .	58.0	13.0	20 38 27.11	+ 3.47	VII.	8	8.17	−38 9.0	. .	20 38 30.58	
16	11	. .	. .	. .	16.5	32.0	. .	. .	40 16.47	3.43	V.	6	7.24	27 41.8	. .	40 19.90	
17	11	. .	. .	. .	3.5	19.0	. .	. .	42 3.47	3.41	V.	6	6.25	27 11.9	. .	42 6.88	
18	9	. .	. .	. .	10.0	25.2	. .	. .	43 9.82	3.40	V.	6	4.53	26 25.4	. .	43 13.22	
19	8	. .	. .	15.0	30.0	. .	. .	. .	44 29.97	3.38	IV.	4	4.55	17 23.1	. .	44 33.35	
20	8	. .	. .	. .	. .	31.8	47.0	2.5	46 16.31	3.35	VII.	2	8.	8 57.1	. .	46 19.66	
21	8	. .	. .	. .	26.5	41.5	57.0	. .	50 26.29	3.30	VI.	2	3.52	6 51.9	. .	50 29.59	
22	6	. .	. .	. .	. .	4.5	19.3	35.0	51 48.87	3.30	VII.	6	7.55	27 57.0	. .	51 52.17	
23	8	. .	. .	. .	. .	30.0	45.5	1.0	53 14.79	3.31	VII.	8	4.38	36 18.2	. .	53 18.10	
24	9	. .	. .	. .	. .	4.0	19.5	. .	54 48.77	3.25	VI.	2	2.50	6 20.5	. .	54 52.02	
25	9	50.0	6.0	21.5	. .	. .	. .	. .	57 36.58	3.23	III.	5	3.4	21 28.3	. .	57 39.81	
26	10	. .	. .	. .	. .	9.5	25.2	. .	20 58 54.35	3.23	VI.	7	11.	34 32.0	. .	20 58 57.58	
27	9	30.0	45.2	. .	. .	. .	. .	. .	21 1 15.95	3.18	II.	2	4.30	7 11.1	. .	21 1 19.13	
28	9	. .	. .	. .	47.5	2.8	. .	. .	1 47.35	3.18	V.	4	6.9	18 1.6	. .	1 50.53	
29	8	6.4	22.5	. .	. .	. .	. .	. .	21 3 53.00	+ 3.17	II.	5	5.47	−22 50.6	. .	21 3 56.17	
ZONE 62. SEPTEMBER 2. A. $D_0 = -31° 34' 10''$.																	
1	5	. .	. .	. .	48.0	2.5	17.0	. .	18 14 47.76	+ 1.60	VI.	10	7.37	−47 49.6	. .	18 14 49.36	
2	6	. .	. .	. .	8.2	23.2	. .	. .	16 8.23	1.54	V.	4	1.50	15 51.2	. .	16 9.77	
3	9	. .	. .	. .	. .	. .	21.0	36.1	16 51.76	1.54	VII.	4	3.50	16 51.4	. .	16 53.30	
4	9	. .	. .	. .	. .	. .	. .	20.5	17 36.23	1.54	VII.	5	7.14	23 34.5	. .	17 37.77	
5	8	. .	. .	. .	. .	5.5	20.5	35.5	18 51.07	1.54	VII.	5	8.20	24 7.8	. .	18 52.61	
6	10	. .	. .	. .	. .	. .	18.5	33.5	19 49.24	1.54	VII.	6	9.12	28 35.8	. .	19 50.78	
7	7	. .	. .	. .	21.5	36.0	. .	. .	21 21.35	1.56	V.	10	9.36	48 49.9	. .	21 22.91	
8	10	. .	. .	. .	. .	38.0	52.5	. .	22 23.22	1.54	VI.	9	3.8	40 31.9	. .	22 24.76	
9	9	. .	. .	6.0	21.5	. .	. .	. .	24 21.14	1.54	IV.	10	6.13	47 7.3	. .	24 22.68	
10	10	. .	. .	45.2	59.5	. .	. .	. .	26 59.48	1.47	IV.	3	10.26	15 12.4	. .	27 0.95	
11	10	. .	. .	2.0	17.0	. .	. .	. .	28 16.67	1.46	IV.	4	11.11	20 34.8	. .	28 18.13	
12	7	. .	8.5	23.4	. .	. .	. .	. .	29 38.12	1.49	III.	8	3.14	35 35.4	. .	29 39.61	
13	8	. .	34.0	48.8	. .	. .	. .	. .	31 3.53	1.47	III.	7	10.52	34 27.5	. .	31 5.00	
14	6	. .	43.5	58.5	13.0	. .	. .	. .	32 12.74	1.42	IV.	1	4.45	2 20.6	. .	32 14.16	
15	7	. .	2.2	17.3	. .	. .	. .	. .	33 31.59	1.43	III.	3	4.57	12 26.0	. .	33 33.02	
16	10	. .	. .	. .	10.0	24.2	. .	. .	18 34 9.67	+ 1.47	V.	8	5.42	−36 50.2	. .	18 34 11.14	
ZONE 63. SEPTEMBER 2. A. $D_0 = -26° 32' 40''$.																	
1	7	. .	2.3	16.5	. .	. .	. .	. .	19 0 30.23	+ 0.78	III.	3	8.58	−14 28.4	. .	19 0 31.01	
2	7	. .	. .	. .	. .	. .	2.0	16.5	0 34.23	0.78	VII.	4	11.58	20 58.4	. .	0 35.01	
3	8	. .	. .	. .	. .	25.5	39.2	. .	2 11.37	0.82	VI.	10	6.11	47 5.0	. .	2 12.19	
4	10	. .	. .	. .	. .	. .	37.8	52.0	3 9.91	0.79	VII.	7	2.59	30 27.8	. .	3 10.70	
5	5	. .	. .	. .	. .	51.0	4.9	18.9	4 36.96	0.78	VII.	7	12.	35 1.0	. .	4 37.74	
6	8	1.4	15.7	29.8	. .	. .	. .	. .	6 43.64	0.74	III.	4	10.19	20 8.7	. .	6 44.38	
7	11	. .	. .	. .	15.0	29.0	. .	. .	7 14.90	0.75	V.	5	6.55	23 25.4	. .	7 15.65	
8	10	. .	. .	. .	. .	25.5	39.3	. .	8 11.42	0.72	VI.	3	5.30	12 43.2	. .	8 12.14	
9	8	. .	. .	. .	40.0	53.5	. .	. .	9 39.67	0.76	V.	10	7.1	47 30.4	. .	9 40 45	
10	8	. .	. .	46.3	0.6	14.1	. .	. .	19 11 0.28	+ 0.73	V.	7	7.35	−32 47.5	. .	19 11 1.01	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Sept. 2,	18	− 10.53	− 0.029	+ 0.372	− 0.163	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 62	Sept. 2,	18 14	30.06	82.5	80.5
		18 34	30.07	82.2	79.5
Zone 63	Sept. 2,	19 0	30.07	82.0	78.5
		19 32	30.07	82.0	78.0

REMARKS.

Zone 63. September 2. A. D₀=−26° 32′ 40″—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	Micrometer.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
11	8	. .	. .	. .	. .	4.5	18.2	. .	19 11 50.37	+ 0.75	VI.	10	7.42	−47 51.0	. .	19 11 51.12	
12	8	2.6	16.8	. .	. .	. .	. .	. .	13 44.89	0.71	II.	6	6.26	27 12.1	. .	13 45.60	
13	9	. .	. .	. .	. .	20.5	35.0	. .	14 6.77	0.74	VI.	9	8.40	43 18.9	. .	14 7.51	
14	8	. .	. .	. .	. .	. .	41.9	55.8	15 13.92	0.73	VII.	10	2.49	45 22.8	. .	15 14.65	
15	8	59.5	14.0	. .	. .	. .	. .	. .	17 41.99	0.69	II.	7	6.1	31 59.9	. .	17 42.68	
16	9	. .	. .	. .	. .	16.0	30.0	44.0	18 2.07	0.71	VII.	9	4.42	41 18.5	. .	18 2.78	
17	5	. .	. .	. .	34.0	48.2	. .	. .	20 34.04	0.69	V.	10	1.22	44 39.2	. .	20 34.73	
18	9	. .	. .	. .	. .	5.5	20.0	. .	22 51.77	0.63	VI.	2	5.56	7 56.8	. .	22 52.40	
19	10	. .	. .	32.0	46.0	. .	. .	. .	24 45.95	0.65	IV.	8	6.34	37 15.9	. .	24 46.60	
20	11	. .	43.0	58.0	. .	. .	. .	. .	26 11.55	0.63	III.	7	7.43	32 51.6	. .	26 12.18	
21	7	. .	. .	. .	40.0	53.9	. .	. .	26 39.81	0.58	V.	1	9.32	4 46.5	. .	26 40.39	
22	9	. .	. .	. .	. .	. .	48.0	2.5	28 20.21	0.60	VII.	4	6.47	18 21.3	. .	28 20.81	
23	9	. .	. .	. .	. .	42.2	56.0	. .	29 18.12	0.70	VI.	6	5.19	26 38.2	. .	29 18.82	
24	10	. .	. .	. .	12.0	26.0	. .	. .	31 11.92	0.59	V.	7	8.5	33 2.6	. .	31 12.51	
25	10	. .	. .	22.0	36.0	. .	. .	. .	19 32 35.99	+ 0.60	IV.	9	5.59	−41 57.7	. .	19 32 36.59	

Zone 64. September 7. A. D₀=−24° 2′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	Micrometer.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	5	. .	. .	41.5	54.0	8.0	. .	. .	21 50 54.42	− 4.75	V.	6	11.55	−29 58.3	− 55.6	21 50 49.67	− 24 32 53.9
2	10	. .	. .	. .	. .	. .	4.0	18.0	51 36.85	4.76	VII.	6	12.	30 0.5	55.3	51 32.09	32 55.8
3	7	9.6	23.6	. .	. .	. .	. .	. .	53 50.86	4.78	II.	4	5.5	17 30.1	54.4	53 46.08	20 24.5
4	9	47.5	1.3	. .	. .	. .	. .	. .	56 28.73	4.80	II.	5	9.14	24 35.4	53.3	56 23.93	27 28.7
5	8	. .	. .	45.5	59.0	. .	. .	. .	56 58.81	4.82	IV.	2	4.1	6 59.1	53.1	56 53.99	9 52.2
6	9	. .	. .	31.5	44.8	. .	. .	. .	58 44.80	4.82	IV.	4	8.	18 58.7	52.3	58 39.98	21 51.0
7	7	. .	27.5	41.5	. .	. .	. .	. .	21 59 54.96	4.83	III.	5	9.57	24 57.3	51.8	21 59 50.13	27 49.1
8	6	28.0	41.8	. .	. .	. .	. .	. .	22 1 9.19	4.84	II.	4	11.20	20 39.5	51.4	22 1 4.35	23 30.9
9	7	. .	45.0	59.0	. .	. .	. .	. .	2 12.33	4.85	III.	3	8.35	14 16.9	50.9	2 7.48	17 7.8
10	9	. .	. .	. .	. .	. .	47.5	1.0	2 20.13	4.83	VII.	9	8.11	43 3.8	50.9	2 15.30	45 54.7
11	8	54.6	8.5	. .	. .	. .	. .	. .	5 35.86	4.87	II.	5	4.39	22 16.6	49.5	5 30.99	25 6.1
12	9	. .	. .	. .	. .	59.0	12.8	. .	5 45.44	4.87	VI.	8	6.	36 58.4	49.5	5 40.57	39 47.9
13	6	. .	. .	. .	. .	. .	55.0	8.7	6 27.73	4.86	VII.	9	6.3	41 59.2	49.1	6 22.87	44 48.3
14	9	32.0	46.0	. .	. .	. .	. .	. .	9 13.31	4.91	II.	5	9.24	24 40.5	48.0	9 8.40	27 28.5
15	5	. .	. .	. .	13.0	26.5	. .	. .	10 12.77	4.93	V.	1	3.42	1 50.1	47.6	10 7.84	4 37.7
16	8	. .	. .	. .	. .	25.0	38.6	. .	11 11.33	4.92	VI.	7	3.2	30 29.4	47.2	11 6.41	33 16.6
17	5	. .	. .	7.0	20.7	. .	. .	. .	16 20.36	4.98	IV.	1	9.23	4 42.3	45.3	16 15.38	7 27.6
18	4	15.6	29.6	. .	. .	. .	. .	. .	17 56.92	4.98	II.	5	7.48	23 52.0	44.6	17 51.94	26 36.6
19	9	25.0	37.5	. .	. .	. .	. .	. .	18	4.97	II.	8	3.32	35 43.7	44.5	18	38 28.2
20	7	59.0	13.0	. .	. .	. .	. .	. .	21 40.41	5.01	II.	7	9.50	34 26.7	43.1	21 35.40	37 9.8
21	9	. .	. .	10.0	23.8	. .	. .	. .	22 23.56	5.02	IV.	5	3.10	21 31.8	42.9	22 18.54	24 14.7
22	4	44.0	51.8	. .	. .	. .	. .	. .	26	5.03	II.	9	8.13	43 5.0	41.5	26	45 46.5
23	8	. .	. .	. .	. .	58.0	11.2	. .	27 57.54	5.05	VI.	9	9.41	43 49.4	40.8	27 52.49	46 30.2
24	9	50.2	4.3	. .	. .	. .	. .	. .	31 31.56	5.10	II.	5	10.4	25 0.7	39.5	31 26.46	27 40.2
25	10	. .	. .	. .	. .	. .	48.5	2.0	35 21.07	5.12	VII.	6	6.26	27 11.9	37.9	35 15.75	29 49.8
26	8	. .	. .	4.5	. .	32.0	. .	. .	36 18.21	5.13	V.	7	3.14	30 35.6	37.5	36 13.08	33 13.1
27	7	32.3	46.0	. .	. .	. .	. .	. .	43 13.54	5.18	II.	7	3.59	30 58.2	34.9	43 8.36	33 33.1
28	7	. .	52.0	6.2	. .	. .	. .	. .	45 19.73	5.19	III.	9	3.47	40 50.8	34.1	45 14.54	43 24.9
29	8	25.8	39.8	. .	. .	. .	. .	. .	47 7.30	5.21	II.	9	8.38	43 17.6	33.5	47 2.09	45 51.1
30	8	. .	. .	59.2	13.0	. .	. .	. .	22 48 12.87	− 5.22	IV.	8	4.54	−36 25.3	− 33.1	22 48 7.65	− 24 38 58.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Sept. 7,	18	− 14.57.	− 0.027	+ 0.497	− 0.319	0.000

INSTRUMENT READINGS.

	Date.		Barom.	Thermom. At.	Thermom. Ex.
	1846	h. m.	in.	°	°
Zone 64	Sept. 7,	21 50	30.09	81.0	72.0
		23 24	30.08	79.0	49.0

REMARKS.

(63) 23. Transits over T.'s V and VI assumed as 32ˢ.2 and 46ˢ.0 instead of 42ˢ.2 and 56ˢ.0.
(64) 20. Micrometer assumed as 10ʳ.50 instead of 9ʳ.50.
(64) 23. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.
(64) 24. Transit over T. VI rejected.

ZONE 64. SEPTEMBER 7. A. $D_0 = -24° 2' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
31	9	. .	. .	3.2	17.0	. .	. .	. .	22 49 16.86	— 5.23	IV.	8	3.35	—35 45.4	— 32.6	22 49 11.63	— 24 38 18.0
32	8	. .	7.5	21.7	. .	. .	. .	. .	50 35.07	5.25	III.	6	6.0	26 59.0	32.2	50 29.82	29 31.2
33	5	. .	. .	. .	. .	. .	13.5	27.5	50 46.26	5.26	VII.	3	4.46	12 21.0	32.1	50 41.00	14 53.1
34	8	47.2	1.2	. .	. .	. .	. .	. .	54 28.49	5.28	II.	4	10.57	20 28.6	30.8	54 23.21	22 59.4
35	9	. .	42.0	55.5	. .	. .	. .	. .	56 9.30	5.29	III.	7	8.26	33 13.2	30.2	56 4.01	35 43.4
36	8	. .	. .	48.0	2.0	. .	. .	. .	57 1.77	5.30	IV.	8	4.58	36 27.3	29.9	56 56.47	38 57.2
37	4	0.3	14.5	28.0	. .	. .	. .	. .	22 58 41.72	5.31	III.	7	3.3	30 30.1	29.3	22 58 36.41	32 59.4
38	7	51.5	5.9	19.5	. .	. .	. .	. .	23 4 33.14	5.36	III.	8	3.0	35 27.7	27.2	23 4 27.78	37 54.9
39	8	. .	24.0	37.5	51.3	. .	. .	. .	6 51.27	5.38	IV.	8	5.0	36 28.3	26.4	6 45.89	38 54.7
40	8	. .	. .	57.0	11.5	. .	. .	. .	9 11.08	5.39	IV.	10	2.40	45 18.3	25.6	9 5.69	47 43.9
41	6	16.5	30.5	. .	. .	. .	. .	. .	14 57.72	5.46	II.	3	7.39	13 48.5	23.6	14 52.26	16 12.1
42	8	. .	. .	. .	. .	27.0	40.4	. .	15 13.23	5.47	VI.	2	10.15	10 7.8	23.5	15 7.76	12 31.3
43	8	. .	51.0	5.0	. .	. .	. .	. .	17 18.31	5.48	III.	3	4.20	12 8.2	22.8	17 12.83	14 31.0
44	6	. .	. .	22.5	36.0	. .	. .	. .	21 36.10	5.49	IV.	10	9.43	49 22.2	21.4	21 30.61	51 43.6
45	10	. .	. .	. .	28.5	42.0	. .	. .	23 24 28.33	— 5.52	V.	6	5.55	—26 56.5	— 20.5	23 24 22.81	— 24 29 17.0

ZONE 65. SEPTEMBER 9. A. $D_0 = -39° 4' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	44.0	1.5	. .	. .	. .	. .	. .	18 28 33.42	— 2.78	II.	7	8.11	—33 7.7	— 53.15	18 28 30.64	— 39 38 40.9
2	8	. .	50.0	6.2	. .	. .	. .	. .	29 22.23	2.80	III.	5	11.25	25 41.9	52.74	29 19.43	31 14.6
3	9	. .	. .	. .	. .	20.8	36.8	. .	31 4.64	2.83	VI.	4	5.24	17 37.5	51.85	31 1.81	23 9.4
4	6	. .	. .	. .	32.5	48.5	. .	. .	32 32.32	2.83	V.	4	9.47	19 51.1	51.07	32 29.49	25 22.2
5	5	. .	. .	. .	34.5	50.5	. .	. .	34 34.39	2.81	V.	9	10.30	44 20.0	50.01	34 31.58	49 50.0
6	9	. .	19.5	35.5	. .	. .	. .	. .	36 51.82	2.84	III.	8	7.23	37 44.2	48.84	36 48.98	43 13.0
7	7	. .	23.0	39.5	. .	. .	. .	. .	37 55.61	2.83	III.	9	2.18	40 10.3	48.24	37 52.78	45 38.5
8	9	. .	. .	. .	. .	. .	43.5	59.5	38 11.17	2.85	VII.	7	8.27	33 15.5	48.11	38 8.32	38 43.6
9	8	. .	. .	. .	. .	56.5	12.0	. .	40 40.11	2.90	VI.	5	10.6	25 1.6	46.81	40 37.21	30 28.4
10	6	. .	. .	. .	. .	5.5	22.0	. .	40 49.62	2.92	VI.	3	10.9	15 1.2	46.73	40 46.70	20 27.9
11	9	21.5	38.0	. .	. .	. .	. .	. .	43 10.30	2.91	II.	5	9.36	24 46.4	45.50	43 7.39	30 11.9
12	9	. .	45.0	1.0	. .	. .	. .	. .	44 17.34	2.89	III.	8	9.35	38 51.2	44.91	44 14.45	44 16.1
13	10	. .	. .	. .	. .	5.0	21.5	. .	44 49.11	2.94	VI.	4	10.57	20 26.4	44.64	44 46.17	25 51.0
14	7	. .	. .	. .	27.2	43.2	. .	. .	46 27.07	2.91	V.	8	4.35	36 19.0	43.75	46 24.16	41 42.8
15	6	2.0	18.8	. .	. .	. .	. .	. .	48 51.14	2.93	II.	8	8.19	38 12.4	42.56	48 48.21	43 35.0
16	8	. .	55.5	11.7	. .	. .	. .	. .	50 27.98	2.93	III.	9	5.11	41 38.1	41.71	50 25.05	46 59.8
17	9	. .	15.5	32.5	. .	. .	. .	. .	51 48.10	2.99	III.	5	8.3	23 59.4	41.01	51 45.11	29 20.4
18	8	29.0	45.0	. .	. .	. .	. .	. .	53 17.69	2.98	II.	7	10.5	34 5.6	40.23	53 14.71	39 25.8
19	8	. .	. .	. .	. .	57.0	13.5	. .	54 40.10	2.97	VI.	9	10.55	44 32.6	39.53	54 37.13	49 52.1
20	8	. .	. .	. .	. .	28.8	44.0	. .	55	.97	VI.	9	8.19	43 13.3			
21	9	. .	. .	. .	. .	9.0	25.3	. .	56 52.98	3.04	VI.	4	2.24	16 6.2	38.37	56 49.94	21 24.6
22	4	56.0	12.5	. .	. .	. .	. .	. .	18 59 44.85	— 3.05	II.	6	9.20	—29 11.4	— 36.92	18 59 41.80	— 39 34 28.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Sept. 9,	18	— 15.75	— 0.052	+ 0.497	— 0.319	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°
Zone 65	Sept. 9,	18 28	30.16	76.0	66.1

REMARKS.

(64) 44. Micrometer assumed as 10r.43 instead of 9r.43.
(65) 22. Micrometer reading assumed as 10r.20 instead of 9r.20.

ZONE 66. SEPTEMBER 9. A. $D_0 = -32° 49' 30''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	6.5	21.5	. .	20 40 51.67	— 4.70	VI.	9	10.27	—44 14.3	— 17.4	20 40 46.97	— 33 34 1.7
2	9	. .	. .	. .	36.0	51.0	. .	. .	42 35.94	4.76	V.	4	10.28	20 12.9	17.2	42 31.18	10 0.1
3	9	. .	28.5	43.5	. .	. .	. .	. .	44 58.50	4.75	III.	8	2.38	35 17.5	16.8	44 53.75	25 4.3
4	10	. .	. .	. .	. .	. .	38.0	53.0	45 8.23	4.77	VII.	6	5.1	26 28.9	16.7	45 3.46	16 15.6
5	8	. .	36.0	50.9	. .	. .	. .	. .	47 5.85	4.80	III.	7	4.15	31 7.0	16.4	47 1.05	20 53.4
6	10	9.5	24.8	. .	. .	. .	. .	. .	51 54.62	4.85	II.	6	4.30	26 13.5	15.6	51 49.77	15 59.1
7	5	. .	. .	. .	. .	. .	45.4	0.6	52 15.79	4.82	VII.	9	9.47	38 54.0	15.5	52 10.97	28 39.5
8	7	. .	. .	. .	49.0	4.0	. .	. .	53 48.94	4.89	V.	4	11.23	20 40.7	15.3	53 44.05	10 26.0
9	7	11.5	26.8	. .	. .	. .	. .	. .	55 56.74	4.88	II.	8	2.57	35 26.9	15.0	55 51.86	25 11.9
10	8	. .	20.0	35.0	. .	. .	. .	. .	56 49.99	4.89	III.	8	5.13	36 30.8	14.8	56 45.10	33 26 15.6
11	4	. .	. .	. .	. .	33.5	48.1	. .	20 57 18.49	4.93	VI.	2	3.32	6 27.5	14.7	20 57 13.56	32 56 12.2
12	7	. .	44.1	59.4	. .	. .	. .	. .	21 1 14.25	4.93	III.	8	7.20	37 40.1	14.1	21 1 9.32	33 27 24.2
13	9	. .	35.5	51.0	. .	. .	. .	. .	5 5.59	5.00	III.	6	4.52	26 24.8	13.5	5 0.59	16 8.3
14	7	. .	. .	. .	. .	34.5	49.3	. .	5 19.58	5.01	VI.	4	8.56	19 26.2	13.5	5 14.57	9 9.7
15	8	. .	. .	42.6	57.8	. .	. .	. .	6 57.56	5.02	IV.	7	4.0	30 59.4	13.3	6 52.54	20 42.7
16	8	. .	. .	45.5	1.0	. .	. .	. .	9 0.68	5.03	IV.	8	10.58	39 30.4	12.9	8 55.65	33 29 13.3
17	5	. .	. .	. .	2.5	17.4	. .	. .	10 2.35	5.08	V.	2	8.35	9 16.0	12.8	9 57.27	32 58 58.8
18	9	. .	. .	. .	. .	. .	7.0	22.0	10 37.18	5.09	VII.	3	8.28	14 10.4	12.7	10 32.09	33 3 53.1
19	6	. .	. .	. .	. .	. .	45.0	0.2	11 15.30	5.08	VII.	4	8.2	18 58.6	12.6	11 10.22	8 41.2
20	9	. .	58.5	13.5	. .	. .	. .	. .	14 28.47	5.09	III.	8	3.48	35 52.9	12.2	14 23.38	25 35.1
21	8	48.8	4.0	. .	. .	. .	. .	. .	18 34.08	5.14	II.	9	5.21	41 39.6	11.6	18 28.94	31 21.2
22	10	. .	. .	. .	. .	. .	5.0	20.2	18 35.29	5.18	VII.	4	8.21	19 8.2	11.6	18 30.11	8 49.8
23	9	5.0	20.5	. .	. .	. .	. .	. .	25 50.25	5.25	II.	6	7.15	27 37.0	10.6	25 45.00	17 17.6
24	10	. .	. .	. .	53.0	7.5	. .	. .	27 52.68	5.29	V.	4	6.33	18 14.1	10.3	27 47.39	7 54.4
25	8	. .	17.5	32.6	. .	. .	. .	. .	30 47.53	5.29	III.	8	4.40	36 19.2	9.9	30 42.24	25 59.1
26	6	2.4	17.2	. .	. .	. .	. .	. .	32 47.24	5.34	II.	5	5.50	22 52.2	9.6	32 41.90	12 31.8
27	7	. .	. .	7.0	21.7	. .	. .	. .	33 21.63	5.34	IV.	5	3.16	21 34.5	9.6	33 16.29	11 14.1
28	7	. .	. .	. .	. .	. .	57.0	12.5	34 27.51	5.33	VII.	8	7.2	37 30.5	9.4	34 22.18	27 9.9
29	8	. .	. .	. .	59.0	13.6	. .	. .	36 58.77	5.37	V.	7	7.43	32 52.1	9.1	36 53.40	22 31.2
30	6	. .	4.0	19.3	. .	. .	. .	. .	37 34.10	5.39	III.	7	10.40	34 21.7	9.1	37 28.71	24 0.8
31	10	. .	. .	. .	. .	29.0	43.5	. .	38 13.93	5.41	VI.	4	3.20	16 36.3	9.0	38 8.52	6 15.3
32	6	. .	. .	. .	. .	31.2	46.0	. .	39 16.28	5.43	VI.	3	4.58	12 26.2	8.8	39 10.85	2 5.0
33	10	. .	. .	. .	. .	. .	35.5	51.0	40 5.95	5.44	VII.	3	11.50	15 54.1	8.7	40 0.51	5 32.8
34	10	. .	. .	. .	. .	. .	54.0	9.0	41 24.23	5.43	VII.	6	6.43	27 20.5	8.6	41 18.80	16 59.1
35	8	. .	. .	. .	44.5	59.3	. .	. .	42 44.35	5.46	V.	5	8.37	24 16.8	8.4	42 38.89	13 55.2
36	10	. .	. .	. .	. .	. .	59.5	15.0	43 29.98	5.46	VII.	6	10.13	29 6.7	8.3	43 24.52	18 45.0
37	8	. .	31.2	46.5	. .	. .	. .	. .	46 1.43	5.46	III.	9	9.49	43 55.3	8.0	45 55.97	33 33.3
38	9	. .	. .	53.0	8.0	. .	. .	. .	47 7.78	5.50	IV.	5	4.20	22 6.9	7.9	47 2.28	11 44.8
39	7	. .	58.0	12.8	. .	. .	. .	. .	48 27.67	5.53	III.	4	11.14	20 36.2	7.8	48 22.14	10 14.0
40	7	. .	. .	. .	57.0	12.5	. .	. .	48 57.21	5.53	V.	6	7.35	27 47.2	7.7	48 51.68	17 24.9
41	7	. .	. .	. .	55.5	10.5	. .	. .	49 55.42	5.56	V.	3	8.49	14 23.0	7.6	49 49.86	33 4 0.6
42	5	. .	. .	. .	. .	8.2	22.5	. .	53 53.04	5.61	VI.	1	3.32	1 42.8	7.2	53 47.43	32 51 20.0
43	8	. .	. .	. .	. .	21.2	35.7	50.8	55 6.03	5.61	VII.	3	10.11	15 4.0	7.1	55 0.42	33 4 41.1
44	8	. .	. .	. .	. .	. .	36.9	52.1	56 7.23	5.61	VII.	6	5.57	26 57.2	7.0	56 1.62	16 34.2
45	8	. .	52.5	7.5	. .	. .	. .	. .	21 59 22.21	5.66	III.	4	4.19	17 6.3	6.6	21 59 16.55	6 42.9
46	7	. .	. .	1.3	16.1	. .	. .	. .	22 0 16.00	5.66	IV.	5	7.46	23 51.1	6.5	22 0 10.34	13 27.6
47	4	. .	. .	11.2	26.4	. .	. .	. .	1 26.13	5.67	IV.	6	6.40	27 19.5	6.4	1 20.46	16 55.9
48	8	48.4	3.4	. .	. .	. .	. .	. .	3 33.34	5.71	II.	5	5.33	22 43.6	6.2	3 27.63	12 19.8
49	10	. .	. .	. .	. .	54.0	8.4	. .	22 3 38.88	— 5.72	VI.	4	8.30	—19 13.1	— 6.2	22 3 33.16	— 33 8 49.3

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
Sept. 9, 18	— 15.75	— 0.052	+ 0.497	— 0.319	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°
Zone 66	Sept. 9, 20 40	30.21	75.0	62.6

REMARKS.

(66) 7. Micrometer assumed as wire 8 instead of wire 9.
(66) 11. Micrometer assumed as 2 3ʳ.2 instead of 2 3ʳ.32.

Zone 66. September 9. A. D₀ = −32° 49′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	10	. .	30.5	45.5	. .	. .	. .	. .	22 5 0.15	— 5.73	III.	3	6.40	—13 17.8	— 6.1	22 4 54.42	— 33 2 53.9
51	10	. .	. .	32.0	47.3	. .	. .	. .	7 46.96	5.76	IV.	5	10.26	25 12.0	5.8	7 41.20	14 47.8
52	8	. .	49.5	4.7	. .	. .	. .	. .	9 19.40	5.78	III.	5	7.9	23 32.3	5.7	9 13.62	13 8.0
53	9	. .	. .	1.0	16.0	. .	. .	. .	10 15.93	5.78	IV.	8	10.41	39 21.8	5.6	10 10.15	28 57.4
54	10	. .	. .	1.5	16.2	. .	. .	. .	11 16.14	5.80	IV.	5	5.25	22 39.8	5.5	11 10.34	12 15.3
55	9	. .	. .	42.5	57.8	. .	. .	. .	12 57.56	5.82	IV.	8	5.7	36 32.9	5.4	12 51.74	33 26 8.3
56	8	. .	. .	53.0	8.0	. .	. .	. .	18 7.63	5.91	IV.	1	6.4	2 59.9	5.0	18 1.72	32 52 34.9
57	9	. .	. .	. .	28.0	44.0	. .	. .	19 27.87	5.91	V.	3	4.54	12 24.2	4.9	19 21.96	33 1 59.1
58	4	18.8	34.0	49.1	. .	. .	. .	. .	23 3.79	5.96	III.	4	7.51	17 22.5	4.6	22 57.83	6 57.1
59	9	47.5	53.0	. .	. .	. .	. .	. .	24 32.73	5.95	II.	8	5.20	36 39.2	4.5	24 26.78	33 26 13.7
60	6	. .	. .	. .	. .	. .	. .	26.0	25 40.90	6.00	VII.	1	10.29	5 13.4	4.4	25 34.90	32 54 47.8
61	11	. .	. .	. .	. .	34.5	49.0	. .	27 19.43	5.99	VI.	5	7.2	23 28.6	4.3	27 13.44	33 13 2.9
62	9	. .	. .	37.0	51.8	. .	. .	. .	28 51.73	6.02	IV.	6	6.43	27 21.0	4.2	28 45.71	33 16 55.2
63	9	. .	39.5	54.7	. .	. .	. .	. .	30 9.21	6.05	III.	2	9.46	9 51.9	4.1	30 3.16	32 59 26.0
64	8	15.4	31.0	. .	. .	. .	. .	. .	32 0.83	6.04	II.	8	3.16	35 36.5	4.0	31 54.79	33 25 10.5
65	9	. .	. .	. .	22.1	37.0	. .	. .	32 22.00	6.05	V.	6	6.21	27 9.8	4.0	32 15.95	16 43.8
66	10	. .	. .	36.5	51.5	. .	. .	. .	34 51.45	6.08	IV.	9	8.4	43 2.2	3.9	34 45.37	33 32 36.1
67	8	. .	46.0	1.0	. .	. .	. .	. .	37 15.53	6.13	III.	1	8.7	4 2.0	3.8	37 9.40	32 53 35.8
68	7	3.2	18.4	. .	. .	. .	. .	. .	38 48.43	6.13	II.	8	8.7	38 3.7	3.7	38 42.30	33 27 37.4
69	9	9.0	24.5	. .	. .	. .	. .	. .	40 54.45	6.15	II.	9	8.6	43 3.0	3.6	40 48.30	32 36.6
70	10	. .	. .	. .	11.5	26.5	. .	. .	41 11.47	6.16	V.	7	5.20	31 39.8	3.6	41 5.31	21 13.4
71	10	. .	. .	. .	. .	31.5	. .	. .	42 16.56	6.17	V.	5	7.11	23 33.3	3.5	42 10.39	13 6.8
72	9	. .	. .	. .	. .	. .	8.0	23.0	42 38.23	6.19	VII.	6	6.58	27 28.1	3.5	42 32.04	17 1.6
73	10	. .	. .	. .	51.0	5.5	. .	. .	44 50.70	6.21	V.	5	9.39	24 48.2	3.4	44 44.49	14 21.6
74	4	58.7	14.0	. .	. .	. .	. .	. .	47 43.89	6.25	II.	7	3.54	30 56.2	3.3	47 37.64	20 29.5
75	9	. .	. .	. .	. .	. .	0.4	15.4	52 30.65	6.30	VII.	7	6.20	32 9.7	3.1	52 24.35	21 42.8
76	10	. .	36.0	51.0	. .	. .	. .	. .	55 5.96	6.33	III.	7	11.12	34 37.8	3.0	54 59.63	33 24 10.8
77	7	. .	. .	. .	. .	58.8	13.2	. .	55 43.68	6.37	VI.	1	10.48	5 23.3	3.0	55 37.31	32 54 56.3
78	9	. .	. .	. .	. .	42.0	56.5	. .	57 26.92	6.34	VI.	8	6.55	37 27.3	2.9	57 20.58	33 27 0.2
79	8	. .	. .	0.5	15.4	. .	. .	. .	22 59 15.17	6.39	IV.	3	8.43	14 20.0	2.9	22 59 8.78	33 3 52.9
80	7	. .	. .	59.2	13.8	. .	. .	. .	23 1 13.68	6.42	IV.	2	7.37	8 46.8	2.8	23 1 7.26	32 58 19.6
81	7	. .	. .	21.2	36.2	. .	. .	. .	2 35.89	6.45	IV.	2	9.33	9 45.4	2.8	2 29.44	32 59 18.2
82	6	10.9	26.0	. .	. .	. .	. .	. .	4 55.83	6.46	II.	4	6.31	18 12.9	2.8	4 49.37	33 7 45.7
83	11	. .	. .	. .	9.0	24.0	. .	. .	9 8.96	6.50	V.	6	9.8	28 34.3	2.7	9 2.46	18 7.0
84	10	. .	. .	. .	4.0	19.0	. .	. .	10 3.95	6.51	V.	5	7.24	23 39.9	2.7	9 57.44	13 12.6
85	4	. .	. .	. .	. .	4.2	19.0	33.9	10 49.25	6.52	VII.	7	4.55	31 26.8	2.7	10 42.73	20 59.5
86	9	. .	. .	. .	. .	34.0	49.2	. .	12 19.27	6.52	VI.	8	4.22	36 9.9	2.7	12 12.75	25 42.6
87	11	. .	. .	42.0	57.0	. .	. .	. .	16 56.84	6.59	IV.	6	7.1	27 30.1	2.7	16 50.25	17 2.8
88	9	. .	. .	. .	. .	. .	21.5	37.0	17 51.93	6.62	VII.	3	9.54	14 55.4	2.7	17 45.31	4 28.1
89	10	. .	9.6	25.0	. .	. .	. .	. .	21 39.75	6.65	III.	7	10.44	34 23.7	2.7	21 33.10	23 56.4
90	8	. .	8.0	23.0	. .	. .	. .	. .	24 37.67	6.70	III.	3	8.34	14 15.4	2.7	24 30.97	3 48.1
91	9	. .	. .	58.0	13.0	. .	. .	. .	28 12.92	6.72	IV.	8	7.25	37 42.7	2.8	28 6.20	27 15.5
92	10	. .	. .	. .	. .	. .	30.0	45.0	29 0.26	6.74	VII.	8	3.41	35 48.9	2.8	28 53.52	25 21.7
93	9	. .	. .	59.5	14.0	. .	. .	. .	31 14.01	6.77	IV.	4	6.34	18 14.6	2.8	31 7.24	7 47.4
94	5	. .	. .	. .	. .	16.5	31.4	. .	32 1.62	6.76	VI.	9	9.57	43 59.2	2.8	31 54.86	33 32.0
95	9	. .	52.5	7.7	. .	. .	. .	. .	34 22.61	6.79	III.	8	9.30	38 45.8	2.9	34 15.82	28 18.7
96	9	. .	. .	7.5	22.3	. .	. .	. .	35 22.28	6.81	IV.	7	9.8	33 35.2	2.9	35 15.47	23 8.1
97	10	48.0	3.5	. .	. .	. .	. .	. .	39 33.21	6.87	II.	5	9.43	24 50.0	3.0	39 26.34	33 14 23.0
98	9	. .	. .	41.2	56.0	. .	. .	. .	23 40 55.79	— 6.90	IV.	2	10.23	—10 10.7	— 3.0	23 40 48.89	— 32 59 43.7

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1846. h. m.	in.	°	°

REMARKS.

(66) 58. Micrometer reading assumed as 4ʳ.51 instead of 7ʳ.51.

Zone 66. September 9. A. $D_\circ=-32^\circ\ 49'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
99	10	. .	. .	17.2	32.5	. .	. .	. .	23 42 32.20	— 6.91	IV.	7	3.17	—30 37.7	— 3.1	23 42 25.29	— 33 20 10.8
100	7	. .	. .	. .	47.0	1.6	. .	. .	43 46.75	6.91	V.	6	4.29	26 13.2	3.2	43 39.84	15 46.4
101	9	. .	. .	. .	. .	. .	. .	1.0	44 16.22	6.91	VII.	7	2.19	30 7.9	3.2	44 9.31	19 41.1
102	8	13.5	19.0	. .	. .	. .	. .	. .	46 58.62	7.94	II.	6	9.17	28 38.7	3.3	46 51.68	18 12.0
103	6	. .	38.5	53.6	. .	. .	. .	. .	52 8.20	7.01	III.	3	6.21	13 8.2	3.5	52 1.19	2 41.7
104	11	. .	. .	51.5	7.0	. .	. .	. .	53 6.63	7.01	IV.	7	9.41	33 51.9	3.6	52 59.62	23 25.5
105	9	26.8	42.0	. .	. .	. .	. .	. .	57 11.84	7.06	II.	5	4.31	22 12.3	3.8	57 4.78	11 46.1
106	6	. .	. .	23.0	37.9	. .	. .	. .	57 37.78	7.07	IV.	6	8.42	28 21.2	3.8	57 30.71	17 55.0
107	8	. .	33.2	48.2	. .	. .	. .	. .	59 3.21	7.07	III.	8	4.14	36 6.0	3.9	58 56.14	33 25 39.9
108	7	. .	. .	. .	48.0	3.0	. .	. .	23 59 7.90	— 7.11	V.	1	7.37	— 3 46.9	— 3.9	23 59 40.79	— 32 53 20.8
Zone 67. September 14. K. $D_\circ=-34^\circ\ 41'\ 10''$.																	
1	8	. .	. .	. .	. .	. .	23.4	39.2	19 28 53.16	— 7.36	VII.	2	12.10	—11 2.8	— 20.2	19 28 45.80	— 34 52 33.0
2	9	. .	45.3	0.6	15.8	. .	. .	. .	34 15.68	7.39	IV.	4	11.2	20 30.0	18.5	34 8.29	35 1 58.5
3	9	. .	. .	. .	41.2	56.4	11.7	. .	39 41.17	7.44	VII.	3	14.59	17 29.4	16.8	39 33.73	34 58 56.2
4	9	. .	. .	. .	. .	. .	8.8	. .	40 38.42	7.44	VII.	4	11.21	20 39.1	16.5	40 30.98	35 2 5.6
5	8	. .	. .	17.7	32.9	. .	. .	. .	47 32.69	7.52	V.	3	11.56	15 57.3	14.4	47 25.17	34 57 21.7
6	6.7	27.9	43.2	58.8	14.2	. .	. .	. .	50 13.90	7.52	V.	5	8.57	24 26.4	13.6	50 6.38	35 5 50.0
7	9	18.2	33.8	. .	. .	. .	. .	. .	52 4.20	7.54	III.	4	6.22	18 8.5	13.0	51 56.66	34 59 31.5
8	9	. .	. .	. .	23.0	38.2	. .	. .	52 22.88	7.54	VII.	5	10.21	25 8.9	12.9	52 15.34	35 6 31.8
9	8	5.1	20.8	36.2	. .	. .	. .	. .	19 55 51.24	— 7.58	IV.	5	7.36	—23 46.0	— 11.9	19 55 43.66	— 35 5 7.9
Zone 68. September 14. K. $D_\circ=-35^\circ\ 16'\ 40''$.																	
1	10	12.2	. .	. .	. .	. .	. .	. .	21 1 58.52	— 8.32	III.	4	7.37	—18 45.2	— 24.8	21 1 50.20	— 35 35 50.0
2	10	. .	. .	. .	4.3	. .	. .	. .	4 4.13	8.33	VI.	6	7.20	27 39.6	24.3	3 55.80	44 43.9
3	9	. .	. .	. .	4.6	19.8	. .	. .	5 4.45	8.33	VI.	9	6.39	42 19.8	24.1	4 56.12	59 23.9
4	9	. .	. .	. .	. .	16.1	. .	. .	6 0.68	8.37	VI.	4	10.50	20 23.6	23.9	5 52.31	37 27.5
5	9	. .	5.2	20.8	. .	. .	. .	. .	13 35.85	8.48	V.	3	11.45	15 51.6	22.1	13 27.37	32 53.7
6	7.8	49.8	5.3	. .	. .	. .	. .	. .	15 36.06	8.49	III.	4	8.45	19 20.6	21.7	15 27.57	36 22.3
7	7	57.5	. .	28.0	. .	. .	. .	. .	16 42.37	8.53	VI.	3	5.30	12 41.7	21.4	16 34.84	29 43.1
8	9	. .	. .	33.8	. .	. .	. .	. .	17 48.98	8.52	IV.	5	5.43	22 48.8	21.3	17 40.46	39 50.1
9	9	. .	. .	. .	. .	28.9	. .	59.9	18 13.51	8.53	VII.	3	11.47	15 52.1	21.2	18 4.98	32 53.3
10	9	. .	7.8	23.3	. .	. .	. .	. .	22 38.58	8.58	IV.	6	6.58	27 28.7	20.2	22 30.00	44 28.9
11	8.9	. .	8.0	23.5	. .	. .	. .	. .	24 38.66	8.61	IV.	4	7.59	18 57.4	19.8	24 30.05	35 57.2
12	8.9	34.8	50.5	6.2	. .	. .	. .	. .	27 21.43	8.62	IV.	7	9.28	33 45.7	19.3	27 12.81	50 45.0
13	8	. .	. .	48.3	. .	18.9	. .	. .	29 3.30	8.69	VI.	1	8.4	3 59.4	18.9	28 54.61	20 58.3
14	9	. .	. .	. .	. .	38.3	. .	9.0	30 22.83	8.68	VII.	5	7.26	23 40.4	18.6	30 14.15	40 39.0
15	9.10	. .	. .	. .	10.3	. .	40.8	. .	38 10.24	8.80	VII.	1	11.7	5 31.7	17.1	38 1.44	22 28.8
16	10	. .	. .	. .	50.7	. .	. .	. .	39 50.53	8.78	VI.	8	5.26	36 42.8	16.8	39 41.75	53 39.6
17	9	. .	31.1	. .	2.0	. .	. .	. .	43 1.86	8.83	V.	6	6.8	27 3.4	16.2	42 53.03	43 59.6
18	9	. .	. .	4.3	19.6	. .	. .	. .	44 19.41	8.86	VI.	4	4.19	17 5.8	16.0	44 10.55	34 1.8
19	8	. .	. .	. .	. .	48.3	. .	. .	46 32.82	8.92	VII.	1	8.25	4 9.7	15.6	46 23.90	21 5.3
20	7.8	. .	. .	51.6	7.2	. .	. .	. .	48 6.72	8.93	.	.	. .	. . .	15.3	47 57.79	
21	9	. .	. .	. .	. .	30.9	. .	. .	49 15.52	8.91	VI.	6	10.24	29 12.7	15.1	49 6.61	46 7.8
22	10	. .	. .	. .	. .	. .	19.0	. .	21 49 48.33	— 8.92	VII.	8	5.24	—36 41.5	— 15.0	21 49 39.41	— 35 53 36.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Sept. 14,	9	— 19.65	— 0.017	+ 0.497	— 0.319	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°
Zone 67	Sept. 14,	19 28	29.92	81.0	75.0
		19 55	29.91	81.0	75.0
Zone 68	Sept. 14,	21 1	29.91	80.5	75.0

REMARKS.

[(67.) The observing-book has the right ascension 18^h.]

ZONE 68. SEPTEMBER 14. K. $D_0 = -35° 16' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
23	9	. .	. .	. .	. .	22.5	. .	. .	21 51 7.13	— 8.93	VI.	7	6.4	—32 2.2	— 14.8	21 50 58.20	— 35 48 57.0
24	10	. .	. .	19.1	. .	. .	. .	. .	54 34.13	9.01	V.	3	6.20	13 7.1	14.1	54 25.12	30 1.2
25	9	. .	47.4	. .	. .	. .	. .	. .	56 18.31	9.00	IV.	8	5.59	36 59.7	13.8	56 9.31	53 53.5
26	9	. .	. .	. .	. .	. .	9.4	. .	56 38.73	9.01	VII.	8	4.54	36 26.3	13.8	56 29.72	53 20.1
27	9	. .	. .	6.9	. .	. .	. .	. .	21 58 22.37	— 9.02	V.	8	10.12	—39 7.7	— 13.5	21 58 13.35	— 35 56 1.2

ZONE 69. SEPTEMBER 14. K. $D_0 = -35° 16' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	. .	54.0	22 56 23.44	— 9.81	VII.	4	7.52	—18 53.2	— 1.4	22 56 13.63	— 35 35 34.6
2	8.9	. .	40.9	56.7	. .	. .	. .	. .	22 59 11.77	9.85	IV.	5	7.41	23 48.5	1.3	22 59 1.92	40 29.8
3	9	. .	10.2	25.8	. .	. .	. .	. .	23 1 40.94	9.89	IV.	5	4.49	22 21.4	1.2	23 1 31.05	39 2.6
4	10	. .	30.3	45.6	. .	. .	. .	. .	6 0.95	9.93	IV.	6	4.47	26 22.4	1.0	5 51.02	35 43 3.4
5	9	. .	1.8	17.0	32.8	. .	. .	. .	7 32.67	9.93	V.	10	1.22	44 41.6	0.9	7 22.74	36 1 22.5
6	10	. .	. .	. .	17.0	. .	. .	. .	12 16.83	10.02	IV.	2	8.3	8 59.2	0.8	12 6.81	35 25 40.0
7	9	28.8	44.3	. .	. .	. .	. .	. .	15 14.88	10.07	IV.	1	12.11	6 4.6	0.7	15 4.81	22 45.3
8	9	. .	. .	. .	. .	6.1	. .	. .	15 50.64	10.06	V.	2	7.41	8 48.0	0.7	15 40.58	25 28.7
9	9	. .	34.3	49.9	. .	. .	. .	. .	23 5.30	10.14	IV.	8	10.28	39 15.9	0.5	22 55.16	55 56.4
10	8	. .	. .	47.5	. .	. .	. .	. .	26 2.37	10.22	IV.	1	7.23	3 38.9	0.5	25 52.15	20 19.4
11	8.7	. .	. .	49.6	4.8	. .	. .	. .	27 4.84	10.19	IV.	8	7.52	37 56.9	0.5	26 54.65	54 37.4
12	9	. .	. .	41.5	. .	. .	. .	. .	32 56.56	10.30	IV.	3	9.38	14 47.4	0.5	32 46.26	35 31 27.9
13	9	. .	. .	. .	2.3	. .	. .	. .	34 2.13	10.27	V.	10	4.20	46 11.7	0.5	33 51.86	36 2 52.2
14	9	. .	12.6	. .	. .	. .	. .	. .	37 43.45	10.33	IV.	7	6.8	32 0.4	0.5	37 33.12	35 48 40.9
15	8	. .	29.7	. .	0.6	. .	. .	. .	44 0.38	10.44	IV.	3	9.30	14 43.3	0.6	43 49.94	31 23.9
16	9	. .	. .	. .	8.7	. .	. .	. .	52 8.53	10.51	V.	7	8.22	33 12.2	0.7	51 58.02	49 52.9
17	9.8	. .	58.5	. .	. .	. .	. .	. .	23 55 29.18	10.57	III.	4	6.14	18 4.2	0.8	23 55 18.61	34 45.0
18	8.9	. .	. .	3.6	18.8	. .	. .	. .	0 1 18.69	10.64	V.	5	2.14	21 3.0	1.0	0 1 8.05	37 44.0
19	8	. .	. .	. .	. .	. .	. .	21.0	1 34.92	10.63	VII.	8	9.39	38 50.5	1.0	1 24.29	55 31.5
20	6.7	. .	. .	. .	. .	35.3	. .	. .	3 19.90	10.67	V.	5	10.1	24 59.3	1.0	3 9.23	41 40.3
21	6	. .	. .	. .	. .	31.9	47.0	. .	0 4 16.42	— 10.65	VII.	9	5.21	—41 40.0	— 1.1	0 4 5.77	— 35 58 21.1

ZONE 70. SEPTEMBER 15. A. $D_0 = -26° 33' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	53.5	7.0	. .	. .	. .	. .	19 31 21.29	— 8.89	III.	7	5.33	—31 45.9	— 50.5	19 31 12.40	— 27 5 56.4
2	11	20.5	35.5	. .	. .	. .	. .	. .	33 3.11	8.89	II.	5	1.55	20 53.7	50.0	32 54.22	26 55 3.7
3	7	. .	. .	. .	. .	33.0	47.5	. .	33 19.27	8.91	VI.	3	7.2	13 29.6	49.9	33 10.36	47 39.5
4	8	. .	. .	41.0	55.2	. .	. .	. .	34 54.92	8.90	IV.	4	9.36	19 47.0	49.4	34 46.02	53 56.4
5	8	. .	. .	. .	. .	. .	50.0	4.0	35 21.95	8.91	VII.	3	9.33	14 45.7	49.3	35 13.04	26 48 55.0
6	9	. .	. .	. .	. .	57.0	11.3	. .	36 43.18	8.88	VI.	6	11.49	29 55.2	48.9	36 34.30	27 4 4.1
7	7	. .	. .	. .	. .	10.6	24.5	. .	37 56.58	8.89	VI.	4	4.26	17 10.3	48.5	37 47.69	26 51 18.8
8	8	. .	. .	. .	16.0	30.0	. .	. .	39 15.90	8.87	V.	6	6.50	27 24.3	48.1	39 7.03	27 1 32.4
9	6	35.8	49.9	. .	. .	. .	. .	. .	41 18.08	8.86	II.	7	4.38	31 18.0	47.5	41 9.22	27 5 25.5
10	9	. .	. .	39.0	53.3	. .	. .	. .	41 53.01	8.86	IV.	6	. .	. . .	. .	41 44.15	26 58 4.7
11	10	. .	54.5	9.0	. .	. .	. .	. .	43 22.76	8.86	III.	6	9.39	28 49.7	46.9	43 13.90	27 2 56.6
12	7	. .	. .	. .	. .	. .	8.0	21.9	43 39.99	8.84	VII.	8	10.10	39 4.6	46.8	43 31.15	13 11.4
13	6	. .	. .	. .	7.0	21.0	35.0	. .	45 6.97	8.85	VI.	7	3.45	30 51.2	46.4	44 58.12	27 4 57.6
14	5	. .	22.0	36.6	. .	. .	. .	. .	46 50.23	8.85	III.	5	5.8	22 31.3	45.9	46 41.38	26 56 37.2
15	8	. .	. .	. .	. .	29.3	43.5	. .	47 15.42	8.84	VI.	7	5.30	31 44.3	45.8	47 6.58	27 5 50.1
16	10	. .	. .	. .	. .	. .	42.0	56.0	19 48 14.03	— 8.84	VII.	7	9.13	—33 36.7	— 45.5	19 48 5.19	— 27 7 42.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
Sept. 15, 9	— 19.67	— 0.037	+ 0.497	— 0.319	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°
Zone 69	Sept. 14, 0 4	29.89	78.5	72.0
Zone 70	Sept. 15, 19 31	30.00	80.0	69.5
	20 7	30.07	74.7	56.5

REMARKS.

Zone 70. September 15. A. $D_{\circ}=-26^{\circ}\ 33'\ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
17	4	. .	. .	. .	57.0	. .	24.8	. .	19 49 56.92	— 8.87	VI.	1	3.56	— 1 56.7	— 45.0	19 49 48.05	— 26 36 1.7
18	10	. .	. .	40.5	54.5	. .	. .	. .	51 54.43	8.82	IV.	7	9.21	33 41.1	44.4	51 45.61	27 7 45.5
19	9	32.5	46.4	. .	. .	. .	. .	. .	54 14.65	8.83	II.	6	9.27	28 43.5	43.7	54 5.82	27 2 47.2
20	7	36.5	50.5	. .	. .	. .	. .	. .	55 18.51	8.85	II.	2	11.7	10 33.8	43.4	55 9.66	26 44 37.2
21	6	. .	. .	57.0	11.0	. .	. .	. .	56 10.97	8.80	IV.	8	11.45	39 53.0	43.2	56 2.17	27 13 56.2
22	9	. .	. .	58.0	11.5	. .	. .	. .	57 11.57	8.83	IV.	4	10.25	20 11.8	42.9	57 2.74	26 54 14.7
23	7	. .	. .	. .	. .	1.5	15.3	. .	57 47.42	8.83	VI.	4	5.31	17 43.3	42.7	57 38.59	51 46.0
24	9	. .	. .	. .	. .	. .	16.0	29.5	19 58 47.70	8.83	VII.	3	9.40	14 49.2	42.4	58 38.87	48 51.6
25	5	. .	. .	. .	. .	21.2	34.8	. .	20 0 7.04	8.84	VI.	1	10.21	5 11.1	42.0	19 59 58.20	39 13.1
26	9	. .	. .	. .	6.0	20.5	. .	. .	2 6.14	8.81	V.	4	6.35	18 15.6	41.4	20 1 57.33	52 17.0
27	9	. .	. .	. .	5.0	19.0	. .	. .	3 4.88	8.82	V.	3	7.47	13 52.5	41.2	2 56.06	47 53.7
28	9	15.5	30.0	. .	. .	. .	. .	. .	4 57.89	8.80	II.	5	7.31	23 43.4	40.6	4 49.09	57 44.0
29	10	. .	. .	. .	. .	55.0	8.5	. .	6 40.77	8.81	VI.	3	2.16	11 5.2	40.1	6 31.96	26 45 5.3
30	8	. .	. .	. .	. .	. .	24.0	38.5	6 56.29	8.76	VII.	9	2.35	40 14.3	40.1	6 47.53	27 14 14.4
31	10	. .	. .	. .	. .	49.5	4.0	. .	9 35.77	8.78	VI.	6	3.17	25 36.6	39.3	9 26.99	26 59 35.9
32	9	. .	. .	. .	37.0	51.0	. .	. .	10 36.88	8.80	V.	3	8.26	14 12.2	30.0	10 28.08	26 48 11.2
33	9	. .	. .	. .	. .	51.0	5.0	. .	12 37.02	8.75	VI.	8	10.30	39 15.0	38.5	12 28.27	27 13 13.5
34	8	. .	. .	. .	4.0	18.0	. .	. .	13 3.86	8.80	V.	1	11.3	5 32.4	38.3	12 55.06	26 39 30.7
35	8	. .	. .	. .	. .	. .	4.5	18.5	13 36.40	8.80	VII.	1	7.11	3 34.9	38.2	13 27.60	26 37 33.1
36	6	. .	. .	. .	. .	. .	. .	19.0	14 37.06	8.75	VII.	8	9.8	38 33.3	37.9	14 28.31	27 12 31.2
37	7	11.3	25.4	. .	. .	. .	. .	. .	16 53.55	8.76	II.	6	8.36	28 17.8	37.3	16 44.79	2 15.1
38	9	. .	7.5	21.5	. .	. .	. .	. .	17 35.55	8.75	III.	7	7.23	32 41.5	37.1	17 26.80	27 6 38.6
39	11	. .	. .	. .	. .	. .	10.5	25.0	17 42.73	8.76	VII.	5	7.57	23 56.3	37.1	17 33.97	26 57 53.4
40	8	. .	. .	. .	. .	. .	. .	23.5	18 41.17	8.77	VII.	2	5.11	7 33.8	36.8	18 32.40	26 41 30.6
41	8	. .	. .	13.0	27.2	. .	. .	. .	20 27.00	8.74	IV.	7	2.12	30 4.4	36.3	20 18.26	27 4 0.7
42	9	. .	. .	. .	. .	. .	37.5	52.0	21 9.71	8.76	VII.	4	4.58	17 26.2	36.1	21 0.95	26 51 22.3
43	10	. .	34.5	48.5	. .	. .	. .	. .	25 2.60	8.72	III.	8	5.38	36 47.6	35.1	24 53.88	27 10 42.7
44	8	. .	. .	. .	. .	. .	. .	3.0	25 20.70	8.76	VII.	2	9.21	9 40.0	35.0	25 11.94	26 43 35.0
45	8	56.0	11.0	. .	. .	. .	. .	. .	27 38.71	8.73	II.	6	10.9	29 4.7	34.4	27 29.98	27 2 59.1
46	8	. .	. .	. .	. .	. .	7.0	21.0	27 39.00	8.73	VII.	6	10.17	29 8.5	34.4	27 30.27	27 3 2.9
47	9	. .	. .	. .	. .	10.0	24.0	. .	28 56.02	8.73	VI.	5	5.35	22 44.8	34.0	28 47.29	26 56 38.8
48	9	. .	34.5	49.0	. .	. .	. .	. .	31 2.79	8.72	III.	7	4.5	31 1.5	33.4	30 54.07	27 4 54.9
49	6	. .	. .	30.3	44.5	. .	. .	. .	31 44.35	8.70	IV.	8	4.12	36 4.2	33.2	31 35.65	9 57.4
50	9	. .	50.0	4.0	. .	. .	. .	. .	33 17.99	8.72	III.	6	5.2	26 29.8	32.8	33 9.27	27 0 22.6
51	8	10.0	24.5	. .	. .	. .	. .	. .	34 52.29	8.74	II.	3	6.15	13 5.4	32.4	34 43.55	26 46 57.8
52	8	26.0	40.0	. .	. .	. .	. .	. .	36 8.03	8.73	II.	3	5.50	12 53.3	32.1	35 59.30	46 45.4
53	8	. .	4.0	18.5	. .	. .	. .	. .	37 32.06	8.73	III.	3	7.57	13 57.5	31.7	37 23.33	47 49.2
54	6	. .	3.0	17.2	. .	. .	. .	. .	38 31.04	8.70	III.	5	7.11	23 33.4	31.4	38 22.34	57 24.8
55	9	. .	. .	. .	. .	2.5	16.5	. .	38 48.52	8.71	VI.	4	8.18	19 7.5	31 4	38 39.81	52 58.9
56	7	. .	6.5	20.3	. .	. .	. .	. .	40 34.28	8.71	III.	4	8.40	19 18.7	30.9	40 25.57	53 9.6
57	9	32.5	47.0	. .	. .	. .	. .	. .	42 14.91	8.72	II.	3	5.48	12 52.3	30.5	42 6.19	46 42.8
58	9	. .	. .	. .	. .	. .	42.0	56.5	42 14.18	8.72	VII.	3	5.46	12 51.0	30.5	42 5.46	46 41.5
59	6	27.2	41.7	. .	. .	. .	. .	. .	45 9.54	8.70	II.	4	7.35	18 45.8	29.7	45 0.84	52 35.5
60	8	. .	7.5	22.0	. .	. .	. .	. .	46 35.48	8.71	III.	2	3.25	6 40.6	29.3	46 26.77	40 29.9
61	5	18.7	32.5	. .	. .	. .	. .	. .	48 0.68	8.69	II.	4	5.30	17 42.6	29.0	47 51.99	51 31.6
62	8	19.5	34.0	. .	. .	. .	. .	. .	49 1.80	8.70	II.	3	9.4	14 31.2	28.7	48 53.10	48 19.9
63	9	. .	. .	18.5	33.0	. .	. .	. .	49 32.59	8.68	IV.	5	3.7	21 30.3	28.6	49 23.91	55 18.9
64	9	. .	. .	. .	. .	. .	48.0	2.5	57 20.16	8.69	VII.	3	3.24	11 39.3	26.6	57 11.47	26 45 25.9
65	9	3.5	18.0	. .	. .	. .	. .	. .	20 59 45.99	— 8.65	II.	7	7.2	—32 30.8	— 26.0	20 59 36.34	— 27 6 16.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

Zone 70. September 15. A. $D_0 = -26^\circ\ 33'\ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
66	8	. .	. .	. .	. .	1.0	15.0	. .	20 59 47.02	— 8.64	VI.	8	9.37	−38 48.2	— 26.0	20 59 38.38	— 27 12 34.2
67	7	. .	. .	. .	. .	30.0	44.0	. .	21 1 16.03	8.68	VI.	3	4.33	12 14.4	25.7	21 1 7.35	26 46 0.1
68	8	. .	. .	. .	. .	. .	57.5	11.5	3 29.51	8.64	VII.	7	5.17	31 37.5	25.1	2 20.87	27 5 22.6
69	6	. .	. .	. .	. .	20.5	34.5	. .	4 6.53	8.62	VI.	9	12.	44 59.9	25.0	3 57.91	27 18 44.9
70	9	. .	. .	51.5	5.0	. .	. .	. .	6 5.02	8.66	IV.	3	4.20	12 8.0	24.5	5 56.36	26 45 52.5
71	9	. .	. .	. .	. .	8.0	22.0	. .	7 54.03	8.64	VI.	5	9.44	24 50.6	24.1	7 45.39	26 58 34.7
72	7	. .	. .	. .	. .	13.0	27.5	. .	8 59.27	8.62	VI.	7	7.36	32 47.9	23.8	8 50.65	27 6 31.7
73	7	. .	. .	. .	. .	22.5	36.5	. .	10 8.53	8.60	VI.	9	3.39	40 46.9	23.5	9 59.93	27 14 30.4
74	6	. .	. .	. .	. .	28.0	42.0	. .	11 14.03	8.63	VI.	5	8.39	24 17.8	23.3	11 5.40	26 58 1.1
75	8	. .	. .	17.0	31.0	. .	. .	. .	12 30.89	8.63	IV.	6	8.39	28 19.4	23.0	12 22.26	27 2 2.4
76	8	. .	. .	22.0	36.0	. .	. .	. .	16 35.76	8.64	IV.	3	3.45	11 20.0	22.0	16 27.12	26 45 2.0
77	7	. .	15.4	29.5	. .	. .	. .	. .	19 43.57	8.60	III.	8	7.16	37 37.1	21.3	19 34.97	27 11 18.4
78	11	25.7	40.0	. .	. .	. .	. .	. .	23 8.49	8.62	II.	5	7.49	23 52.3	20.5	22 59.87	26 57 32.8
79	9	. .	. .	. .	. .	. .	28.5	43.0	23 0.68	8.64	VII.	3	3.7	11 30.7	20.6	22 52.04	26 45 11.3
80	9	. .	. .	. .	. .	. .	54.0	8.5	25 26.28	8.60	VII.	8	5.20	36 38.2	20.0	25 17.68	27 10 18.2
81	9	. .	. .	8.0	22.0	. .	. .	. .	26 21.77	8.63	IV.	3	5.30	12 43.3	19.8	26 13.14	26 46 23.1
82	5	55.0	10.0	. .	. .	. .	. .	. .	27 37.57	8.62	II.	4	3.28	16 41.0	19.5	27 28.95	26 50 20.5
83	10	. .	. .	. .	55.0	9.0	. .	. .	28 54.92	8.59	V.	8	5.44	36 50.7	19.2	28 46.33	27 10 29.9
84	9	. .	. .	. .	. .	30.0	44.0	. .	30 16.03	8.62	VI.	4	9.3	19 30.2	18.9	30 7.41	26 53 9.1
85	8	. .	52.5	7.0	. .	. .	. .	. .	34 20.49	8.62	III.	2	4.18	7 7.4	18.1	34 11.87	40 45.5
86	8	. .	. .	. .	. .	6.4	20.0	. .	34 52.22	8.62	VI.	2	6.5	8 1.3	18.0	34 43.60	41 39.3
87	8	. .	. .	. .	20.5	34.5	. .	. .	36 20.40	8.60	V.	6	2.50	25 23.1	17.7	36 11.80	26 59 0.8
88	8	. .	. .	. .	16.0	30.0	. .	. .	38 15.94	8.56	V.	9	8.31	43 14.5	17.2	38 7.38	27 16 51.7
89	7	. .	33.5	47.0	. .	. .	. .	. .	40 1.17	8.59	III.	5	4.17	22 5.6	16.9	39 52.58	26 55 42.5
90	8	. .	12.5	27.0	. .	. .	. .	. .	41 40.64	8.60	III.	4	9.29	19 43.5	16.5	41 32.04	53 20.0
91	8	. .	. .	55.5	9.5	23.5	. .	. .	44 9.30	8.61	V.	2	9.9	9 34.3	16.0	44 0.69	26 43 10.3
92	9	. .	. .	. .	. .	53.0	7.0	. .	45 39.03	8.55	VI.	9	3.37	40 45.9	15.7	45 30.48	27 14 21.6
93	7	. .	9.0	23.0	. .	. .	. .	. .	48 37.11	8.56	III.	8	7.18	37 38.1	15.1	48 28.55	27 11 13.2
94	9	. .	. .	20.0	34.0	. .	. .	. .	50 33.78	8.60	IV.	3	7.35	13 46.5	14.7	50 25.18	26 47 21.2
95	11	. .	. .	6.0	20.5	. .	. .	. .	57 20.17	8.56	IV.	7	5.23	31 39.6	13.4	57 11.61	27 5 13.0
96	11	. .	. .	. .	. .	. .	4.5	19.0	21 58 36.79	8.55	VII.	8	7.25	37 41.3	13.2	21 58 28.24	11 14.5
97	10	. .	. .	. .	35.5	50.0	. .	. .	22 0 35.67	8.55	V.	8	4.31	36 13.8	12.8	22 0 27.12	9 46.6
98	7	56.6	11.4	. .	. .	. .	. .	. .	4 39.22	8.56	II.	7	2.45	30 20.9	12.1	4 30.66	27 3 53.0
99	7	26.5	. .	40.5	54.5	. .	. .	. .	6 54.30	8.58	II.	2	7.58	8 58.5	11.6	6 45.72	26 42 30.1
100	8	. .	. .	. .	55.0	8.9	. .	. .	22 7 54.86	— 8.56	V.	6	4.59	−26 28.3	— 11.5	22 7 46.30	— 26 59 59.8

Zone 71. September 16. K. $D_0 = -37^\circ\ 48'\ 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	16.6	. .	. .	. .	. .	. .	19 47 48.56	— 8.68	IV.	8	8.7	−38 5.8	— 42.4	19 47 39.88	— 38 26 58.2
2	7.8	. .	. .	11.0	27.0	. .	. .	. .	50 26.71	8.73	IV.	4	4.52	17 22.0	41.7	50 17.98	6 13.7
3	7	55.4	11.6	. .	. .	. .	. .	. .	53 43.45	8.75	III.	7	6.15	32 8.8	40.8	53 34.70	38 20 59.6
4	8.9	. .	. .	. .	. .	4.8	. .	. .	53 48.83	8.79	V.	2	4.58	7 23.9	40.8	53 40.04	37 56 14.7
5	8	. .	. .	. .	. .	. .	. .	0.9	54 13.16	8.76	VII.	6	7.18	27 38.4	40.7	54 4.40	38 16 29.1
6	10	. .	. .	. .	. .	10.1	. .	. .	19 55 54.18	8.80	VI.	4	8.30	19 12.2	40.2	19 55 45.38	8 2.4
7	11	. .	. .	. .	. .	20.1	. .	. .	20 7 4.15	8.93	VI.	3	3.51	11 50.3	37.3	20 6 55.22	0 37.6
8	9.10	. .	. .	. .	. .	34.9	. .	7.0	9 19.12	8.94	VII.	6	4.24	26 10.2	36.8	9 10.18	14 57.0
9	11	. .	. .	57.0	. .	. .	. .	. .	11 12.69	8.97	IV.	4	13.59	21 59.2	36.3	11 3.72	10 45.5
10	10	. .	. .	. .	37.8	. .	. .	. .	20 12 37.63	— 8.99	IV.	6	6.58	−27 28.9	— 36.0	20 12 28.64	— 38 16 14.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Sept. 16,	9	— 20.97	— 0.024	+ 0.394	— 0.190	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 71	Sept. 16,	19 47	30.10	71.5	61.5
		20 38	30.10	71.5	56.0
		0 2	30.09	70.5	51.0

REMARKS.

(70) 68. Minutes assumed as 2 instead of 3.
(70) 76. Micrometer reading assumed as 2^r.45 instead of 3^r.45.

ZONE 71. SEPTEMBER 16. K. D_0=—37° 48′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
11	11	. .	. .	44.9	. .	. .	. .	. .	20 14 0.35	— 9.03	IV.	2	8.13	— 9 2.7	— 35.6	20 13 51.32	— 37 57 48.3
12	10	. .	. .	. .	. .	. .	42.4	. .	14 10.87	9.03	VI.	2	9.40	9 46.6	35.6	14 1.84	58 32.2
13	7	. .	. .	3.0	18.7	. .	. .	. .	17 18.44	9.07	IV.	1	8.44	4 18.0	34.8	17 9.37	37 53 2.8
14	10	. .	. .	. .	9.4	. .	. .	. .	21 9.23	9.08	V.	5	10.6	25 1.8	33.8	21 0.15	38 13 45.6
15	10	. .	. .	. .	. .	20.0	. .	. .	22 4.13	9.08	V.	8	5.20	36 41.0	33.6	21 55.05	38 25 24.6
16	9	. .	. .	. .	. .	. .	53.3	. .	27 21.81	9.20	VI.	1	10.53	5 23.1	32.3	27 12.61	37 54 5.4
17	10	. .	8.9	25.0	. .	. .	. .	. .	30 40.55	9.22	IV.	4	5.21	17 36.7	31.5	30 31.33	38 6 18.2
18	11	. .	. .	. .	3.4	. .	. .	. .	32 3.23	9.21	IV.	7	3.12	30 36.0	31.2	31 54.02	38 19 17.2
19	10	. .	. .	. .	55.0	. .	. .	. .	38 54.83	9.35	VI.	1	11.56	5 55.0	29.6	38 45.48	37 54 34.6
20	5.6	. .	. .	15.0	31.1	47.2	. .	. .	41 31.09	9.33	V.	8	10.36	39 21.2	29.0	41 21.76	38 28 0.2
21	10	. .	. .	. .	. .	19.1	. .	. .	47 3.12	9.46	IV.	1	11.11	5 32.5	27.8	46 53.66	37 54 10.3
22	10	. .	. .	. .	. .	37.0	. .	. .	55 21.07	9.53	VI.	4	7.4	18 28.6	26.0	55 11.54	38 7 4.6
23	9	12.8	29.1	. .	. .	. .	. .	. .	57 0.73	9.55	III.	5	4.48	22 20.6	25.7	56 51.18	10 56.3
24	10	. .	. .	. .	. .	. .	50.4	. .	57 18.79	9.55	VII.	5	2.29	21 9.6	25.6	57 9.24	9 45.2
25	7.8	. .	. .	41.3	57.8	. .	. .	. .	20 59 57.51	9.56	VI.	9	9.7	43 36.5	25.0	20 59 47.95	32 11.5
26	8.9	. .	49.1	5.2	. .	. .	. .	. .	21 14 21.02	9.78	IV.	7	8.40	33 22.2	22.2	21 14 11.24	21 54.4
27	5	. .	36.9	. .	. .	. .	. .	. .	17 8.88	9.82	IV.	8	11.36	39 51.7	21.6	16 59.06	28 23.3
28	9.10	. .	12.7	28.8	. .	. .	. .	. .	19 44.30	9.89	IV.	3	9.18	14 36.3	21.1	19 34.41	3 7.4
29	9	. .	. .	25.7	41.3	. .	. .	. .	20 41.35	9.87	VI.	7	5.56	31 58.8	20.9	20 31.48	20 29.7
30	11	. .	. .	. .	. .	. .	52.2	. .	30 20.48	10.01	VII.	6	11.12	29 37.1	19.1	30 10.47	18 6.2
31	10	. .	. .	46.1	. .	. .	. .	. .	33 2.00	10.04	IV.	7	9.40	33 52.6	18.6	32 51.96	22 21.2
32	2.3	. .	. .	44.2	0.3	16.2	. .	. .	45 0.05	10.23	IV.	3	11.19	15 37.6	16.5	44 49.82	38 4 4.1
33	4.5	. .	58.9	14.9	. .	. .	. .	. .	47 30.35	10.27	IV.	2	8.41	9 16.9	16.0	47 20.08	37 57 42.9
34	8.9	. .	. .	. .	. .	24.0	. .	. .	48 8.14	10.23	VI.	8	9.52	38 58.7	15.9	47 57.91	38 27 24.6
35	8.9	. .	. .	. .	. .	. .	. .	55.9	48 8.22	10.24	VII.	7	9.23	33 43.4	15.9	47 57.98	38 22 9.3
36	10	. .	. .	26.6	. .	. .	. .	. .	50 42.08	10.32	V.	2	11.18	10 36.4	15.5	50 31.76	37 59 1.9
37	9	. .	. .	. .	. .	24.2	. .	. .	21 53 8.22	10.36	VI.	1	10.37	5 15.0	15.1	52 57.86	37 53 40.1
38	9	. .	31.2	47.3	. .	. .	. .	. .	22 0 3.28	10.43	IV.	9	6.22	42 13.2	14.0	21 59 52.85	38 30 37.2
39	8	. .	. .	32.7	48.8	. .	. .	. .	1 48.67	10.47	V.	9	2.52	40 26.6	13.7	22 1 38.20	28 50.3
40	9	. .	. .	24.3	40.3	. .	. .	. .	4 40.08	10.51	V.	5	9.54	24 55.7	13.3	4 29.57	13 19.0
41	11	. .	. .	. .	. .	2.2	. .	. .	13 46.29	10.65	VI.	5	5.55	22 54.4	11.9	13 35.64	11 16.3
42	8	. .	. .	6.2	22.0	. .	. .	. .	34 21.83	10.95	V.	4	8.38	19 16.5	9.2	34 10.88	7 35.7
43	8	. .	. .	. .	. .	. .	10.4	. .	34 38.60	10.94	VI.	8	9.38	38 51.6	9.2	34 27.66	27 10.8
44	7.8	. .	. .	27.4	. .	59.7	. .	. .	39 43.67	11.02	V.	9	10.57	44 32.5	8.6	39 32.65	32 51.1
45	11	. .	. .	53.2	. .	. .	. .	. .	42 8.99	11.06	VI.	6	4.30	26 13.7	8.3	41 57.93	14 32.0
46	11	. .	. .	35.0	. .	. .	. .	. .	50 50.59	11.20	VI.	3	13.17	16 37.1	7.4	50 39.39	4 54.5
47	10	. .	16.9	. .	. .	. .	. .	. .	52 48.58	11.23	IV.	4	12.56	21 27.3	7.2	52 37.35	9 44.5
48	10	. .	. .	. .	. .	. .	35.6	. .	53 3.80	11.21	VI.	8	9.29	38 47.1	7.2	52 52.59	38 27 4.3
49	9	. .	. .	. .	51.2	. .	. .	. .	54 51.03	11.27	IV.	1	11.45	5 49.7	7.0	54 39.76	37 54 6.7
50	10	. .	. .	. .	. .	38.2	. .	. .	22 59 22.22	11.33	V.	1	8.46	4 18.9	6.6	22 59 10.89	52 35.5
51	8	. .	. .	51.0	. .	. .	. .	. .	23 8 6.43	11.46	IV.	2	5.51	7 50.8	5.8	23 7 54.97	37 56 6.6
52	11	. .	. .	. .	59.0	. .	. .	. .	12 58.83	11.50	VI.	9	6.20	42 11.9	5.4	12 47.33	38 30 27.3
53	7.8	. .	59.1	. .	. .	. .	. .	. .	16 30.62	11.57	III.	3	6.20	13 6.0	5.2	16 19.05	1 21.2
54	10	. .	. .	. .	. .	30.3	. .	. .	33 14.36	11.82	VI.	3	11.58	15 57.1	4.1	33 2.54	4 11.2
55	9	. .	. .	. .	. .	. .	. .	43.1	33 55.36	11.82	VII.	6	7.13	27 35.9	4.0	33 43.54	15 49.9
56	8.9	. .	. .	10.3	. .	. .	. .	. .	42 25.98	11.95	IV.	4	12.55	21 26.8	3.6	42 14.03	9 40.4
57	9	. .	. .	14.4	. .	46.3	. .	. .	47 30.25	12.01	V.	5	7.20	23 37.7	3.4	47 18.24	38 11 51.1
58	9	. .	. .	. .	21.5	. .	. .	. .	50 21.33	12.07	V.	2	5.45	7 47.7	3.2	50 9.26	37 56 0.9
59	8.7	37.5	. .	9.7	. .	. .	. .	. .	23 54 25.28	— 12.12	V.	3	11.10	—15 33.0	— 3.1	23 54 13.16	— 38 3 46.1

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

Zone 71. September 16. K. D$_0$ = —37° 48′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
60	10	. .	. .	. .	. .	. .	15.1	. .	23 56 43.52	— 12.15	VI.	4	4.48	—17 19.7	— 3.0	23 56 31.37	— 38 5 32.7
61	9	. .	. .	. .	. .	15.6	. .	47.2	23 57 59.53	12.17	VII.	4	10.5	20 0.0	3.0	23 57 47.36	8 13.0
62	9.10	. .	. .	. .	17.6	33.3	. .	. .	0 2 17.40	— 12.23	VII.	4	11.27	—20 41.6	— 2.9	0 2 5.17	— 38 8 54.5

Zone 72. September 19. A. D$_0$ = —30° 18′ 30″.

1	9	. .	. .	8.5	23.5	. .	. .	. .	19 32 23.22	— 10.39	IV.	8	8.15	—38 7.5	— 11.6	19 32 12.83	— 30 56 49.1
2	9	. .	. .	. .	. .	. .	. .	27.5	32 43.80	10.43	VII.	5	3.9	21 30.7	11.5	32 33.37	40 12.2
3	8	. .	. .	. .	49.5	4.8	. .	. .	35 49.77	10.46	V.	4	2.48	16 20.6	10.8	35 39.31	30 35 1.4
4	7	. .	. .	9.0	23.8	. .	. .	. .	37 23.66	10.43	IV.	9	8.4	43 5.1	10.4	37 13.23	31 1 45.5
5	7	2.7	17.9	. .	. .	. .	. .	. .	39 46.76	10.48	II.	6	7.25	27 41.9	9.9	39 36.28	30 46 21.8
6	7	. .	57.2	11.5	. .	. .	. .	. .	40 26.00	10.50	III.	4	9.26	19 41.8	9.8	40 15.50	38 21.6
7	9	. .	24.0	39.0	. .	. .	. .	. .	43 53.18	10.52	III.	5	3.39	21 46.2	9.0	43 42.66	40 25.2
8	8	. .	. .	. .	. .	25.5	40.0	. .	44 11.02	10.54	VI.	4	10.16	20 6.9	8.9	44 0.48	38 45.8
9	6	. .	3.0	17.7	. .	. .	. .	. .	47 32.27	10.53	III.	8	10.9	39 5.0	8.2	47 21.74	57 43.2
10	8	. .	. .	. .	. .	15.0	29.5	. .	48 0.52	10.57	VI.	4	4.8	17 0.9	8.1	47 49.95	35 39.0
11	5	. .	. .	. .	39.7	54.0	. .	. .	49 39.51	10.55	V.	8	7.6	37 32.5	7.7	49 28.96	56 10.2
12	9	. .	. .	4.0	18.5	. .	. .	. .	51 18.43	10.57	IV.	7	9.28	33 45.0	7.4	51 7.86	52 22.4
13	11	. .	. .	17.5	. .	. .	. .	. .	52 31.94	10.59	III.	6	7.41	27 50.2	7.1	52 21.35	46 27.3
14	9	. .	. .	. .	20.0	35.0	. .	. .	53 20.14	10.61	V.	5	8.0	23 58.2	6.9	53 9.53	42 35.1
15	8	. .	. .	. .	12.5	27.5	. .	. .	55 12.62	10.64	V.	4	2.40	16 16.6	6.5	55 1.98	30 34 53.1
16	7	. .	43.5	58.0	. .	. .	. .	. .	59 12.69	10.64	III.	9	4.57	41 27.0	5.7	59 2.05	— 31 0 2.7
17	8	. .	. .	. .	. .	59.0	13.5	. .	19 59 44.50	— 10.66	VI.	7	. .	—29	— 5.6	19 59 33.84	

Zone 73. September 19. A. D$_0$ = —34° 4′ 0″.

1	9	. .	51.0	6.5	. .	. .	. .	. .	20 8 21.34	— 10.43	III.	5	2.58	—21 25.3	— 42.9	20 8 10.91	— 34 26 8.2
2	11	. .	. .	. .	. .	14.5	29.5	. .	8 59.35	10.43	VI.	8	5.35	36 47.1	42.7	8 48.92	41 29.8
3	10	. .	. .	. .	31.5	46.5	. .	. .	13 31.37	10.46	V.	8	7.28	37 44.4	41.5	13 20.91	42 25.9
4	9	. .	. .	. .	. .	46.5	1.5	. .	14 31.36	10.48	VI.	7	8.29	33 15.5	41.2	14 20.88	37 56.7
5	8	. .	. .	. .	. .	5.0	20.0	. .	15 49.85	10.48	VI.	9	7.47	42 53.9	40.9	15 39.37	47 34.8
6	9	14.0	29.5	. .	. .	. .	. .	. .	19 59.82	10.55	II.	6	5.30	26 43.9	39.8	19 49.27	31 23.7
7	8	. .	. .	. .	7.5	23.0	. .	. .	21 7.61	10.55	V.	7	9.50	33 56.6	39.5	20 57.06	38 36.1
8	9	. .	48.5	3.5	. .	. .	. .	. .	25 19.75	10.61	III.	6	10.38	29 19.9	38.4	25 9.14	33 58.3
9	8	. .	. .	. .	. .	. .	58.8	14.5	25 28.84	10.63	VII.	4	12.0	20 58.8	38.4	25 18.21	25 37.2
10	7	. .	. .	. .	. .	. .	. .	5.2	26 19.84	10.61	VII.	7	9.13	33 37.4	38.2	26 9.23	38 15.6
11	8	. .	. .	. .	58.5	13.5	. .	. .	27 58.37	10.63	V.	8	3.41	35 49.6	37.8	27 47.74	40 27.4
12	8	. .	. .	. .	. .	32.0	47.0	. .	29 16.87	10.68	VI.	2	4.41	7 17.1	37.4	29 6.19	11 54.5
13	8	. .	. .	. .	52.5	7.5	. .	. .	31 52.34	10.68	V.	6	11.17	29 39.6	36.8	31 41.66	34 16.4
14	8	. .	. .	56.0	11.5	. .	. .	. .	32 11.23	10.67	IV.	7	8.24	33 13.2	36.7	32 0.56	37 49.9
15	11	. .	. .	. .	. .	. .	3.5	21.0	32 33.40	10.67	VII.	4	10.26	20 11.3	36.6	32 22.73	24 47.9
16	8	. .	. .	. .	. .	. .	23.0	38.0	33 52.74	10.69	VII.	8	9.45	38 53.3	36.3	33 42.05	43 29.6
17	9	. .	. .	13.5	28.5	. .	. .	. .	37 28.24	10.78	IV.	1	8.16	4 6.2	35.4	37 17.46	8 41.6
18	8	. .	. .	. .	48.0	3.0	. .	. .	39 47.78	10.82	V.	1	6.30	3 12.5	34.8	39 36.96	7 47.3
19	5	1.0	16.5	. .	. .	. .	. .	. .	40 46.61	10.81	II.	3	10.33	15 15.2	34.6	40 35.80	19 49.8
20	9	. .	. .	. .	. .	. .	6.5	21.5	40 36.19	10.80	VII.	5	7.59	23 57.1	34.6	40 25.39	28 31.7
21	8	8.2	23.5	. .	. .	. .	. .	. .	20 42 53.81	— 10.82	II.	5	3.52	—21 52.4	— 34.0	20 42 42.99	— 34 26 26.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Sept 19,	9	— 22.16	— 0.021	+ 0.394	— 0.190	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 72	Sept. 19,	19 32	30.17	71.5	64.2
		19 59	30.17	71.0	61.8
Zone 73	Sept. 19,	20 8	30.22	70.0	62.0
		23 59	30.22	65.0	57.0

REMARKS.

(73) 12. Differs 13^s.6 from Mural Zone of July 14.
(73) 32. Transit over T. VI assumed as recorded over T. VII.

ZONE 73. SEPTEMBER 19. A. $D_0 = -34° 4' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
22	10	1.8	17.5	. .	. .	. .	. .	. .	20 46 47.70	— 10.86	II.	6	10.13	—29 7.1	— 33.1	20 46 36.84	— 34 33 40.2
23	6	56.5	12.0	. .	. .	. .	. .	. .	47 42.31	10.87	II.	6	11.15	29 38.4	32.9	47 31.44	34 11.3
24	8	. .	. .	. .	49.0	4.0	. .	. .	49 48.81	10.93	V.	2	7.41	8 48.3	32.4	49 37.88	13 20.7
25	6	. .	. .	7.0	22.0	. .	. .	. .	50 21.76	10.94	IV.	2	3.42	6 47.5	32.2	50 10.82	11 19.7
26	9	. .	. .	24.0	39.0	. .	. .	. .	51 38.92	10.92	IV.	6	4.17	26 7.2	32.0	51 28.00	30 39.2
27	9	. .	. .	44.5	59.6	. .	. .	. .	52 59.53	10.93	IV.	7	7.0	32 30.7	31.7	52 48.60	37 2.4
28	8	. .	11.5	26.8	. .	. .	. .	. .	58 42.06	11.00	III.	9	8.18	43 9.7	30.8	58 31.06	47 40.0
29	8	. .	. .	. .	30.5	45.5	. .	. .	20 59 30.29	11.06	V.	1	6.59	3 27.2	30.1	20 59 19.23	7 57.3
30	9	54.0	10.0	. .	. .	. .	. .	. .	21 8 40.10	11.12	II.	7	7.49	32 55.2	28.0	21 8 28.98	37 23.2
31	10	. .	. .	. .	. .	. .	50.0	5.0	8 19.73	11.12	VII.	8	7.25	37 42.4	28.1	8 8.61	42 10.5
32	6	. .	. .	. .	. .	. .	. .	46.0	9 15.80	11.13	VII.	7	7.25	32 42.8	28.0	9 4.67	37 10.8
33	6	. .	. .	. .	. .	34.0	49.0	. .	10 18.85	11.15	VI.	6	4.19	26 8.00	27.7	10 7.70	30 35.7
34	10	. .	27.5	43.0	. .	. .	. .	. .	17 57.94	11.25	III.	6	9.44	28 52.6	26.0	17 46.69	33 18.6
35	10	. .	58.0	13.5	. .	. .	. .	. .	22 28.44	11.31	III.	6	8.32	28 16.2	25.0	22 17.13	32 41.2
36	5	. .	. .	5.5	20.8	. .	. .	. .	23 20.62	11.31	IV.	7	5.31	31 45.6	24.9	23 9.31	36 10.5
37	11	51.0	6.0	. .	. .	. .	. .	. .	25 36.48	11.36	II.	5	7.48	23 51.8	24.4	25 25.12	28 16.2
38	5	30.2	45.5	. .	. .	. .	. .	. .	30 15.74	11.43	II.	4	3.30	16 41.2	23.4	30 4.31	21 4.6
39	9	. .	. .	. .	. .	39.0	54.0	. .	30 23.86	11.43	VI.	4	10.11	20 4.0	23.4	30 12.43	24 27.4
40	11	13.0	28.0	. .	. .	. .	. .	. .	39 58.54	11.54	II.	6	8.4	28 1.8	21.4	39 47.00	32 23.2
41	8	. .	. .	45.0	0.0	. .	. .	. .	41 59.79	11.59	IV.	2	9.20	9 38.5	21.1	41 48.20	13 59.6
42	9	. .	27.5	43.0	. .	. .	. .	. .	42 58.00	11.57	III.	7	5.9	31 34.4	20.9	42 46.43	35 55.3
43	8	. .	. .	. .	. .	. .	18.5	33.5	45 48.12	11.64	VII.	2	11.35	10 46.2	20.3	45 36.48	15 6.5
44	9	. .	. .	51.0	6.0	. .	. .	. .	52 5.79	11.73	IV.	2	8.10	9 3.0	19.2	51 54.06	13 22.2
45	6	. .	. .	. .	. .	3.5	18.5	. .	52 48.35	11.71	VI.	6	9.9	28 34.7	19.0	52 36.64	32 53.7
46	8	7.5	23.0	. .	. .	. .	. .	. .	55 53.24	11.76	II.	5	9.6	24 31.3	18.4	55 41.48	28 49.7
47	9	. .	. .	56.5	11.5	. .	. .	. .	57 11.34	11.79	IV.	4	5.15	17 34.5	18.2	56 59.55	21 52.7
48	10	. .	. .	. .	. .	. .	59.5	. .	21 58 29.29	11.76	VI.	8	8.16	38 8.6	18.0	21 58 17.53	42 26.6
49	5	. .	. .	. .	. .	49.0	4.5	. .	22 0 34.09	11.80	VI.	9	6.11	42 5.3	17.6	22 0 22.29	46 22.9
50	5	. .	. .	. .	20.2	35.5	. .	. .	1 20.23	11.80	V.	9	3.25	40 41.5	17.5	2 8.43	44 59.0
51	8	0.0	15.5	. .	. .	. .	. .	. .	8 45.79	11.92	II.	6	8.1	28 0.3	16.2	8 33.87	32 16.5
52	9	29.5	45.0	. .	. .	. .	. .	. .	10 15.17	11.96	II.	4	9.5	19 30.6	16.0	10 3.21	23 46.6
53	7	50.2	5.5	. .	. .	. .	. .	. .	11 35.83	11.97	II.	5	4.20	22 6.6	15.7	11 23.86	26 22.3
54	8	55.0	11.0	. .	. .	. .	. .	. .	15 40.99	12.03	II.	5	9.6	24 31.3	15.1	15 28.96	28 46.4
55	11	. .	. .	. .	57.5	12.5	. .	. .	17 57.32	12.07	V.	4	7.58	18 56.9	14.7	17 45.25	23 11.6
56	9	. .	. .	. .	14.5	30.0	. .	. .	19 14.55	12.09	V.	3	2.40	11 16.1	14.5	19 2.46	15 30.6
57	7	. .	. .	. .	. .	33.5	48.5	. .	20 18.35	12.10	VI.	6	7.25	27 42.1	14.4	20 6.25	31 56.5
58	7	. .	. .	. .	. .	23.5	38.5	. .	21 8.36	12.11	VI.	7	7.25	32 43.1	14.2	20 56.25	36 57.3
59	9	. .	42.0	57.0	. .	. .	. .	. .	23 12.25	12.14	III.	7	7.31	32 46.3	13.9	23 0.11	37 0.2
60	8	38.2	54.0	. .	. .	. .	. .	. .	25 24.23	12.17	II.	7	11.0	34 31.8	13.6	25 12.06	38 45.4
61	11	. .	. .	. .	. .	46.5	1.5	. .	26 31.35	12.18	VI.	6	6.41	27 19.8	13.4	26 19.17	31 33.2
62	7	. .	14.5	29.5	. .	. .	. .	. .	29 44.44	12.25	III.	2	10.52	10 24.9	12.9	29 32.19	14 37.8
63	9	. .	. .	. .	49.5	5.0	. .	. .	34 49.57	12.30	V.	4	4.35	17 14.2	12.2	34 37.27	21 26.4
64	8	. .	. .	49.0	4.0	. .	. .	. .	48 4.01	12.45	IV.	8	4.57	36 28.1	10.5	47 51.56	40 38.6
65	11	. .	. .	. .	. .	26.0	41.0	. .	50 10.86	12.50	VI.	4	9.6	19 31.1	10.2	49 58.36	23 41.3
66	8	. .	51.5	7.0	. .	. .	. .	. .	52 21.94	12.52	III.	6	8.53	28 26.8	9.9	52 9.42	32 36.7
67	8	. .	. .	48.5	3.0	. .	. .	. .	22 54 3.07	12.56	IV.	3	8.5	14 0.6	9.8	22 53 50.51	18 10.4
68	7	5.2	20.7	. .	. .	. .	. .	. .	23 19 50.93	12.89	II.	5	5.52	22 53.2	7.1	23 19 38.04	27 0.3
69	8	45.5	1.0	. .	. .	. .	. .	. .	24 31.26	12.95	II.	6	4.0	25 58.4	6.7	24 18.31	30 5.1
70	8	23.0	38.7	. .	. .	. .	. .	. .	23 26 8.85	— 12.97	II.	5	10.28	—25 12.8	— 6.6	23 25 55.88	— 34 29 19.4

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1846. h. m.	in.	°	°

REMARKS.

(73) 32. Transit over T. IV assumed as recorded over T. VII.
(73) 50. Minutes of transit assumed as 2 instead of 1.

Zone 73. September 19. A. $D_0 = -34° 4' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
71	9	. .	. .	. .	38.5	54.0	. .	. .	23 29 38.59	— 13.02	V.	6	3.40	—25 48.4	— 6.3	23 29 25.57	— 34 29 54.7
72	7	. .	11.8	27.0	. .	. .	. .	. .	31 41.90	13.05	III.	3	10.23	15 10.3	6.1	31 28.85	19 16.4
73	10	. .	. .	. .	39.0	. .	. .	. .	33 38.83	13.08	IV.	4	9.43	19 50.1	6.0	33 25.75	23 56.1
74	8	. .	43.0	58.5	. .	. .	. .	. .	36 13.20	13.11	III.	3	3.1	11 26.7	5.8	36 0.09	15 32.5
75	9	36.0	51.5	. .	. .	. .	. .	. .	43 21.67	13.20	II.	4	8.40	19 18.0	5.3	43 8.47	23 23.3
76	7	. .	. .	. .	. .	30.0	44.5	. .	44 14.61	13.21	VI.	3	6.32	13 13.3	5.3	44 1.40	17 18.6
77	9	26.0	41.0	. .	. .	. .	. .	. .	47 11.49	13.23	II.	5	8.22	24 9.0	5.1	46 58.26	28 14.1
78	8	. .	30.5	45.5	. .	. .	. .	. .	54 0.76	13.32	III.	7	8.55	33 28.8	4.8	53 47.44	37 33.6
79	9	. .	. .	. .	56.5	11.5	. .	. .	57 56.31	13.38	V.	4	2.5	15 58.3	4.6	57 42.93	20 2.9
80	9	. .	. .	. .	. .	. .	37.0	52.0	23 59 6.14	— 13.39	VII.	5	9.13	—24 34.5	— 4.5	23 59 52.75	— 34 28 39.0

Zone 74. September 21. K. $D_0 = -36° 28' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	. .	. .	. .	22.6	. .	. .	20 59 7.03	— 12.16	V.	10	10.32	—49 21.3	— 25.4	20 58 54.87	— 37 18 16.7
2	5	. .	. .	52.0	7.8	. .	. .	. .	21 4 7.64	12.22	V.	7	8.28	33 15.7	24.6	21 3 55.42	37 2 10.3
3	4.5	. .	. .	. .	. .	54.0	. .	. .	6 38.31	12.28	VI.	4	11.31	20 44.2	24.4	6 26.03	36 49 38.6
4	8.9	. .	. .	. .	. .	45.4	. .	. .	7 29.70	12.28	VI.	4	7.25	18 39.6	24.3	7 17.42	36 47 33.9
5	12	. .	. .	. .	. .	2.3	. .	. .	9 46.71	12.29	VI.	9	10.32	44 18.8	24.0	9 34.42	37 13 12.8
6	11	. .	. .	. .	43.7	. .	. .	. .	11 43.53	12.31	VI.	10	8.42	48 25.3	23.7	11 31.22	17 19.0
7	11	. .	. .	. .	41.2	. .	. .	. .	12 41.03	12.34	V.	7	10.12	34 8.4	23.5	12 28.69	3 1.9
8	11	. .	. .	. .	. .	. .	31.7	. .	13 0.49	12.34	VII.	7	9.34	33 48.6	23.5	12 48.15	2 42.1
9	10	. .	51.8	. .	. .	. .	. .	. .	18 23.26	12.41	V.	8	4.36	36 18.2	22.7	18 10.85	37 5 10.9
10	10	. .	. .	. .	. .	. .	22.2	. .	17 51.18	12.44	VII.	2	4.45	7 17.5	22.8	17 38.74	36 36 10.3
11	10	. .	59.9	. .	. .	. .	. .	. .	21 31.02	12.49	VII.	2	10.22	10 8.2	22.3	21 18.53	36 39 0.5
12	8	. .	. .	22.6	. .	. .	. .	. .	25 38.54	12.51	IV.	10	11.22	49 46.6	21.8	25 26.03	37 18 38.4
13	10	. .	. .	8.3	. .	. .	. .	. .	27 23.59	12.57	IV.	2	14.12	12 5.2	21.5	27 11.02	36 40 56.7
14	6.5	. .	. .	. .	. .	. .	32.8	. .	28 1.80	12.59	VII.	1	8.33	4 12.7	21.4	27 49.21	33 4.1
15	9	. .	. .	. .	24.3	. .	. .	. .	39 24.13	12.75	IV.	1	6.15	3 3.4	20.0	39 11.38	31 53.4
16	9	. .	28.6	. .	. .	15.1	. .	. .	42 59.54	12.80	VI.	2	10.22	10 8.5	19.6	42 46.74	38 58.1
17	8	. .	. .	. .	. .	. .	26.4	. .	43 55.33	12.82	VII.	3	6.30	13 11.1	19.5	43 42.51	42 0.6
18	8	. .	. .	. .	. .	. .	22.0	. .	44 51.00	12.83	VII.	1	6.41	3 16.0	19.4	44 38.17	32 5.4
19	7	. .	. .	. .	. .	. .	2.6	. .	45 31.51	12.82	VII.	4	4.11	17 1.0	19.3	45 18.69	45 50.3
20	10	. .	. .	. .	. .	35.0	. .	. .	47 19.31	12.85	IV.	4	12.43	21 20.9	19.1	47 6.46	50 10.0
21	11	. .	. .	46.8	. .	. .	. .	. .	50 2.24	12.89	III.	4	11.33	20 45.4	18.8	49 49.35	36 49 34.2
22	12	. .	. .	. .	. .	26.4	. .	. .	51 10.77	12.89	VI.	7	9.21	33 42.3	18.6	50 57.88	37 2 30.9
23	7	. .	. .	. .	. .	27.6	. .	. .	52 12.02	12.89	VI.	10	6.55	47 31.1	18.5	51 59.13	37 16 19.6
24	9	. .	. .	. .	. .	. .	18.4	. .	52 47.31	12.93	VII.	4	5.38	17 45.0	18.5	52 34.38	36 46 33.5
25	8	. .	. .	. .	. .	. .	15.8	. .	21 53 44.80	12.96	VII.	1	8.49	4 20.8	18.4	21 53 31.84	33 9.2
26	7	34.2	50.3	. .	. .	. .	. .	. .	22 0 21.45	13.03	III.	4	7.7	18 30.6	17.7	22 0 8.42	47 18.3
27	10	51.0	6.8	. .	. .	. .	. .	. .	1 38.02	13.07	III.	3	7.53	13 53.6	17.5	1 24.95	42 41.1
28	11	. .	16.2	32.2	. .	. .	. .	. .	2 47.50	13.07	IV.	4	5.52	17 52.7	17.4	2 34.43	46 40.1
29	10	. .	. .	. .	. .	53.6	. .	. .	3 37.93	13.09	VI.	5	11.8	25 33.0	17.4	3 24.84	54 20.4
30	10	. .	. .	59.2	. .	. .	. .	. .	6 14.74	13.11	VI.	6	6.8	27 3.2	17.1	6 1.63	55 50.3
31	10	. .	15.0	30.9	. .	. .	. .	. .	8 46.20	13.17	IV.	3	8.7	14 0.8	16.8	8 33.03	42 47.6
32	10	. .	. .	. .	26.7	. .	. .	. .	9 26.53	13.16	VI.	6	11.59	30 1.0	16.8	9 13.37	36 58 47.8
33	9	. .	. .	. .	. .	. .	9.0	. .	9 37.81	13.16	VII.	7	5.25	31 42.5	16.8	9 24.65	37 0 29.3
34	9	. .	33.9	. .	. .	. .	. .	. .	13 5.05	13.23	IV.	3	5.25	12 38.7	16.5	12 51.82	36 41 25.2
35	10	. .	. .	28.3	. .	. .	. .	. .	22 18 44.11	— 13.27	IV.	9	7.53	—42 58.5	— 16.0	22 18 30.84	— 37 11 44.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Sept. 21,	18	— 23.49	— 0.019	+ 0.215	+ 0.014	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°
Zone 74	Sept. 21,	20 59	30.08	72.0	62.0
		22 0	30.09	71.0	64.0

REMARKS.

ZONE 74. SEPTEMBER 21. K. $D_0 = -36° 28' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
36	10	. .	. .	36.7	52.6	. .	. .	. .	22 20 52.44	− 13.31	V.	8	8.36	−38 19.8	− 15.8	22 20 39.13	− 37 7 5.6
37	10	. .	. .	. .	. .	55.7	. .	. .	21 40.02	13.35	VI.	5	3.39	21 45.6	15.7	21 26.67	36 50 31.3
38	9	4.5	20.5	. .	. .	. .	. .	. .	23 51.60	13.39	III.	3	5.43	12 47.8	15.6	23 38.21	41 33.4
39	9	. .	. .	46.6	. .	. .	. .	. .	27 1.80	13.43	IV.	2	3.20	6 35.1	15.4	26 48.37	36 35 20.5
40	10	. .	. .	. .	10.2	. .	. .	. .	29 10.03	13.42	VI.	10	8.39	48 23.8	15.2	28 56.61	37 17 9.0
41	10	. .	. .	8.1	. .	. .	. .	. .	34 23.30	13.53	V.	2	3.29	6 39.6	14.8	34 9.77	36 35 24.4
42	10	. .	. .	. .	8.9	. .	. .	. .	35 8.73	13.56	VI.	3	3.14	11 32.2	14.8	34 55.17	40 17.0
43	10	20.8	36.7	. .	. .	. .	. .	. .	38 8.06	13.88	IV.	6	6.9	27 4.0	14.6	37 54.48	36 55 48.6
44	10	. .	31.5	47.2	. .	. .	. .	. .	42 2.94	13.63	V.	8	5.8	36 34.4	14.4	41 49.31	37 5 18.8
45	9	. .	. .	. .	. .	. .	. .	58.7	42 11.56	13.65	VII.	4	6.41	18 17.0	14.4	41 57.91	36 47 1.4
46	8.7	. .	. .	. .	. .	48.3	4.0	. .	43 32.76	13.67	VII.	3	4.30	12 10.3	14.3	43 19.09	40 54.6
47	10	. .	. .	. .	. .	1.0	16.1	. .	44 45.14	13.69	VII.	5	9.27	24 41.5	14.2	44 31.45	53 25.7
48	10	. .	. .	. .	. .	5.4	. .	. .	45 49.70	13.71	VII.	4	6.36	18 14.4	14.2	45 35.99	36 46 58.6
49	5.6	. .	. .	. .	1.7	17.1	32.8	. .	47 1.52	13.70	VII.	9	6.59	42 30.6	14.1	46 47.82	37 11 14.7
50	10	. .	2.4	. .	. .	. .	. .	. .	53 33.70	13.82	IV.	5	8.30	24 13.3	13.8	53 19.88	36 52 57.1
51	5	. .	. .	. .	25.3	. .	. .	. .	54 25.13	13.80	VI.	9	11.35	44 50.7	13.8	54 11.33	37 13 34.5
52	5	. .	57.0	. .	. .	. .	53.3	9.2	56 22.14	13.86	III.	3	8.55	14 25.0	13.7	56 8.28	36 43 8.7
53	8	. .	0.9	16.8	. .	. .	. .	. .	22 59 32.24	13.91	IV.	5	8.37	24 16.8	13.6	22 59 18.33	36 53 0.4
54	10	. .	. .	. .	. .	. .	27.3	. .	23 6 56.10	13.99	VI.	7	8.00	33 1.3	13.4	23 6 42.11	37 1 44.7
55	9	. .	. .	. .	38.3	. .	. .	. .	7 38.13	14.05	VI.	1	6.3	2 57.1	13.4	7 24.08	36 31 40.5
56	9	. .	. .	. .	. .	. .	33.7	. .	8 2.70	14.05	VI.	1	7.3	3 27.5	13.3	7 48.65	32 10.8
57	11	. .	. .	. .	48.2	. .	. .	. .	9 48.03	14.06	VI.	5	6.11	23 2.6	13.3	9 33.97	51 45.9
58	8.9	. .	. .	. .	28.7	. .	59.8	. .	11 28.54	14.07	VII.	6	8.21	28 10.3	13.2	11 14.47	56 53.5
59	10	. .	6.8	22.6	. .	. .	. .	. .	13 38.03	14.11	V.	4	9.16	19 36.0	13.2	13 23.92	48 19.2
60	10	. .	16.3	32.3	. .	. .	. .	. .	14 47.17	14.13	IV.	5	6.42	23 18.5	13.2	14 33.04	36 52 1.7
61	7.8	34.5	. .	6.2	21.8	. .	. .	. .	17 21.72	14.14	VI.	7	5.39	31 49.9	13.2	17 7.58	37 0 33.1
62	8.9	. .	. .	30.3	46.4	. .	. .	. .	23 46.13	14.24	V.	8	8.19	38 11.2	13.1	23 31.89	6 54.3
63	8.7	9.8	25.7	. .	. .	. .	. .	. .	25 57.20	14.26	III.	8	5.57	36 59.2	13.1	25 42.94	37 5 42.3
64	9.10	. .	. .	. .	. .	32.0	. .	. .	30 16.28	14.36	VI.	3	7.42	13 47.9	13.1	30 1.92	36 42 31.0
65	9	. .	15.5	. .	. .	. .	. .	. .	42 46.75	14.53	IV.	4	9.57	19 56.8	13.2	42 32.22	48 40.0
66	8	. .	. .	33.7	49.2	. .	. .	. .	43 49.09	14.54	VII.	5	6.14	23 3.8	13.3	43 34.55	51 47.1
67	11	. .	10.3	. .	. .	. .	. .	. .	52 41.54	14.67	III.	4	8.16	19 5.6	13.4	52 26.87	36 47 49.0
68	7.8	10.8	26.7	42.4	. .	. .	. .	. .	55 58.16	14.69	IV.	8	5.7	36 34.0	13.5	55 43.47	37 5 17.5
69	8	47.8	3.4	19.1	. .	. .	. .	. .	57 34.75	14.74	IV.	5	5.13	22 33.5	13.6	57 20.01	36 51 17.1
70	8.9	27.2	42.9	58.7	. .	. .	. .	. .	23 58 14.31	− 14.73	IV.	6	4.58	−26 28.1	− 13.6	23 57 59.58	− 36 55 11.7

ZONE 75. SEPTEMBER 22. A. $D_0 = -35° 8' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	37.6	53.3	. .	. .	. .	. .	19 57 8.22	− 12.52	III.	2	10.38	. . .	. .	19 56 55.70	
2	9	. .	16.5	32.0	. .	. .	. .	. .	57 47.05	12.52	III.	3	4.30	. . .	. .	57 34.53	
3	6	. .	. .	. .	39.0	54.5	. .	. .	58 38.92	12.54	V.	1	3.55	. . .	. .	58 26.38	
4	9	. .	. .	. .	54.0	10.0	. .	. .	19 59 54.22	12.53	V.	6	4.23	. . .	. .	19 59 41.69	
5	7	. .	. .	. .	. .	42.8	58.2	. .	20 0 27.49	12.52	VI.	8	4.53	. . .	. .	20 0 14.97	
6	9	. .	22.3	38.0	. .	. .	. .	. .	3 53.36	12.56	III.	8	11.16	. . .	. .	3 40.80	
7	10	3.5	19.2	. .	. .	. .	. .	. .	6 50.05	12.59	II.	7	9.54	. . .	. .	6 37.46	
8	6	. .	. .	. .	57.0	12.5	. .	. .	6 56.97	12.59	V.	6	11.10	. . .	. .	6 44.38	
9	8	. .	. .	. .	. .	. .	. .	57.0	7 10.71	12.60	VII.	4	10.41	. . .	. .	6 58.11	
10	10	. .	. .	. .	3.0	18.5	. .	. .	20 9 2.95	− 12.62	V.	4	9.23	. . .	. .	20 8 50.33	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Sept. 22,	18	− 23.39	− 0.023	+ 0.215	+ 0.014	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(74) 55. Differs by $3^s.9$ from Mural Zone, October 10.
(74) 60. Transit over T. II assumed as $15^s.3$ instead of $13^s.3$.

ZONE 75. SEPTEMBER 22. A. $D_0 = -35° 8' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
11	8	. .	. .	. .	. .	. .	. .	6.0	20 9 19.60	— 12.63	VII.	2	11.31	. . .	. .	20 9 6.97	
12	10	. .	. .	. .	12.0	27.5	. .	. .	11 11.97	12.63	V.	6	5.53	. . .	. .	10 59.34	
13	9	. .	51.5	7.0	. .	. .	. .	. .	13 21.95	12.67	III.	1	9.40	. . .	. .	13 9.28	
14	6	. .	. .	. .	18.5	34.0	. .	. .	14 18.47	12.66	V.	6	5.19	. . .	. .	14 5.81	
15	8	. .	. .	. .	. .	. .	. .	10.0	14 23.68	12.67	VII.	4	4.28	. . .	. .	14 11.01	
16	10	. .	. .	. .	18.5	34.0	. .	. .	16 18.45	12.69	V.	4	11.55	. . .	. .	16 5.76	
17	8	. .	. .	. .	. .	44.5	59.5	. .	17 28.98	12.68	VI.	9	9.42	. . .	. .	17 16.30	
18	8	. .	. .	8.0	23.0	. .	. .	. .	19 23.17	12.70	IV.	9	5.36	. . .	. .	19 10.47	
19	9	. .	. .	36.0	51.7	. .	. .	. .	20 51.52	12.72	IV.	9	5.18	. . .	. .	20 38.80	
20	8	. .	11.5	27.5	. .	. .	. .	. .	25 42.20	12.79	III.	1	9.40	. . .	. .	25 29.41	
21	12	. .	. .	30.0	45.5	. .	. .	. .	27 45.38	12.78	IV.	8	5.20	. . .	. .	27 32.60	
22	9	. .	. .	. .	14.0	29.0	. .	. .	29 13.75	12.79	V.	8	11.11	. . .	. .	29 0.96	
23	8	. .	. .	3.5	19.0	. .	. .	. .	30 18.88	12.80	IV.	8	6.6	. . .	. .	30 6.08	
24	8	. .	. .	. .	. .	. .	24.0	40.0	30 53.53	12.84	VII.	1	9.32	. . .	. .	30 40.69	
25	8	. .	. .	. .	. .	58.0	13.0	. .	32 42.52	12.86	VIII.	1	4.55	. . .	. .	32 29.66	
26	5	7.0	22.5	. .	. .	. .	. .	. .	35 53.43	12.87	II.	7	7.42	. . .	. .	35 40.56	
27	9	. .	. .	. .	. .	10.5	26.0	. .	35 55.24	12.86	VI.	8	9.39	. . .	. .	35 42.38	
28	7	10.5	26.4	. .	. .	. .	. .	. .	37 57.13	12.89	II.	7	6.48	. . .	. .	37 44.24	
29	8	. .	20.5	36.2	. .	. .	. .	. .	38 51.10	12.92	III.	2	6.52	. . .	. .	38 38.18	
30	12	. .	. .	. .	31.5	47.0	. .	. .	40 31.49	12.91	V.	8	3.21	. . .	. .	40 18.58	
31	9	. .	. .	. .	23.5	38.5	. .	. .	42 23.20	12.94	V.	3	11.17	. . .	. .	42 10.26	
32	8	. .	. .	. .	. .	. .	55.0	10.2	43 24.21	12.94	VII.	7	11.12	. . .	. .	43 11.27	
33	8	. .	. .	. .	. .	1.0	15.8	. .	20 44 45.41	— 12.96	VI.	5	11.19	. . .	. .	20 44 32.45	

ZONE 76. SEPTEMBER 22. A. $D_0 = -29° 2' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	34.5	49.0	. .	. .	. .	. .	21 26 3.17	-- 13.12	III.	7	3.22	—30 39.9	— 21.4	21 25 50.05	— 29 33 11.3
2	9	. .	. .	. .	. .	. .	33.0	48.0	26 4.58	13.13	VII.	6	5.48	26 52.7	21.4	25 51.45	29 24.1
3	6	43.2	58.0	. .	. .	. .	. .	. .	28 26.40	13.17	II.	3	8.14	14 5.7	21.0	28 13.23	16 36.7
4	10	. .	. .	. .	. .	41.0	55.0	. .	28 26.49	13.16	VI.	4	7.33	18 44.6	21.0	28 13.33	21 15.6
5	11	. .	. .	. .	. .	. .	0.5	15.0	34 31.80	13.24	VII.	4	8.4	19 0.0	19.9	34 18.56	21 29.9
6	7	18.1	32.8	. .	. .	. .	. .	. .	37 1.34	13.26	II.	5	4.28	22 10.0	19.5	36 48.08	24 40.4
7	9	24.0	38.5	. .	. .	. .	. .	. .	38 7.16	13.28	II.	5	8.0	23 58.0	19.3	37 53.88	26 27.3
8	9	. .	17.0	31.5	. .	. .	. .	. .	38 45.63	13.28	III.	6	7.39	27 49.1	19.2	38 32.35	30 18.3
9	8	. .	. .	11.5	25.5	. .	. .	. .	40 25.41	13.31	IV.	2	6.45	8 21.2	18.9	40 12.10	10 50.1
10	8	. .	. .	22.0	36.2	. .	. .	. .	41 36.04	13.33	IV.	3	3.25	11 39.9	18.7	41 22.71	14 8.6
11	9	28.8	43.2	. .	. .	. .	. .	. .	44 12.01	13.32	II.	7	8.17	33 8.8	18.2	43 58.69	35 37.0
12	8	. .	. .	. .	28.0	42.5	. .	. .	44 27.97	13.34	V.	5	10.37	25 17.5	18.2	44 14.63	27 45.7
13	10	. .	. .	. .	. .	. .	35.5	50.0	45 6.86	13.33	VII.	7	7.31	32 45.3	18.1	44 53.53	35 13.4
14	8	. .	. .	. .	. .	21.0	35.5	. .	46 6.74	13.35	VI.	7	2.0	29 58.3	17.9	45 53.39	32 26.2
15	7	. .	52.0	6.4	. .	. .	. .	. .	48 20.61	13.38	III.	6	10.7	29 3.9	17.6	48 7.23	31 31.5
16	6	40.8	55.2	. .	. .	. .	. .	. .	51 23.84	13.42	II.	4	5.16	17 35.4	17.1	51 10.42	20 2.5
17	8	. .	. .	. .	. .	. .	5.5	20.0	52 36.87	13.43	VII.	8	8.58	38 28.6	16.9	51 23.44	40 55.5
18	9	. .	. .	. .	. .	17.5	32.5	. .	53 3.49	13.44	VI.	6	7.10	27 34.3	16.8	52 50.05	30 1.1
19	9	. .	. .	25.5	40.0	. .	. .	. .	54 39.92	13.44	IV.	9	6.5	42 1.2	16.6	54 26.48	44 27.8
20	6	. .	49.2	4.0	. .	. .	. .	. .	56 17.72	13.49	III.	2	4.25	7 10.5	16.3	56 4.23	9 36.8
21	7	8.5	23.4	. .	. .	. .	. .	. .	57 51.85	13.51	II.	5	6.55	23 25.2	16.1	57 38.34	25 51.3
22	9	. .	. .	2.5	17.0	. .	. .	. .	21 58 16.79	— 13.50	IV.	6	3.58	—25 57.5	— 16.0	21 58 3.29	— 29 28 23.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(76) 7. Differs from Mural Zone, 1847, September 16, by $2^s.17$ in right ascension and 1′ 32″.5 in declination.
(76) 17. Minutes assumed as 51 instead of 52.

ZONE 76. SEPTEMBER 22. A. $D_0 = -29° 2' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
23	9	46.5	1.0	. .	. .	. .	. .	. .	22 5 29.64	— 13.59	II.	5	4.45	—22 19.5	— 15.0	22 5 16.05	— 29 24 44.5
24	10	38.0	53.0	. .	. .	. .	. .	. .	6 21.52	13.58	II.	7	10.48	34 25.1	14.8	6 7.94	36 49.9
25	8	38.3	53.0	. .	. .	. .	. .	. .	13 21.47	13.67	II.	6	10.19	29 9.8	13.9	13 7.80	31 33.7
26	8	14.5	29.4	. .	. .	. .	. .	. .	15 57.85	13.72	II.	5	7.16	23 35.8	13.5	15 44.13	25 59.3
27	8	58.0	12.5	. .	. .	. .	. .	. .	17 41.18	13.73	II.	6	4.46	26 21.6	13.3	17 27.45	28 44.9
28	7	. .	. .	. .	14.0	28.3	. .	. .	18 13.82	13.76	V.	1	8.8	4 3.5	13.2	18 0.06	6 26.7
29	11	. .	. .	17.0	31.5	. .	. .	. .	20 31.31	13.76	IV.	6	7.28	27 43.6	12.9	20 17.55	30 6.5
30	6	. .	. .	. .	13.8	28.3	. .	. .	21 13.76	13.77	V.	5	6.12	23 3.6	12.8	20 59.99	25 26.4
31	9	. .	43.5	58.0	. .	. .	. .	. .	24 12.05	13.81	III.	5	3.18	21 35.7	12.5	23 58.24	23 58.2
32	7	. .	. .	. .	. .	2.4	16.6	. .	24 47.97	13.79	VI.	9	7.33	42 45.5	12.4	24 34.18	45 7.9
33	9	. .	18.0	32.8	. .	. .	. .	. .	26 46.84	13.82	III.	7	5.32	31 45.6	12.2	26 33.02	34 7.8
34.	8	. .	. .	. .	36.0	50.5	. .	. .	27 35.94	13.87	V.	3	5.36	12 46.0	12.1	27 22.07	15 8.1
35	9	39.5	54.5	. .	. .	. .	. .	. .	29 22.97	13.85	II.	7	3.30	30 43.8	11.8	29 9.12	33 5.6
36	6	53.6	8.0	. .	. .	. .	. .	. .	30 36.76	13.88	II.	6	9.58	28 59.2	11.7	30 22.88	31 20.9
37	7	57.5	12.5	. .	. .	. .	. .	. .	31 41.03	13.88	II.	8	2.35	35 15.3	11.6	31 27.15	37 36.9
38	5	. .	. .	. .	. .	. .	. .	20.5	31 37.02	13.92	VII.	1	7.28	3 43.0	11.6	31 23.10	6 4.6
39	9	. .	. .	41.0	55.5	. .	. .	. .	34 55.27	13.94	IV.	5	5.32	22 43.4	11.2	34 41.33	25 4.6
40	8	. .	. .	44.5	58.0	. .	. .	. .	35 58.41	13.92	IV.	9	3.11	40 33.3	11.1	35 44.49	42 54.4
41	8	. .	29.8	44.2	. .	. .	. .	. .	39 58.24	14.00	III.	4	2.29	16 11.1	10.7	39 44.24	18 31.8
42	9	. .	. .	. .	46.5	1.0	. .	. .	41 46.47	14.02	V.	5	8.36	24 16.4	10.5	41 32.45	26 36.9
43	7	44.0	58.5	. .	. .	. .	. .	. .	45 27.01	14.06	II.	2	10.31	10 15.2	10.1	45 12.95	12 35.3
44	8	45.0	0.0	. .	. .	. .	. .	. .	48 28.39	14.09	II.	5	4.18	22 5.8	9.8	48 14.30	24 25.6
45	8	. .	14.0	29.0	. .	. .	. .	. .	50 42.59	14.14	III.	1	8.9	4 4.1	9.6	50 28.45	6 23.7
46	5	37.0	52.0	. .	. .	. .	. .	. .	53 20.55	14.13	II.	8	6.22	37 10.0	9.4	53 6.42	39 29.4
47	9	. .	. .	. .	. .	. .	38.5	52.5	57 9.53	14.20	VII.	3	9.20	14 38.8	9.0	56 55.33	16 57.8
48	9	58.2	13.0	. .	. .	. .	. .	. .	22 59 41.48	14.23	II.	5	3.9	21 31.0	8.8	22 59 27.25	23 49.8
49	5	. .	58.2	12.8	. .	. .	. .	. .	23 0 26.98	14.21	III.	8	3.14	35 35.0	8.8	23 0 12.77	37 53.8
50	6	. .	. .	59.0	13.5	. .	. .	. .	2 13.43	14.22	IV.	9	8.15	43 6.9	8.6	1 59.21	45 25.5
51	8	44.0	58.8	. .	. .	. .	. .	. .	5 27.16	14.29	II.	3	3.1	11 27.6	8.4	5 12.87	13 46.0
52	8	. .	. .	28.0	42.5	. .	. .	. .	6 42.21	14.32	IV.	3	8.3	14 0.3	8.3	6 27.89	16 18.6
53	7	6.4	20.8	. .	. .	. .	. .	. .	8 49.54	14.33	II.	6	7.20	27 39.4	8.1	8 35.21	29 57.5
54	5	. .	. .	6.0	20.2	. .	. .	. .	9 20.05	14.34	IV.	3	5.47	12 51.6	8.1	9 5.71	15 9.7
55	8	. .	. .	27.0	41.2	. .	. .	. .	10 41.07	14.36	IV.	3	10.34	15 16.6	8.0	10 26.71	17 34.6
56	6	. .	. .	. .	. .	. .	32.5	47.1	11 3.90	14.33	VII.	7	4.29	31 13.4	7.9	10 48.57	33 31.3
57	9	. .	. .	. .	. .	. .	. .	33.0	11 49.84	14.34	VII.	7	3.51	30 57.2	7.9	11 35.50	33 15.1
58	10	. .	. .	. .	. .	15.0	29.0	. .	13 0.49	14.36	VI.	6	3.19	25 37.6	7.8	12 46.13	27 55.4
59	7	58.4	13.0	. .	. .	. .	. .	. .	15 41.64	14.40	II.	6	6.47	27 22.7	7.6	15 27.24	29 40.3
60	8	. .	. .	. .	57.0	11.5	. .	. .	16 56.96	14.42	V.	5	4.7	22 47.9	7.6	16 42.54	25 5.5
61	9	. .	. .	27.8	42.3	. .	. .	. .	21 42.21	14.44	IV.	9	3.12	40 33.8	7.3	21 27.77	42 51.1
62	9	. .	. .	. .	47.5	1.5	. .	. .	24 47.26	14.48	V.	9	9.27	43 43.2	7.1	23 32.78	46 0.3
63	9	. .	4.5	19.5	. .	. .	. .	. .	25 33.38	14.51	III.	6	7.40	27 49.6	7.1	25 18.87	30 6.7
64	8	57.5	11.5	. .	. .	. .	. .	. .	27 40.49	14.53	II.	7	5.39	31 49.0	6.9	27 25.96	34 5.9
65	8	. .	. .	. .	. .	8.0	22.5	. .	27 53.74	14.53	VI.	8	9.8	38 33.9	6.9	27 39.21	40 50.8
66	8	. .	54.8	9.4	. .	. .	. .	. .	30 23.56	14.55	III.	7	8.8	33 4.4	6.8	30 9.01	35 21.2
67	7	. .	. .	58.8	12.5	. .	. .	. .	31 12.53	14.60	IV.	1	7.20	3 39.3	6.8	30 57.93	5 56.1
68	9	19.5	34.0	. .	. .	. .	. .	. .	37 2.75	14.63	II.	7	7.20	32 40.0	6.5	36 48.12	34 56.5
69	10	. .	. .	. .	57.0	12.0	. .	. .	38 57.23	14.66	V.	6	7.49	27 54.2	6.4	38 42.57	30 10.6
70	9	. .	. .	. .	12.0	26.5	. .	. .	39 11.99	14.65	V.	8	1.59	34 57.3	6.4	38 57.34	37 13.7
71	8	. .	. .	58.0	12.5	. .	. .	. .	23 42 12.16	— 14.71	IV.	2	6.45	— 8 21.2	— 6.3	23 41 57.45	— 29 10 37.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(76) 29. Differs in right ascension by $1^s.88$ from Mural Zone, 1847, September 16.
(76) 62. Minutes assumed as 23 instead of 24.

ZONE 76. SEPTEMBER 22. A. $D_\circ=-29^\circ\ 2'\ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
72	7	. .	. .	. .	23.0	37.5	. .	. .	23 44 22.93	— 14.73	V.	2	4.52	— 7 24.1	— 6.3	23 44 8.20	— 29 9 40.4
73	8	. .	. .	. .	. .	43.2	58.7	. .	. . .	. .	VI.	2	7.54	8 55.9			
74	8	. .	. .	. .	. .	. .	1.5	16.0	46 32.80	14.76	VII.	4	4.23	17 8.4	6.2	46 18.04	19 24.6
75	9	50.0	4.3	. .	. .	. .	. .	. .	51 33.09	14.80	II.	6	6.	26 59.0	6.1	51 18.29	29 15.1
76	10	. .	51.0	6.0	. .	. .	. .	. .	52 19.76	14.81	III.	4	6.4	17 59.8	6.0	52 4.95	20 15.8
77	6	10.6	25.0	. .	. .	. .	. .	. .	54 53.79	14.81	II.	7	5.0	31 29.3	6.0	54 8.98	33 45.3
78	8	13.0	27.5	. .	. .	. .	. .	. .	54 56.14	14.84	II.	5	4.12	22 2.8	6.0	54 41.30	24 18.8
79	7	. .	. .	57.0	11.5	. .	. .	. .	56 11.20	14.86	IV.	3	6.4	13 0.2	6.0	55 56.34	15 16.2
80	7	. .	. .	. .	. .	. .	55.0	10.0	23 56 26.52	— 14.86	VII.	3	3.0	—11 26.8	— 6.0	23 56 11.66	— 29 13 42.8

ZONE 77. SEPTEMBER 23. K. $D_\circ=-30^\circ\ 16'\ 30''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.	h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	11	. .	. .	51.2	5.8	. .	. .	. .	21 0 5.58	— 13.66	IV.	4	14.0	—15 46.3	— 14.0	20 59 51.92	— 30 32 30.3
2	5.6	. .	. .	. .	18.5	. .	47.5	. .	1 18.52	13.69	IV.	1	5.41	2 49.1	13.8	21 1 4.83	19 32.9
3	10	. .	. .	47.2	1.8	. .	. .	. .	5 1.67	13.71	V.	7	5.43	31 51.2	13.2	4 47.96	48 34.4
4	10	. .	. .	54.1	. .	. .	. .	. .	6 8.53	13.73	IV.	6	5.48	26 53.1	13.0	5 54.80	30 43 36.1
5	10	. .	. .	. .	. .	57.0	. .	. .	7 42.52	13.73	VI.	9	10.23	44 11.6	12.8	7 28.79	31 0 54.4
6	10	. .	. .	. .	. .	. .	. .	24.6	11 40.85	13.82	VII.	3	14.11	17 5.7	12.1	11 27.03	33 47.8
7	9	. .	. .	. .	. .	. .	28.7	. .	12 59.73	13.82	VII.	6	12.23	30 12.3	12.0	12 45.91	46 54.3
8	11	. .	. .	. .	. .	. .	42.7	. .	14 13.80	13.84	VI.	5	5.12	22 33.1	11.8	13 59.96	39 14.9
9	10	. .	33.3	. .	. .	. .	. .	. .	17 2.24	13.89	III.	3	7.47	13 52.1	11.3	16 48.35	31 30 33.4
10	9	. .	. .	. .	22.1	. .	. .	. .	17 21.94	13.88	IV.	4	5.14	17 34.4	11.3	17 8.06	30 34 15.7
11	5.6	. .	. .	27.8	. .	. .	. .	. .	20 42.54	13.90	IV.	10	6.5	47 3.0	10.8	20 28.64	31 3 43.8
12	10	. .	. .	. .	. .	38.0	. .	. .	21 23.46	13.92	VI.	6	11.9	29 35.2	10.7	21 9.54	30 46 15.9
13	9	36.4	51.3	6.2	20.8	. .	. .	. .	24 20.50	13.94	V.	7	4.31	31 14.8	10.3	24 6.56	47 55.1
14	9	. .	. .	12.0	26.8	40.9	. .	. .	25 26.49	13.96	VI.	6	9.3	28 31.5	10.1	25 12.53	45 11.6
15	11	. .	. .	. .	. .	16.2	. .	. .	26 1.65	13.98	VII.	5	11.35	25 46.4	10.0	25 47.67	42 26.4
16	6.7	. .	. .	28.5	43.0	57.3	. .	. .	30 42.94	14.00	VI.	9	5.59	41 58.2	9.4	30 28.94	58 37.6
17	9.10	. .	44.8	59.7	14.0	28.5	. .	. .	32 13.81	14.05	IV.	2	8.45	9 21.7	9.2	31 59.76	26 0.9
18	9.10	. .	. .	. .	28.5	. .	. .	. .	33 28.34	14.07	IV.	1	8.49	4 24.1	9.0	33 14.27	21 3.1
19	10	. .	. .	40.9	. .	9.8	. .	. .	37 55.05	14.13	IV.	1	6.51	3 24.4	8.4	37 40.92	20 2.8
20	11	. .	43.1	. .	12.7	27.1	. .	. .	41 12.45	14.13	IV.	7	6.12	32 5.9	8.0	40 58.32	48 43.9
21	10	. .	. .	. .	. .	15.5	29.9	44.6	42 0.95	14.15	VII.	5	8.10	24 2.8	7.9	41 46.80	30 40 40.7
22	7.8	. .	. .	. .	. .	41.8	56.0	10.3	44 27.06	14.15	VII.	9	10.53	44 26.5	7.6	43 12.91	31 1 4.1
23	10	. .	. .	. .	54.1	8.6	23.0	37.7	45 54.08	14.18	VII.	8	13.6	40 34.0	7.4	45 39.90	30 57 11.4
24	8.9	. .	. .	. .	. .	. .	21.5	36.3	46 52.62	14.20	VII.	6	7.41	27 49.8	7.3	46 38.42	44 27.1
25	11	. .	. .	52.3	6.4	. .	. .	. .	49 6.37	14.25	IV.	3	8.37	14 17.4	7.0	48 52.12	30 54.4
26	9	. .	. .	. .	. .	16.0	. .	45.0	50 1.28	14.26	VII.	2	10.52	10 25.4	6.9	49 47.02	27 2.3
27	8.9	. .	. .	. .	. .	31.3	45.8	0.5	51 16.82	14.26	VII.	5	10.20	25 8.5	6.7	51 2.56	41 45.2
28	7	6.5	21.3	36.0	50.2	4.3	. .	. .	54 50.13	14.31	VI.	4	11.49	20 53.9	6.3	54 35.82	37 30.2
29	6	. .	. .	44.3	. .	13.0	27.7	42.2	55 58.56	14.33	VII.	3	13.38	21 49.2	6.2	55 44.23	38 24.4
30	6.7	. .	. .	. .	29.2	43.7	58.0	. .	58 29.10	14.37	VI.	1	8.21	4 9.7	5.9	58 14.73	20 45.6
31	10	. .	. .	. .	47.0	. .	. .	. .	21 59 46.84	14.34	VII.	9	6.6	42 1.5	5.8	21 59 32.50	58 37.3
32	9	. .	. .	. .	. .	42.9	. .	11.7	22 1 28.28	14.37	VII.	8	3.19	35 37.4	5.6	22 1 13.91	52 13.0
33	10	. .	31.0	45.7	0.0	14.5	. .	. .	6 0.03	14.42	VI.	7	5.30	31 44.5	5.1	5 45.61	48 19.6
34	9	. .	. .	55.2	. .	23.9	. .	. .	8 9.26	14.49	IV.	1	5.57	2 57.2	4.9	7 54.77	19 32.1
35	9	. .	. .	. .	. .	. .	15.7	30.3	8 46.75	14.45	VII.	8	6.6	37 1.8	4.8	8 32.30	53 36.6
36	9.10	19.1	33.8	48.9	3.2	. .	. .	. .	22 12 2.90	— 14.52	IV.	3	3.25	—11 39.7	— 4.5	22 11 48.38	— 30 28 14.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.
Sept. 23, 18	— 24.45	— 0.010	+ 0.215	+ 0.014	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846 h. m.	in.	°	°

REMARKS.

(77) 22. Minutes assumed as 43 instead of 44.
(77) 29. Hor. thread assumed as 4 instead of 3.

ZONE 77. SEPTEMBER 23. K. D₀=−30° 16′ 30′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
37	8.9	. .	57.2	11.9	26.3	40.7	. .	. .	22 14 26.06	− 14.56	VI.	1	11.12	− 5 36.1	− 4.2	22 14 11.50	− 30 22 10.3
38	9	. .	. .	. .	. .	. .	45.8	. .	15 16.95	14.56	VII.	2	10.46	10 22.4	4.1	15 2.39	26 56.5
39	9	. .	. .	. .	47.4	1.7	15.9	. .	16 47.13	14.58	VII.	2	8.51	9 27.3	4.0	16 32.55	26 1.3
40	10	. .	44.6	59.3	. .	. .	. .	. .	19 13.91	14.57	IV.	9	8.2	43 0.6	3.8	18 59.34	59 34.4
41	7.8	14.9	29.8	44.6	59.3	13.6	28.3	42.7	20 59.05	14.61	VII.	6	8.42	28 20.6	3.6	20 44.44	44 54.2
42	9	. .	. .	. .	24.1	38.5	. .	7.3	22 23.90	14.61	VII.	8	6.34	37 16.0	3.5	22 9.29	53 49.5
43	11	. .	47.7	2.3	. .	. .	. .	. .	25 16.57	14.68	IV.	3	7.2	13 29.4	3.2	25 1.89	30 2.6
44	7.8	. .	. .	. .	. .	. .	51.1	6.1	25 22.26	14.68	VII.	2	9.11	9 34.4	3.2	25 7.58	30 26 7.6
45	8	. .	. .	21.7	. .	. .	. .	. .	27 36.46	14.67	III.	10	12.10	50 7.4	3.0	27 21.79	31 6 40.4
46	9	. .	48.9	3.8	18.3	32.4	. .	. .	29 18.05	14.71	IV.	6	7.39	27 49.2	2.9	29 3.34	30 44 22.1
47	10	. .	. .	. .	42.2	. .	. .	. .	31 42.04	14.76	VI.	3	12.45	16 7.4	2.7	31 27.28	32 40.1
48	8	. .	. .	. .	47.0	1.2	16.0	. .	33 46.85	14.75	VII.	7	6.12	32 5.5	2.5	33 32.10	30 48 38.0
49	9	. .	. .	. .	. .	5.8	20.5	34.8	34 51.40	14.76	VII.	10	6.44	47 22.3	2.4	34 36.64	31 3 54.7
50	9	. .	31.1	45.8	. .	. .	. .	. .	41 0.15	14.86	IV.	5	6.51	23 23.3	2.0	40 45.29	30 39 55.3
51	10	. .	. .	. .	. .	33.7	48.0	2.8	41 19.12	14.86	VII.	5	5.29	22 41.4	2.0	41 4.26	39 13.4
52	5	. .	50.1	4.3	19.2	. .	. .	. .	43 18.77	14.90	VI.	1	6.31	3 14.1	1.9	43 3.87	19 46.0
53	9	. .	. .	. .	30.8	. .	. .	. .	44 30.64	14.90	IV.	5	9.43	24 50.2	1.8	44 15.74	30 41 22.0
54	7	. .	. .	. .	. .	8.8	23.3	37.8	44 54.34	14.87	VII.	9	11.5?	44 32.6	1.8	44 39.47	31 1 3.4
55	7.8	. .	. .	5.0	19.1	33.6	48.0	. .	47 19.05	14.94	VI.	2	6.4	8 0.1	1.6	47 4.11	30 24 31.7
56	1	52.2	6.8	21.8	36.0	50.4	. .	. .	49 35.81	14.97	V.	2	6.57	8 24.0	1.5	49 20.84	24 55.5
57	10	. .	. .	24.0	38.7	53.2	. .	. .	53 38.48	15.00	VI.	4	7.55	18 55.6	1.3	53 23.48	35 26.9
58	10	. .	. .	. .	57.3	11.8	26.2	. .	54 57.22	15.02	VII.	5	6.4	22 59.1	1.2	54 42.20	30 39 30.3
59	8	. .	. .	. .	23.9	. .	. .	. .	56 23.74	15.00	IV.	10	10.3	49 3.3	1.1	56 8.74	31 5 34.4
60	5.6	18.2	33.1	47.8	2.7	17.0	31.3	. .	59 2.36	15.05	VII.	7	11.58	35 0.3	1.0	58 47.31	30 51 31.3
61	9	. .	. .	. .	. .	. .	. .	31.0	22 59 47.59	15.05	VII.	9	14.5	46 3.5	1.0	22 59 32.54	31 2 34.5
62	8	. .	. .	. .	11.7	26.1	40.7	55.0	23 1 11.58	15.10	VII.	8	12.25	40 13.3	0.9	23 0 56.48	30 56 44.2
63	5	. .	. .	40.4	. .	9.3	. .	. .	2 54.55	15.13	V.	1	7.14	3 36.0	0.8	2 39.42	20 6.8
64	9	. .	. .	. .	. .	. .	47.2	1.4	4 18.03	15.13	VII.	7	6.54	32 26.7	0.8	4 2.90	48 57.5
65	7.8	. .	57.2	. .	26.5	41.0	55.2	9.8	5 26.34	15.15	VII.	8	3.25	35 40.4	0.7	5 11.19	52 11.1
66	5.6	8.8	23.6	38.3	52.8	. .	. .	. .	7 52.63	15.17	IV.	5	6.38	23 16.8	0.6	7 37.46	39 47.4
67	9	. .	. .	45.7	0.0	14.4	28.8	. .	8 59.92	15.19	VI.	6	5.59	26 58.5	0.5	8 44.73	43 29.1
68	10	. .	. .	22.9	37.6	52.0	. .	. .	12 37.47	15.23	V.	8	7.00	37 29.5	0.5	12 22.24	54 0.0
69	7	57.4	12.3	26.8	41.4	55.8	10.3	24.8	17 41.31	15.29	VII.	7	8.39	33 19.8	0.3	17 26.02	49 50.1
70	9	. .	. .	46.8	0.9	15.6	. .	. .	20 0.86	15.33	IV.	1	8.15	4 6.9	0.2	19 45.53	20 37.1
71	11	46.0	0.9	15.6	30.3	. .	. .	. .	22 30.18	15.35	IV.	8	10.33	39 18.2	0.2	22 14.83	55 48.4
72	11	. .	. .	. .	. .	23.2	. .	52.2	28 8.62	15.42	VII.	6	10.21	29 10.6	0.1	27 53.20	45 40.7
73	10	. .	. .	. .	. .	5.9	. .	. .	30 44.49	15.45	VI.	8	8.49	38 24.4	0.1	30 29.04	54 54.5
74	9	. .	. .	55.8	. .	24.6	. .	. .	32 9.92	15.47	V.	1	10.16	5 8.0	0.1	31 54.45	21 38.1
75	8	41.8	56.8	11.7	25.7	40.0	. .	. .	34 25.59	15.50	V.	2	11.35	10 47.6	0.1	34 10.09	27 17.7
76	10	. .	. .	. .	. .	38.2	. .	. .	39 23.65	15.54	VII.	5	11.25	25 41.3	0.0	39 8.11	42 11.3
77	10	. .	. .	15.8	. .	45.0	59.2	. .	42 30.30	15.57	VII.	4	14.17	22 8.4	0.0	42 14.73	38 38.4
78	9	. .	. .	. .	. .	. .	16.8	. .	43 47.85	15.59	VII.	7	5.8	31 33.1	0.0	43 32.26	48 3.1
79	7	. .	. .	48.1	2.6	17.0	31.3	. .	49 2.36	15.66	VI.	1	8.20	4 9.2	0.1	48 46.70	20 39.3
80	9	. .	. .	59.0	. .	. .	. .	. .	51 13.05	15.68	IV.	1	7.23	3 40.6	0.1	50 57.37	20 10.7
81	4.5	. .	. .	. .	0.7	15.3	. .	. .	52 0.60	15.69	IV.	1	5.30	2 43.5	0.1	51 44.91	19 13.6
82	9	. .	59.3	13.8	28.6	. .	. .	. .	53 28.44	15.69	IV.	8	7.00	37 29.5	0.1	53 12.75	53 59.6
83	4.5	9.9	24.8	39.4	53.8	. .	. .	. .	54 53.67	15.71	IV.	4	3.49	16 51.5	0.2	54 37.96	33 21.7
84	9	. .	. .	. .	. .	43.8	. .	. .	55 29.31	15.71	VII.	9	7.21	42 39.4	0.2	55 13.60	59 9.6
85	8	. .	. .	32.0	46.8	. .	. .	. .	23 56 46.65	− 15.72	V.	9	5.30	−41 43.7	− 0.2	23 56 30.93	− 30 58 13.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1846.	h. m.	in.	°	°

REMARKS.

(77) 47. Micrometer reading assumed as 12ʳ.15 instead of 12ʳ.45.

Zone 77. September 23. K. $D_\circ = -30° 16' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
86	9.8	. .	. .	. .	. .	. .	54.8	. .	23 57 25.95	— 15.75	VII.	3	3.20	—11 36.7	— 0.2	23 57 10.20	— 30 28 6.9
87	10	. .	. .	41.4	55.2	. .	24.9	. .	0 3 55.56	15.82	VII.	3	4.12	12 3.0	0.4	0 3 39.74	28 33.4
88	9	. .	9.2	23.7	38.4	52.8	. .	. .	5 38.30	15.83	V.	8	6.14	37 6.2	0.4	5 22.47	53 36.6
89	9	. .	. .	. .	. .	. .	43.0	58.0	5 14.15	15.83	VII.	2	6.10	8 2.9	0.4	5 58.32	30 24 33.3
90	10	. .	. .	51.7	6.6	20.8	. .	. .	8 6.38	15.85	V.	9	9.22	43 40.9	0.5	7 50.53	31 0 11.4
91	9	39.6	54.3	8.8	23.7	. .	. .	. .	11 23.43	15.89	IV.	7	3.51	30 54.6	0.6	11 7.54	30 47 25.2
92	8.9	. .	10.0	. .	39.2	53.7	. .	. .	13 39.03	15.93	V.	3	9.22	14 40.1	0.7	13 23.10	31 10.8
93	7	22.9	37.7	52.4	7.0	21.3	35.5	50.4	16 6.73	15.95	VII.	5	8.25	24 0.4	0.8	15 50.78	40 31.2
94	9.10	16.5	. .	46.0	. .	15.4	. .	. .	20 0.34	16.00	VI.	2	6.30	8 13.3	1.0	19 44.34	24 44.3
95	4	. .	2.8	17.1	31.9	46.2	0.5	. .	26 31.57	16.07	VII.	2	3.17	6 35.5	1.4	26 15.50	23 6.9
96	10	. .	. .	37.8	. .	. .	20.8	. .	29 52.00	16.10	VII.	3	11.46	15 52.5	1.5	29 35.90	32 24.0
97	9	. .	. .	. .	. .	. .	22.0	. .	30 53.20	16.11	VI.	1	7.30	3 44.0	1.6	30 37.09	20 15.6
98	9	. .	. .	. .	26.3	40.5	54.7	9.8	33 25.99	16.12	VII.	5	4.28	22 10.5	1.8	32 9.87	38 42.3
99	9	. .	. .	. .	. .	. .	53.7	8.2	34 24.66	16.13	VII.	5	10.42	25 19.6	1.8	33 8.53	30 41 51.4
100	7	50.8	5.8	20.4	35.0	49.3	. .	. .	39 34.93	16.18	VI.	9	10.24	44 12.1	2.2	39 18.75	31 0 44.3
101	10	. .	19.9	. .	49.3	. .	. .	. .	46 49.14	16.25	V.	9	7.58	42 58.5	2.7	46 32.89	30 59 31.2
102	10	. .	. .	. .	. .	18.9	. .	. .	55 4.37	16.34	VII.	7	4.33	31 15.4	3.4	54 48.03	47 48.8
103	4.5	. .	. .	. .	24.3	38.6	53.0	. .	56 24.10	16.35	VII.	1	6.49	3 23.0	3.6	56 7.75	19 56.6
104	9	. .	. .	. .	36.0	. .	. .	19.5	0 57 35.80	— 16.36	VII.	4	9.19	—19 37.8	— 3.7	0 57 19.44	— 30 36 11.5
Zone 78. September 24. A. $D_\circ = -39° 4' 10''$.																	
1	7	34.2	50.4	. .	. .	. .	. .	. .	20 7 22.75	— 12.07	II.	5	7.55	—23 55.1	. .	20 7 10.68	
2	8	40.0	56.5	. .	. .	. .	. .	. .	8 28.66	12.09	II.	5	2.42	21 16.3	. .	8 16.57	
3	9	. .	. .	9.2	25.5	. .	. .	. .	10 25.55	12.07	IV.	10	6.46	47 29.2	. .	10 13.48	
4	9	. .	. .	33.5	49.6	. .	. .	. .	11 49.62	12.13	IV.	7	8.37	33 21.2	. .	11 37.49	
5	10	. .	. .	. .	. .	. .	25.0	41.0	13 52.56	12.13	VII.	9	3.35	40 48.8	. .	13 40.43	
6	9	37.0	53.5	. .	. .	. .	. .	. .	17 25.72	12.21	II.	5	10.12	25 4.6	. .	17 13.51	
7	10	. .	. .	. .	29.5	45.5	. .	. .	22 29.41	12.28	V.	6	7.19	27 39.7	. .	22 17.13	
8	6	. .	12.4	28.7	. .	. .	. .	. .	36 44.99	12.43	III.	9	3.51	40 57.5	. .	36 32.56	
9	10	18.5	35.0	. .	. .	. .	. .	. .	43 7.21	12.54	II.	5	8.45	24 20.5	. .	42 54.67	
10	7	. .	. .	. .	12.5	28.6	. .	. .	43 12.48	12.64	V.	8	5.21	36 42.2	. .	42 59.84	
11	8	. .	7.2	23.5	. .	. .	. .	. .	51 39.37	12.69	III.	3	11.4	15 29.4	. .	51 26.68	
12	7	43.2	59.8	. .	. .	. .	. .	. .	53 32.15	12.57	II.	8	6.23	37 13.5	. .	53 19.58	
13	5	. .	. .	. .	. .	51.0	7.0	. .	54 34.78	12.74	VI.	2	8.47	9 18.8	. .	54 22.04	
14	10	3.0	19.5	. .	. .	. .	. .	. .	57 51.75	12.75	II.	6	5.26	26 42.1	. .	57 39.00	
15	7	. .	. .	. .	. .	25.4	41.2	. .	20 58 9.07	— 12.77	VI.	3	8.4	—13 57.9	. .	20 57 56.30	
Zone 79. September 24. A. $D_\circ = -29° 2' 30''$.																	
1	8	21.0	35.4	. .	. .	. .	. .	. .	21 26 4.17	— 13.87	II.	7	3.0	—30 28.6	— 20.0	21 25 50.30	— 29 33 18.6
2	10	. .	. .	. .	. .	19.0	33.5	. .	26 4.74	13.87	VI.	6	5.32	26 44.8	20.0	25 50.87	29 34.8
3	7	. .	58.0	12.2	. .	. .	. .	. .	28 26.31	13.90	III.	3	7.57	13 59.8	19.6	28 12.41	16 49.4
4	10	. .	. .	. .	. .	. .	. .	10.0	28 26.70	13.90	VII.	4	7.25	18 40.0	19.6	28 12.80	21 29.6
5	11	. .	. .	. .	6.0	20.5	. .	. .	32 5.95	13.96	V.	4	5.37	17 46.1	19.0	31 51.99	20 35.1
6	7	18.5	33.2	. .	. .	. .	. .	. .	37 1.74	14.00	II.	5	4.12	22 2.8	18.2	36 47.74	24 51.0
7	10	. .	18.0	32.5	. .	. .	. .	. .	21 38 46.63	— 14.02	III.	6	7.23	—27 41.0	— 18.0	21 38 32.61	— 29 30 29.0

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
Sept. 24, 18	— 24.45	+ 0.004	+ 0.394	— 0.190	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(77) 89. Minutes assumed as 6 instead of 5.
(77) 98. Minutes assumed as 32 instead of 33.
(77) 99. Minutes assumed as 33 instead of 34.

ZONE 79. SEPTEMBER 24. A. $D_0 = -29° 2' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
8	8	. .	56.5	11.1	. .	. .	. .	. .	21 40 24.93	− 14.04	III.	2	6.32	− 8 14.7	− 17.7	21 40 10.89	− 29 11 2.4
9	9	29.8	44.0	. .	. .	. .	. .	. .	44 12.91	14.08	II.	7	8.28	33 14.3	17.1	43 58.83	36 1.4
10	9	. .	. .	. .	28.5	42.8	. .	. .	44 28.38	14.08	V.	6	10.43	29 22.1	17.1	44 14.30	32 9.2
11	6	. .	. .	. .	. .	27.5	41.7	. .	45 13.09	14.10	VI.	4	8.45	19 21.0	17.0	44 58.99	22 8.0
12	8	. .	. .	. .	. .	22.5	36.7	. .	46 8.10	14.10	VI.	6	11.40	29 50.7	16.9	45 54.00	32 37.6
13	7	38.4	53.0	. .	. .	. .	. .	. .	47	14.12	II.	6	9.48	28 54.2	16.7	47	31 40.9
14	6	. .	36.8	51.2	. .	. .	. .	. .	51 5.59	14.16	III.	9	9.5	43 32.1	16.1	50 51.43	46 18.2
15	8	. .	. .	. .	. .	. .	7.5	21.5	51 38.62	14.17	VII.	8	8.53	38 26.0	16.1	51 24.45	41 12.1
16	10	. .	. .	. .	. .	19.0	33.2	. .	53 4.59	14.19	VI	6	6.59	27 28.8	15.9	52 50.40	30 14.7
17	10	. .	. .	. .	. .	. .	32.0	46.5	54 3.30	14.18	VII.	4	8.22	19 9.2	15.8	53 49.12	21 55.0
18	10	. .	. .	. .	. .	. .	. .	41.0	54 57.66	14.20	VII.	3	11.46	15 52.6	15.6	54 43.46	18 38.2
19	5	. .	. .	. .	. .	. .	46.0	1.0	57 17.51	14.22	VII.	2	4.16	7 5.6	15.3	57 3.29	9 50.9
20	7	. .	. .	. .	52.9	7.0	. .	. .	21 58 52.66	14.23	V.	5	6.44	23 19.8	15.1	21 58 38.43	26 4.9
21	11	. .	. .	16.0	. .	. .	. .	. .	22 5 30.20	14.30	III.	5	4.8	22 1.0	14.2	22 5 15.90	24 45.2
22	9	. .	. .	. .	. .	37.0	51.2	. .	6 22.58	14.29	VI.	8	0.51	34 22.7	14.1	6 8.29	37 6.8
23	8	39.4	54.0	. .	. .	. .	. .	. .	13 22.66	14.39	II.	6	9.46	28 53.2	13.3	13 8.27	31 36.5
24	7	. .	. .	. .	59.0	13.0	. .	. .	16 58.71	14.43	V.	5	6.53	23 24.3	12.9	15 44.24	26 7.2
25	8	58.5	13.0	. .	. .	. .	. .	. .	17 41.68	14.45	II.	6	4.11	26 3.9	12.8	17 27.23	28 46.7
26	7	. .	. .	. .	. .	. .	24.0	38.6	17 55.47	14.42	VII.	10	8.2	48 1.4	12.8	17 41.05	50 44.2
27	6	31.2	46.0	. .	. .	. .	. .	. .	21 14.50	14.48	II.	5	5.59	22 56.9	12.4	21 0.02	25 39.3
28	9	. .	. .	. .	. .	27.2	41.5	. .	21 12.84	14.48	VI.	6	5.33	26 45.3	12.4	20 58.36	29 27.7
29	9	. .	. .	. .	. .	2.5	16.5	. .	26 47.99	14.54	VI.	7	5.15	31 36.8	11.8	26 33.45	34 18.6
30	8	. .	. .	. .	. .	. .	. .	19.2	27 35.82	14.57	VII.	3	5.26	12 40.6	11.8	27 21.25	15 22.4
31	10	. .	. .	. .	24.2	38.5	. .	. .	29 24.08	14.56	V.	7	3.20	30 38.8	11.6	29 9.52	33 20.4
32	5	. .	. .	. .	38.2	52.5	. .	. .	30 38.08	14.59	V.	6	10.1	29 0.9	11.5	30 23.49	31 42.4
33	7	. .	. .	. .	42.5	56.7	. .	. .	31 42.34	14.59	V.	7	11.54	34 58.6	11.4	31 27.75	37 40.0
34	7	12.0	27.0	. .	. .	. .	. .	. .	34 55.40	14.64	II.	5	5.9	22 31.6	11.1	34 40.76	25 12.7
35	9	. .	31.0	45.5	. .	. .	. .	. .	35 59.79	14.62	III.	9	2.59	40 27.1	11.0	35 45.17	43 8.1
36	8	. .	30.0	44.5	. .	. .	. .	. .	39 58.49	14.71	III.	4	2.21	16 7.1	10.6	39 43.78	18 47.7
37	9	. .	. .	33.0	47.5	. .	. .	. .	40 47.28	14.71	IV.	5	8.29	24 12.8	10.6	40 32.57	26 53.4
38	7	43.5	58.5	. .	. .	. .	. .	. .	45 26.76	14.78	II.	2	10.2	10 0.6	10.2	45 11.98	12 40.8
39	7	45.9	0.3	. .	. .	. .	. .	. .	48 28.98	14.78	II.	5	3.51	21 52.2	10.0	48 14.20	24 32.2
40	8	. .	14.0	28.2	. .	. .	. .	. .	50 42.18	14.85	III.	1	7.34	3 46.4	9.8	50 27.33	6 26.2
41	4	39.0	53.5	. .	. .	. .	. .	. .	53 22.30	14.83	II.	8	6.0	36 58.8	9.6	53 7.47	39 38.4
42	9	. .	13.2	27.5	. .	. .	. .	. .	22 59 41.65	14.93	III.	5	2.32	21 12.5	9.2	22 59 26.72	23 51.7
43	6	. .	. .	14.2	28.5	. .	. .	. .	23 0 28.47	14.91	IV.	8	2.57	35 26.6	9.2	23 0 13.56	38 5.8
44	8	. .	. .	0.5	15.0	. .	. .	. .	2 14.93	14.92	IV.	9	8.9	43 3.8	9.1	2 0.01	45 42.9
45	8	. .	. .	. .	. .	. .	. .	22.0	2 38.62	14.98	VII.	3	4.14	12 4.3	9.1	2 23.64	14 43.4
46	7	44.0	58.4	. .	. .	. .	. .	. .	5 26.96	15.01	II.	3	2.31	11 12.5	8.9	5 11.95	13 51.4
47	8	59.2	13.8	. .	. .	. .	. .	. .	6 42.29	15.02	II.	3	7.40	13 48.6	8.8	6 27.27	16 27.4
48	6	. .	21.8	36.0	. .	. .	11.0	25.5	50.27	15.04	III.	6	6.57	27 27.9	8.7	8 35.23	30 6.6
49	6	. .	. .	. .	. .	34.5	48.5	. .	9 19.99	15.05	VI.	3	5.7	12 31.3	8.7	9 4.94	15 10.0
50	10	. .	. .	. .	. .	39.0	53.5	. .	10 24.74	15.05	VI.	4	2.51	16 22.1	8.6	10 9.69	19 0.7
51	6	. .	. .	. .	. .	. .	44.4	59.0	11 15.71	15.07	VII.	3	0.0	9 55.9	8.6	11 0.64	12 34.5
52	9	. .	. .	. .	. .	15.0	30.5	. .	1.20	15.08	VI.	6	3.33	25 44.7	8.5	12 46.12	28 23.2
53	8	59.1	13.9	. .	. .	. .	. .	. .	15 42.44	15.10	II.	6	6.5	27 1.5	8.4	15 27.34	29 39.9
54	8	. .	. .	. .	51.8	12.0	. .	. .	57.62	15.10	V.	5	3.57	21 55.4	8.4	15 42.52	24 33.8
55	7	. .	. .	10.2	24.2	. .	. .	. .	21 24.07	15.19	IV.	1	5.35	2 46.4	8.2	21 8.88	5 24.6
56	9	. .	. .	. .	. .	3.2	17.5	. .	23 23 48.84	− 15.16	VI.	9	9.23	−43 41.0	− 8.1	23 23 33.68	− 29 46 19.1

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(79) 24. Minutes assumed as 15 instead of 16.
(79) 48. Transit over T. VI rejected. Minutes assumed as 8.
(79) 52. Minutes of transit assumed as 13.
(79) 54. Transit over T. IV assumed as 57^s instead of 51^s, and minutes as 15.

Zone 79. September 24. A. $D_0 = -29° 2' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
57	9	. .	. .	20.0	34.5	. .	. .	. .	23 25 34.31	— 15.21	IV.	6	7.38	—27 48.7	— 8.1	23 25 19.10	— 29 30 26.8
58	8	58.5	13.0	. .	. .	. .	. .	. .	27 41.74	15.22	II.	7	5.9	31 33.8	8.0	27 26.52	34 11.8
59	10	. .	. .	47.5	2.0	. .	. .	. .	28 1.80	15.23	IV.	6	4.32	26 14.7	8.0	27 46.57	28 52.7
60	9	. .	. .	. .	24.8	39.0	. .	. .	30 24.64	15.25	V.	7	8.1	33 0.8	7.9	30 9.39	35 38.7
61	8	. .	. .	. .	. .	26.5	40.5	. .	31 11.99	15.30	VI.	1	7.5	3 31.6	7.9	30 56.69	6 9.5
62	7	. .	. .	. .	37.6	52.0	. .	. .	32 37.48	15.31	V.	2	7.18	8 37.9	7.9	32 22.17	11 15.8
63	7	. .	. .	. .	26.0	40.5	. .	. .	35 26.02	15.29	V.	10	11.52	49 58.0	7.8	35 10.73	52 35.8
64	8	. .	. .	49.5	4.0	. .	. .	. .	37 3.84	15.32	IV.	7	6.48	32 24.0	7.8	36 48.52	35 1.8
65	9	. .	44.5	59.2	. .	. .	. .	. .	39 13.32	15.35	III.	7	11.10	34 36.3	7.7	38 57.97	37 14.0
66	8	29.0	43.5	. .	. .	. .	. .	. .	42 11.98	15.41	II.	2	6.11	8 7.8	7.7	41 56.57	10 45.5
67	7	. .	. .	8.5	22.8	. .	. .	. .	44 22.56	15.43	IV.	2	4.35	7 15.6	7.6	44 7.13	9 53.2
68	9	. .	. .	. .	29.0	43.0	. .	. .	45 28.68	15.44	V.	2	7.31	8 44.5	7.6	45 13.24	11 22.1
69	9	. .	. .	. .	33.0	47.5	. .	. .	46 32.95	15.44	V.	4	4.3	16 58.7	7.6	46 17.51	19 36.3
70	9	. .	5.4	20.0	. .	. .	. .	. .	51 34.07	15.49	III.	6	5.20	26 38.9	7.6	51 18.58	29 16.5
71	10	. .	. .	. .	20.0	34.5	. .	. .	52 19.95	15.51	V.	4	6.18	18 6.9	7.6	52 4.44	20 44.5
72	6	. .	26.0	40.8	. .	. .	. .	. .	53 54.83	15.50	III.	7	4.25	31 11.7	7.6	53 39.33	33 49.3
73	9	. .	28.5	43.0	. .	. .	. .	. .	54 57.06	15.52	III.	5	3.50	21 51.9	7.6	54 41.54	24 29.5
74	7	. .	42.5	57.3	. .	. .	. .	. .	56 11.09	15.56	III.	3	5.11	12 33.4	7.6	55 55.53	15 11.0
75	7	. .	. .	. .	. .	. .	55.0	10.0	23 57 26.50	— 15.57	VII.	3	2.31	—11 12.2	— 7.6	23 56 10.93	— 29 13 49.8

Zone 80. September 24. A. $D_0 = -29° 2' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	44.5	59.0	. .	. .	. .	. .	. .	0 39 27.61	— 15.58	II.	4	9.20	—19 38.7	— 2.3	0 39 12.03	— 29 22 11.0
2	6	53.5	8.2	. .	. .	. .	. .	. .	41 36.67	16.00	II.	4	2.49	16 21.1	2.5	41 20.67	18 53.6
3	8	2.0	17.0	. .	. .	. .	. .	. .	44 45.43	16.02	II.	5	11.0	25 29.0	2.8	44 29.41	28 1.8
4	8	5.2	20.0	. .	. .	. .	. .	. .	46 48.45	16.05	II.	4	7.52	18 54.2	3.0	46 32.40	21 27.2
5	9	. .	. .	. .	. .	9.2	23.3	. .	46 54.75	16.03	VI.	7	11.11	34 36.7	3.0	46 38.72	37 9.7
6	10	. .	. .	. .	. .	. .	46.5	1.5	55 18.12	16.10	VII.	8	9.53	38 56.3	4.0	55 2.02	41 30.3
7	7	. .	. .	. .	30.5	45.0	. .	. .	0 58 30.42	16.18	V.	1	9.53	4 56.6	4.4	0 58 14.24	7 31.0
8	9	. .	. .	27.5	42.0	. .	. .	. .	1 0 41.81	16.17	IV.	6	7.30	27 44.6	4.6	1 0 25.64	30 19.0
9	10	14.0	28.3	. .	. .	. .	. .	. .	2 57.14	16.17	II.	7	5.50	31 54.5	4.9	2 40.97	34 29.4
10	7	59.0	13.5	. .	. .	. .	. .	. .	11 42.21	16.26	II.	6	9.45	28 52.6	6.1	11 25.95	31 28.7
11	7	. .	. .	. .	34.8	49.0	. .	. .	13 34.66	16.24	V.	9	9.52	43 55.8	6.4	13 18.42	46 32.2
12	9	. .	. .	. .	36.2	51.0	. .	. .	14 36.34	16.27	V.	7	7.5	32 32.5	6.6	14 20.07	35 9.1
13	9	. .	. .	. .	. .	12.2	26.2	. .	15 57.59	16.30	VI.	3	10.46	15 22.6	6.7	15 41.29	17 59.3
14	7	. .	. .	23.5	37.5	. .	. .	. .	17 37.46	16.32	IV.	3	8.40	14 19.1	6.9	17 21.14	16 56.0
15	8	. .	. .	27.2	41.7	. .	. .	. .	18 41.54	16.30	IV.	7	4.48	31 23.4	7.1	18 25.24	34 0.5
16	9	. .	. .	49.5	4.0	. .	. .	. .	21 3.89	16.31	IV.	8	7.58	37 58.6	7.4	20 47.58	40 36.0
17	8	46.8	1.5	. .	. .	. .	. .	. .	23 30.18	16.32	II.	8	3.54	35 55.2	7.8	23 13.86	38 33.0
18	8	40.6	55.0	. .	. .	. .	. .	. .	27 23.77	16.37	II.	7	3.32	30 44.8	8.4	27 7.40	33 23.2
19	9	. .	. .	38.5	52.8	. .	. .	. .	1 27 52.66	— 16.38	IV.	5	3.35	—21 44.3	— 8.5	1 27 36.28	— 29 24 22.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(79) 75. Minutes assumed as 56 instead of 57.

ZONE 81. SEPTEMBER 25. K. $D_0 = -27° 46' 40''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	10.2	37.9	. .	. .	21 9	. .	V.	1	8.21	− 4 10.4			
2	8	. .	. .	. .	. .	30.0	. .	. .	11 15.71	− 14.03	V.	1	6.49	3 24.0	− 13.6	21 11 1.68	− 27 50 17.6
3	10	. .	. .	. .	. .	. .	. .	8.3	11 25.50	14.04	VII.	2	8.12	9 5.0	13.6	11 11.46	27 55 58.6
4	9	. .	. .	. .	. .	0.5	. .	. .	12 46.33	14.08	V.	7	11.55	34 58.9	13.3	12 32.25	28 21 42.2
5	10	1.8	16.2	. .	. .	. .	. .	. .	16 44.65	14.07	V.	7	6.58	32 28.9	12.7	16 30.58	19 21.6
6	8	. .	29.5	44.0	58.2	12.2	. .	. .	19 58.05	14.10	V.	8	3.10	35 33.0	12.2	19 43.95	22 25.2
7	11	. .	. .	. .	14.0	. .	. .	. .	20 13.84	14.10	VI.	8	4.45	36 20.8	12.2	19 59.74	23 13.0
8	8	. .	. .	41.8	56.1	10.1	. .	. .	25 56.00	14.15	VI.	10	4.14	46 6.1	11.4	25 41.85	32 57.5
9	10	. .	. .	. .	. .	. .	4.3	. .	25 36.07	14.15	VI.	10	5.39	46 49.1	11.4	25 21.92	33 40.5
10	11	. .	. .	. .	. .	. .	. .	15.8	26 33.26	14.18	VII.	6	11.29	29 44.9	11.3	26 19.08	16 36.2
11	10	9.0	23.2	37.4	. .	. .	. .	. .	28 51.65	14.19	IV.	7	3.52	30 55.0	10.9	28 37.46	17 45.9
12	7.8	. .	32.1	46.2	0.8	14.7	. .	. .	30 0.60	14.20	V.	10	6.17	47 8.4	10.8	29 46.40	28 33 59.2
13	7	. .	. .	. .	. .	. .	5.0	19.5	30 36.83	14.24	VII.	3	3.34	11 44.2	10.7	30 22.59	27 58 34.9
14	8	53.0	7.7	21.8	36.1	. .	. .	. .	33 35.99	14.25	IV.	8	2.17	35 6.2	10.2	33 21.74	28 21 56.4
15	9	. .	. .	. .	. .	. .	11.7	26.2	33 43.57	14.26	VII.	5	4.29	22 11.2	10.2	33 29.31	9 1.4
16	11	. .	. .	. .	. .	. .	. .	58.4	34 15.77	14.27	VII.	5	6.50	23 22.4	10.2	34 1.50	10 12.6
17	8	31.8	46.2	0.5	14.7	. .	. .	. .	39 14.67	14.31	V.	8	11.19	39 40.0	9.5	39 0.36	28 26 29.5
18	10	. .	. .	. .	. .	. .	2.8	17.6	39 34.77	14.35	VI.	1	13.31	6 46.9	9.4	39 20.42	27 53 36.3
19	7	. .	. .	14.5	28.6	42.8	. .	. .	41 28.47	14.36	VI.	4	8.21	19 8.9	9.2	41 14.11	28 5 58.1
20	9	. .	. .	. .	10.3	. .	38.3	. .	42 10.17	14.36	VI.	3	9.58	14 58.4	9.1	41 55.81	1 47.5
21	8	. .	. .	. .	. .	21.2	35.1	49.7	43 6.99	14.37	VII.	4	8.10	19 3.2	9.0	42 52.62	5 52.2
22	8	. .	. .	. .	. .	. .	33.6	48.0	44 5.39	14.38	VII.	3	8.22	14 9.7	8.8	43 51.01	0 58.5
23	10	. .	. .	. .	6.8	. .	. .	. .	46 6.64	14.38	IV.	9	9.15	43 36.9	8.6	45 52.26	30 25.5
24	10	. .	. .	. .	. .	17.0	31.1	45.4	47 2.82	14.42	VII.	4	3.46	16 49.8	8.4	46 48.40	3 38.2
25	11	. .	. .	6.0	. .	34.2	. .	. .	49 20.15	14.41	V.	9	7.28	42 42.8	8.2	49 5.74	29 31.0
26	7	. .	44.3	58.6	12.8	. .	. .	. .	51 12.71	14.44	IV.	7	9.48	33 54.8	7.9	50 58.27	20 42.7
27	9	. .	. .	. .	. .	54.3	. .	22.8	51 40.16	14.47	VII.	4	14.21	22 10.5	7.8	51 25.69	8 58.3
28	6.7	. .	53.4	. .	22.0	36.0	. .	. .	21 54 21.77	14.50	VI.	4	6.52	18 24.0	7.5	21 54 7.27	28 5 11.5
29	11	. .	. .	. .	40.9	. .	. .	. .	22 0 39.74	14.59	IV.	2	7.52	8 55.4	6.8	22 0 25.15	27 55 42.2
30	9.10	. .	. .	. .	. .	6.0	20.0	34.2	1 51.80	14.57	VII.	8	6.55	37 26.3	6.6	1 37.23	28 24 12.9
31	7	. .	. .	. .	. .	25.3	39.3	54.2	3 11.21	14.61	VII.	2	1.56	6 25.3	6.5	2 56.60	27 53 11.8
32	8	. .	. .	. .	. .	36.1	. .	. .	4 21.81	14.62	V.	1	5.10	2 34.0	6.3	4 7.19	27 49 20.3
33	10	. .	. .	. .	. .	. .	51.9	. .	5 23.77	14.62	VII.	5	10.10	25 3.5	6.2	5 9.15	28 11 49.7
34	4.5	. .	. .	. .	. .	. .	. .	44.8	6 2.42	14.61	VII.	9	9.30	43 44.1	6.2	5 47.81	30 30.3
35	7.8	. .	34.6	49.0	3.2	17.2	. .	. .	9 2.94	14.67	VI.	4	12.27	21 13.2	5.7	8 48.27	7 58.9
36	11	. .	. .	. .	11.2	. .	. .	. .	10 11.04	14.68	V.	3	11.30	15 45.0	5.7	9 56.36	2 30.7
37	8	. .	7.4	21.6	35.5	. .	. .	. .	11 35.54	14.69	V.	4	13.8	21 34.0	5.6	11 20.85	8 19.6
38	10	. .	. .	. .	42.4	56.2	10.4	. .	14 42.17	14.72	VI.	7	5.19	31 38.8	5.2	14 27.45	18 24.0
39	9	. .	31.2	45.5	. .	. .	. .	. .	17 59.45	14.78	IV.	4	8.35	19 16.2	4.9	17 44.67	28 6 1.1
40	9	19.8	. .	48.4	2.3	16.5	. .	. .	20 2.19	14.80	V.	3	3.2	11 28.4	4.7	19 47.39	27 58 13.1
41	9	. .	. .	. .	15.2	29.2	. .	. .	21 14.98	14.82	VI.	2	7.13	8 35.5	4.6	21 0.16	55 20.1
42	4.5	. .	. .	. .	. .	. .	4.8	19.6	21 36.77	14.83	VII.	1	11.15	5 38.0	4.6	21 21.94	27 52 22.6
43	11	. .	53.8	7.8	22.3	. .	. .	. .	26 22.01	14.86	IV.	5	6.9	23 2.2	4.1	25 7.15	28 9 46.3
44	11	. .	. .	. .	59.0	. .	. .	. .	26 58.84	14.86	IV.	6	7.49	27 54.2	4.1	26 43.98	28 14 38.3
45	11	. .	. .	. .	12.1	. .	. .	. .	28 20.84	14.90	IV.	2	7.52	8 55.4	4.0	28 5.94	27 55 39.4
46	10	18.3	32.7	47.0	. .	. .	. .	. .	30 1.07	14.90	IV.	6	5.9	26 33.4	3.8	29 46.17	28 13 17.2
47	2.3	. .	. .	22.0	36.0	50.2	3.9	. .	32 35.81	14.95	V.	1	5.34	2 46.1	3.6	32 20.86	27 49 29.7
48	9	. .	. .	. .	. .	. .	51.3	5.9	33 23.20	14.94	VII.	4	1.18	15 35.0	3.6	33 8.26	28 2 18.6
49	11	. .	. .	41.4	55.5	. .	. .	. .	22 35 55.26	− 14.97	IV.	3	4.56	−12 26.1	− 3.4	22 35 40.29	− 27 59 9.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1846. h.	s.	s.	s.	s.	s.
Sept. 25, 18	− 24.67	+ 0.017	+ 0.394	− 0.190	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(81) 31. Micrometer reading assumed as 2r.56 instead of 1r.56.
(81) 43. Minutes assumed as 25 instead of 26.

Zone 81. September 25. K. $D_0 = -27° 46' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	9	. .	54.6	9.0	23.2	. .	. .	. .	22 39 22.98	— 15.00	IV.	5	7.15	—23 35.5	— 3.1	22 39 7.98	— 28 10 18.6
51	7	. .	. .	13.8	28.0	42.0	56.2	. .	40 27.90	15.00	VII.	7	10.35	34 18.2	3.0	40 12.90	28 21 1.2
52	10	. .	. .	6.4	. .	34.7	. .	. .	52 20.27	15.17	IV.	2	4.34	7 15.3	2.2	52 5.10	27 53 57.5
53	6.7	. .	29.8	44.0	58.2	12.2	. .	. .	22 56 57.93	15.22	VI.	2	9.50	9 54.8	2.0	22 56 42.71	27 56 36.8
54	11	. .	56.4	. .	24.8	. .	. .	. .	23 2 24.67	— 15.27	IV.	4	8.41	—19 19.2	— 1.7	23 2 9.40	— 28 6 0.9

Zone 82. September 30. A. $D_0 = -27° 48' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	5	37.0	51.4	. .	. .	. .	. .	. .	23 16 19.70	— 17.60	II.	4	6.5	—18 0.2	— 2.7	23 16 2.10	— 28 6 22.9
2	6	. .	33.0	47.2	. .	. .	. .	. .	17 1.23	17.61	III.	5	4.28	22 11.1	2.6	16 43.62	10 33.7
3	6	47.8	2.1	. .	. .	. .	. .	. .	18 30.54	17.63	II.	6	5.15	26 36.2	2.6	18 12.91	14 58.8
4	7	9.5	23.9	. .	. .	. .	. .	. .	19 52.20	17.65	II.	4	6.1	17 58.2	2.5	19 34.55	6 20.7
5	8	54.5	8.8	. .	. .	. .	. .	. .	21 37.35	17.67	II.	8	6.13	37 5.3	2.5	21 19.68	28 25 27.8
6	9	. .	. .	. .	. .	50.5	4.5	. .	21 36.34	17.68	VI.	2	4.15	7 5.5	2.5	21 18.66	27 55 28.0
7	9	. .	. .	55.5	10.0	. .	. .	. .	23 9.61	17.69	IV.	4	7.37	18 46.9	2.4	22 51.92	28 7 9.3
8	10	. .	. .	. .	. .	48.5	2.2	. .	23 34.18	17.69	VI.	5	7.37	23 46.4	2.4	23 16.49	28 12 8.8
9	9	. .	. .	. .	. .	. .	. .	35.5	23 52.70	17.71	VII.	2	9.18	9 38.3	2.4	23 34.99	27 58 0.7
10	10	. .	. .	12.0	26.5	. .	. .	. .	26 26.06	17.73	IV.	3	4.15	12 5.3	2.4	26 8.33	28 0 27.7
11	10	. .	. .	. .	. .	22.0	35.5	. .	27 7.58	17.73	VI.	6	4.39	26 18.0	2.4	26 49.85	14 40.4
12	5	. .	. .	. .	. .	16.5	30.8	. .	28 2.48	17.75	VI.	7	3.15	30 36.2	2.4	27 44.73	28 18 58.6
13	8	5.0	19.5	. .	. .	. .	. .	. .	31 47.66	17.80	II.	2	11.36	10 48.3	2.3	31 29.86	27 59 10.6
14	10	59.5	13.8	. .	. .	. .	. .	. .	33 42.22	17.81	II.	5	10.56	25 27.0	2.3	33 24.41	28 13 49.3
15	7	. .	14.7	29.0	. .	. .	. .	. .	34 43.20	17.82	III.	8	11.35	39 48.2	2.3	34 25.38	28 10.5
16	11	. .	. .	. .	35.0	48.5	. .	. .	36 34.54	17.86	V.	3	7.21	13 24.1	2.3	36 16.68	1 46.4
17	8	. .	38.5	52.5	. .	. .	. .	. .	38 6.77	17.87	III.	7	7.15	32 37.5	2.3	37 48.90	20 59.8
18	10	42.0	56.0	. .	. .	. .	. .	. .	39 24.32	17.87	II.	4	11.17	20 37.8	2.3	39 6.45	28 9 0.1
19	11	. .	. .	26.0	40.0	. .	. .	. .	42 39.79	17.92	IV.	2	8.55	9 27.1	2.3	42 21.87	27 57 49.4
20	10	. .	24.0	38.5	. .	. .	. .	. .	44 52.17	17.94	III.	1	10.46	5 23.6	2.3	44 34.23	53 45.9
21	7	. .	. .	. .	53.5	8.0	21.8	. .	46 53.61	17.97	VI.	1	8.38	4 18.9	2.4	46 35.64	27 52 41.3
22	9	. .	56.5	10.8	. .	. .	. .	. .	51 25.12	17.99	III.	10	8.14	48 7.6	2.4	51 7.13	28 36 30.0
23	10	. .	3.5	18.0	. .	. .	. .	. .	52 32.17	18.01	III.	9	9.52	43 55.6	2.5	52 14.16	28 32 18.1
24	8	. .	23.0	37.5	52.0	. .	. .	. .	54 51.43	18.05	IV.	2	9.27	9 46.5	2.6	54 33.38	27 58 9.1
25	9	. .	53.0	7.5	. .	. .	. .	. .	57 21.32	18.07	III.	4	4.55	17 25.0	2.6	57 3.25	28 5 47.6
26	9	. .	. .	. .	. .	6.0	19.8	. .	57 51.74	18.08	VI.	4	5.51	17 53.1	2.6	57 33.66	6 15.7
27	8	. .	27.3	41.4	. .	. .	. .	. .	23 59 55.52	18.10	III.	5	11.3	25 30.6	2.7	23 59 37.42	13 53.3
28	6	. .	. .	0.8	15.0	. .	. .	. .	0 4 14.99	18.13	IV.	10	10.51	49 42.1	2.9	0 3 56.86	38 5.0
29	7	19.6	34.4	. .	. .	. .	. .	. .	7 2.66	18.18	II.	7	8.20	33 10.2	3.0	6 44.48	21 33.2
30	8	. .	. .	. .	. .	22.0	36.0	. .	7 7.84	18.19	VI.	3	3.40	11 47.4	3.0	6 49.65	0 10.4
31	9	. .	. .	. .	. .	. .	. .	27.5	7 44.98	18.20	VII.	7	5.32	31 45.1	3.0	7 26.78	28 20 8.1
32	10	. .	. .	. .	. .	. .	33.0	47.0	9 4.57	18.21	VII.	2	10.34	10 16.7	3.1	8 46.36	27 58 39.8
33	11	. .	9.3	23.5	. .	. .	. .	. .	12 37.79	18.23	III.	9	4.30	41 13.0	3.3	12 19.56	28 29 36.3
34	7	. .	. .	53.0	7.0	. .	. .	. .	15 6.74	18.27	IV.	1	5.33	2 45.5	3.4	14 48.47	27 51 8.9
35	10	2.0	17.5	. .	. .	. .	. .	. .	16 45.33	18.28	II.	6	4.31	26 14.0	3.5	16 27.05	28 14 37.5
36	7	. .	. .	. .	. .	19.2	33.0	. .	17 4.94	18.29	VI.	1	6.54	3 26.3	3.6	16 46.65	27 51 49.9
37	5	. .	. .	. .	. .	47.0	0.9	15.0	18 32.73	18.29	VII.	9	9.57	43 57.8	3.6	18 14.44	28 32 21.4
38	8	. .	21.0	36.0	. .	. .	. .	. .	21 49.67	18.33	III.	5	9.51	24 54.2	3.8	21 31.34	13 18.0
39	9	. .	. .	. .	45.5	0.0	. .	. .	22 45.55	18.34	V.	4	2.44	16 18.8	3.9	22 27.21	4 42.7
40	7	50.2	5.0	. .	. .	. .	. .	. .	0 29 33.09	— 18.41	II.	4	5.46	—17 50.6	— 4.4	0 29 14.68	— 28 6 15.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Sept. 30,	19	— 26.59	— 0.020	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(82) 16. Micrometer reading assumed as 6r.51 instead of 7r.21; *vide* M. C. Zone 60, 123.
(82) 28. Micrometer reading assumed as 11r.21 instead of 10r.51.

Zone 82. September 30. A. $D_{\circ}=-27^{\circ}\ 48'\ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
41	6	. .	. .	. .	. .	49.8	3.5	. .	0 29 35.48	− 18.41	VI.	6	4.49	−26 23.1	− 4.4	0 29 17.07	− 28 14 47.5
42	7	. .	. .	. .	0.5	14.5	. .	. .	31 0.34	18.42	V.	8	8.49	38 24.3	4.5	30 41.92	26 48.8
43	8	43.0	58.0	. .	. .	. .	. .	. .	33 25.99	18.44	II.	4	4.39	17 16.8	4.7	33 7.55	5 41.5
44	7	. .	. .	. .	42.0	56.0	. .	. .	33 41.82	18.45	V.	5	6.45	23 20.3	4.7	33 23.37	11 45.0
45	8	38.5	52.5	. .	. .	. .	. .	. .	42 21.20	18.54	II.	8	6.2	36 59.8	5.4	42 2.66	25 25.2
46	9	52.5	7.0	. .	. .	. .	. .	. .	43 35.34	18.56	II.	6	5.8	26 32.8	5.5	43 16.78	14 58.3
47	9	. .	. .	44.0	58.0	. .	. .	. .	44 58.01	18.56	IV.	8	7.43	37 51.0	5.6	44 39.45	26 16.6
48	5	. .	. .	42.9	57.5	. .	. .	. .	48 57.27	18.59	IV.	10	6.10	47 5.0	5.9	48 38.68	28 35 30.9
49	7	. .	50.5	5.0	. .	. .	. .	. .	51 18.67	18.63	III.	1	11.28	5 44.8	6.2	51 0.04	27 54 11.0
50	11	. .	. .	. .	51.0	5.0	. .	. .	0 53 50.79	− 18.66	V.	3	6.58	−12 57.3	− 6.4	0 53 32.13	− 28 1 23.7

Zone 83. October 3. A. $D_{\circ}=-24^{\circ}\ 5'\ 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	33.0	47.0	. .	. .	. .	. .	21 21 0.42	− 16.41	III.	5	4.13	−21 33.3	− 11.5	21 20 44.01	− 24 26 54.8
2	7	. .	. .	. .	. .	. .	43.5	57.2	24 16.23	16.42	VII.	9	8.19	43 7.9	11.2	23 59.81	48 29.1
3	5	. .	. .	43.4	57.2	. .	. .	. .	26 56.83	16.49	IV.	1	5.35	1 46.6	11.0	26 40.34	7 7.6
4	8	42.5	56.8	. .	. .	. .	. .	. .	29 23.91	16.50	II.	4	3.53	16 53.8	10.7	29 7.41	22 14.5
5	8	42.3	56.2	. .	. .	. .	. .	. .	32 23.62	16.52	II.	6	11.10	29 35.5	10.6	32 7.10	34 56.1
6	9	. .	. .	. .	37.2	50.8	. .	. .	32 37.07	16.53	V.	5	7.54	23 55.2	10.6	32 20.54	29 15.8
7	6	21.8	36.0	. .	. .	. .	. .	. .	35 3.38	16.53	II.	9	10.10	44 4.1	10.4	34 46.85	49 24.5
8	10	. .	39.2	53.2	. .	. .	. .	. .	36 6.45	16.58	III.	2	4.26	7 11.6	10.4	35 49.87	12 32.0
9	9	. .	46.8	0.8	. .	. .	. .	. .	39 14.16	16.60	III.	4	3.32	16 43.3	10.1	38 57.56	22 3.4
10	9	. .	. .	. .	. .	53.0	6.5	. .	39 39.29	16.60	VI.	5	6.57	23 26.3	10.1	39 22.69	28 46.4
11	8	. .	. .	. .	. .	54.2	7.8	. .	41 40.53	16.63	VI.	3	9.30	14 44.5	10.0	40 23.90	20 4.5
12	11	. .	. .	. .	. .	3.5	16.5	. .	41 49.54	16.62	VI.	6	4.33	26 15.0	10.0	41 32.92	31 35.0
13	8	. .	. .	53.5	7.5	. .	. .	. .	45 7.29	16.63	IV.	9	3.16	40 20.1	9.8	44 50.66	45 39.9
14	9	29.5	43.2	. .	. .	. .	. .	. .	47 10.65	16.68	II.	5	3.5	21 29.1	9.7	46 53.97	26 48.8
15	9	. .	29.2	43.0	. .	. .	. .	. .	47 56.56	16.69	III.	6	4.35	26 16.1	9.7	47 39.87	31 35.8
16	8	. .	. .	. .	. .	44.0	57.8	. .	48 30.44	16.68	VI.	8	7.9	37 33.3	9.6	48 13.76	42 52.9
17	9	. .	. .	48.5	2.5	. .	. .	. .	21 50 2.27	− 16.70	IV.	8	5.58	−36 57.6	− 9.6	21 49 44.57	− 24 42 17.2

Zone 84. October 3. A. $D_{\circ}=-26^{\circ}\ 32'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	. .	. .	. .	. .	27.0	41.5	22 11 59.24	− 16.82	VII.	6	4.35	−26 15.8	− 32.2	22 11 42.42	− 26 59 29.0
2	6	. .	. .	50.0	3.9	. .	. .	. .	15 3.65	16.87	IV.	1	5.36	2 47.3	32.3	14 46.78	26 35 59.6
3	6	. .	. .	. .	59.0	12.8	. .	. .	15 58.82	16.86	V.	7	11.0	34 31.1	32.0	15 41.96	27 7 43.1
4	5	. .	5.6	19.9	. .	. .	. .	. .	19 33.86	16.90	III.	8	7.36	37 47.3	31.0	19 16.96	10 58.3
5	8	. .	11.6	26.0	. .	. .	. .	. .	21 40.02	16.91	III.	10	4.24	46 11.2	30.5	21 23.11	19 21.7
6	9	. .	. .	47.5	2.0	. .	. .	. .	23 1.68	16.95	IV.	7	9.58	33 59.9	30.1	22 44.73	6 10.0
7	8	56.5	11.0	. .	. .	. .	. .	. .	24 39.03	16.96	II.	8	4.0	41 0.6	29.7	24 22.07	27 14 10.3
8	7	. .	. .	. .	. .	. .	. .	25.2	24 42.84	16.99	VII.	1	8.6	4 2.6	29.7	24 25.85	26 37 12.3
9	9	. .	37.2	51.5	. .	. .	. .	. .	28 5.41	17.01	III.	7	8.32	33 16.4	28.8	27 48.40	27 6 25.2
10	7	. .	. .	43.0	57.2	. .	. .	. .	28 56.90	17.03	IV.	4	3.40	16 47.3	28.5	28 39.87	26 49 55.8
11	9	. .	. .	. .	. .	. .	3.0	17.5	29 35.16	17.05	VII.	1	9.59	4 59.7	28.3	29 18.11	38 8.0
12	9	23.2	37.5	. .	. .	. .	. .	. .	32 5.50	17.05	II.	5	8.9	24 2.6	27.7	31 48.45	57 10 3
13	8	. .	. .	32.0	45.8	. .	. .	. .	32 45.66	17.08	IV.	2	11.12	10 36.4	27.5	32 28.58	26 43 43.9
14	10	. .	. .	23.0	37.0	. .	. .	. .	22 34 36.89	− 17.08	IV.	6	9.48	−28 54.3	− 27.1	22 34 19.81	− 27 2 1.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 3,	20	− 26.61	+ 0.005	+ 0.265	− 0.106	− 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(82) 50. Micrometer reading assumed as 5$^{\mathrm{r}}$.58 instead of 6$^{\mathrm{r}}$.58.
(83) 1. Micrometer reading assumed as 3$^{\mathrm{r}}$.13 instead of 4$^{\mathrm{r}}$.13.
(83) 3. Micrometer reading assumed as 3$^{\mathrm{r}}$.35 instead of 5$^{\mathrm{r}}$.35.
(83) 11. Minutes assumed as 40 instead of 41.
(83) 13. Micrometer reading assumed as 2$^{\mathrm{r}}$.46 instead of 3$^{\mathrm{r}}$.16.
(84) 7. Micrometer reading assumed as 14$^{\mathrm{r}}$.00 instead of 4$^{\mathrm{r}}$.00.

Zone 84. October 3. A. $D_0 = -26° 32' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
15	8	48.5	3.3	. .	. .	. .	. .	. .	22 36 31.13	— 17.10	II.	7	5.19	—31 38.7	— 26.6	22 36 14.03	— 27 4 45.3
16	9	. .	. .	. .	. .	. .	57.2	11.5	36 29.28	17.11	VII.	3	3.35	11 44.8	26.6	36 12.17	26 44 51.4
17	10	. .	21.5	35.8	. .	. .	. .	. .	38 49.62	17.13	III.	6	2.3	24 59.4	26.0	38 32.49	26 58 5.4
18	7	. .	. .	. .	. .	. .	25.5	39.7	38 57.62	17.13	VII.	7	6.20	32 9.3	26.0	38 40.49	27 5 15.3
19	9	. .	28.0	42.0	. .	. .	. .	. .	40 56.22	17.13	III.	10	5.45	46 52.1	25.4	40 39.09	19 57.5
20	9	. .	. .	. .	59.0	13.0	. .	. .	41 58.95	17.14	V.	10	1.12	34 33.3	25.2	41 41.81	7 38.5
21	8	. .	. .	. .	. .	17.5	31.0	. .	43 3.27	17.17	VI.	9	4.49	41 22.3	24.9	42 46.10	27 14 27.2
22	11	. .	. .	. .	42.5	. .	. .	. .	44 42.35	17.20	IV.	5	7.35	23 45.6	24.5	44 25.15	26 56 50.1
23	9	6.0	20.5	. .	. .	. .	. .	. .	48 48.47	17.25	II.	7	2.49	30 23.0	23.5	48 31.22	27 3 26.5
24	7	. .	. .	. .	18.2	32.2	. .	. .	49 18.10	17.25	V.	6	7.12	27 35.4	23.4	49 0.85	27 0 38.8
25	7	. .	. .	. .	. .	. .	21.8	36.4	49 54.10	17.26	VII.	5	11.37	20 47.7	23.2	49 36.84	26 53 50.9
26	6	. .	. .	. .	27.0	40.5	. .	. .	52 26.65	17.28	V.	5	8.17	24 6.8	22.7	52 9.37	57 9.5
27	8	5.5	19.9	. .	. .	. .	. .	. .	56 47.88	17.34	II.	6	4.47	26 22.1	21.6	56 30.54	59 23.7
28	10	. .	. .	29.5	43.8	. .	. .	. .	58 43.52	17.36	IV.	5	11.10	25 34.2	21.2	58 26.16	26 58 35.4
29	10	. .	. .	. .	39.5	53.5	. .	. .	22 59 39.41	17.37	V.	6	7.7	27 32.9	21.0	22 59 22.04	27 0 33.9
30	4	. .	. .	52.5	6.4	. .	. .	. .	23 1 6.17	17.40	IV.	1	10.57	5 29.4	20.7	23 0 48.77	26 38 20.1
31	8	. .	. .	14.5	29.0	. .	. .	. .	5 28.72	17.41	IV.	8	11.41	39 51.0	19.7	5 11.31	27 12 50.7
32	7	. .	. .	. .	. .	. .	13.0	27.0	5 45.09	17.41	VII.	10	8.45	48 22.7	19.6	5 27.68	21 22.3
33	9	24.0	38.2	. .	. .	. .	. .	. .	11 6.32	17.49	II.	6	11.6	29 33.5	18.5	10 48.83	2 32.0
34	8	. .	. .	33.7	47.5	. .	. .	. .	11 47.60	17.49	IV.	9	8.22	43 10.0	18.3	11 30.11	27 16 8.3
35	10	. .	. .	3.5	17.0	. .	. .	. .	13 16.96	17.53	IV.	1	8.57	4 28.8	18.0	12 59.43	26 37 26.8
36	9	. .	23.5	37.5	. .	. .	. .	. .	14 51.71	17.52	III.	9	12.0	45 0.1	17.7	14 34.19	27 17 57.8
37	9	. .	. .	26.4	40.3	. .	. .	. .	15 40.32	17.53	IV.	8	11.33	39 47.0	17.5	15 22.79	27 12 44.5
38	10	. .	. .	. .	. .	. .	0.0	14.8	16 32.32	17.57	VII.	2	7.32	8 45.0	17.3	16 14.75	26 41 42.3
39	9	. .	. .	16.5	30.5	. .	. .	. .	18 30.53	17.55	IV.	10	5.9	46 34.0	16.9	18 12.98	27 19 30.9
40	10	. .	. .	. .	55.0	8.8	. .	. .	19 54.78	17.60	V.	3	8.30	14 14.2	16.6	19 37.18	26 47 10.8
41	9	. .	49.5	4.2	. .	. .	. .	. .	24 17.58	17.65	III.	2	3.15	6 35.5	15.7	23 59.93	39 31.2
42	5	. .	. .	. .	. .	. .	46.5	. .	24 18.70	17.65	VI.	1	3.15	1 35.9	15.7	24 1.05	34 31.6
43	7	. .	. .	. .	16.5	30.9	. .	. .	26 16.56	17.67	V.	1	6.21	3 9.9	15.3	25 58.89	36 5.2
44	8	52.5	6.8	. .	. .	. .	. .	. .	29 34.64	17.72	II.	2	7.36	8 47.2	14.7	29 16.92	26 41 41.9
45	6	9.1	23.5	. .	. .	. .	. .	. .	32 51.50	17.75	II.	6	9.15	28 37.4	14.1	32 33.73	27 1 31.5
46	5	15.3	29.7	. .	. .	. .	. .	. .	36 57.73	17.77	II.	7	5.46	31 52.4	13.3	36 39.96	4 45.7
47	8	. .	. .	. .	. .	15.5	29.0	. .	37 1.27	17.75	VI.?	10	3.4	45 30.7	13.3	36 43.52	18 24.0
48	10	31.8	46.0	. .	. .	. .	. .	. .	40 14.10	17.81	II.	6	8.18	28 8.6	12.7	39 55.45	1 1.3
49	9	. .	. .	. .	50.0	3.8	. .	. .	41 49.83	17.82	V.	9	5.0	41 28.0	12.4	41 32.19	27 14 20.4
50	8	. .	. .	59.7	13.8	. .	. .	. .	43 13.51	17.85	IV.	3	3.26	11 40.7	12.2	42 55.49	26 44 32.9
51	8	. .	15.2	29.4	. .	. .	. .	. .	45 43.20	17.88	III.	4	11.11	20 35.0	11.8	45 24.83	53 26.8
52	8	. .	. .	26.5	40.0	. .	. .	. .	48 40.01	17.92	IV.	3	3.43	11 49.3	11.2	48 21.92	44 40.5
53	8	9.0	23.0	. .	. .	. .	. .	. .	51 51.11	17.94	II.	4	10.0	19 59.0	10.7	51 32.35	26 52 49.7
54	9	. .	13.5	27.5	. .	. .	. .	. .	52 41.50	17.94	III.	6	7.40	27 49.6	10.6	52 23.04	27 0 40.2
55	10	. .	43.5	57.5	. .	. .	. .	. .	54 11.71	17.93	III.	10	3.3	45 30.3	10.3	53 53.26	27 18 20.6
56	7	. .	. .	. .	. .	. .	. .	9.2	54 26.83	17.97	VII.	1	8.39	4 19.3	10.3	54 9.84	26 37 9.6
57	9	. .	. .	. .	2.0	15.8	. .	. .	56 1.83	— 17.97	V.	9	6.28	42 12.4	— 10.0	23 55 44.04	— 27 15 2.4
58	8	. .	. .	. .	. .	. .	11.2	36.0	22 57?	. .	VII.	2	11.15	—10 37.6			

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(84) 20. Hor. thread assumed as 8 instead of 10.
(84) 25. Hor. thread assumed as 4 instead of 5.

Zone 85. October 5. K. $D_\circ = -25^\circ\ 14'\ 20''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	6	. .	. .	12.3	25.9	39.9	. .	. .	22 15 25.88	− 17.03	VI.	4	3.18	−16 36.0	− 1.8	22 15 8.85	− 25 30 57.8
2	10	. .	. .	. .	41.3	54.9	8.3	. .	24 40.95	17.16	VII.	2	7.26	8 42.1	1.2	24 23.79	25 23 3.3
3	7	. .	7.7	21.5	35.6	49.1	. .	. .	37 35.48	17.23	V.	10	6.11	47 5.1	0.6	37 18.25	26 1 25.7
4	10	24.9	38.9	52.9	6.8	. .	. .	. .	41 6.69	17.31	V.	6	8.30	28 14.8	0.5	40 49.38	25 42 35.3
5	10	. .	. .	. .	59.0	. .	. .	. .	44 58.85	17.33	V.	10	3.34	45 45.8	0.4	44 41.52	26 0 6.2
6	9	. .	. .	. .	. .	. .	. .	55.6	45 14.16	17.35	VII.	9	6.25	42 10.4	0.4	44 56.81	25 56 30.8
7	8	. .	. .	. .	. .	40.3	53.8	8.1	46 26.38	17.37	VII.	7	6.42	32 20.4	0.4	46 9.01	46 40.8
8	7	. .	47.7	1.6	15.6	. .	. .	. .	22 52 15.55	17.42	V.	9	8.52	43 25.0	0.3	22 51 58.13	57 45.3
9	8.9	. .	. .	. .	. .	. .	3.3	17.6	23 7 35.84	17.61	VII.	5	11.27	25 42.4	0.1	23 7 18.23	40 2.5
10	10	. .	. .	. .	41.8	. .	. .	. .	10 41.65	17.64	VI.	7	11.50	34 56.1	0.0	10 24.01	49 16.1
11	10	0.0	13.8	28.2	42.0	. .	. .	. .	13 41.81	17.67	IV.	6	6.37	27 17.8	0.0	13 24.14	41 37.8
12	9	52.1	6.3	20.2	. .	. .	. .	. .	15 33.80	17.70	IV.	3	3.35	11 45.3	0.0	15 16.10	26 5.3
13	9	. .	. .	. .	54.0	. .	. .	. .	19 53.85	17.76	V.	1	6.54	3 26.8	0.1	19 36.09	17 46.9
14	7	. .	56.3	10.2	24.1	37.8	. .	. .	26 23.97	17.81	VI.	6	6.00	26 59.0	0.2	26 6.16	41 19.2
15	8	. .	. .	. .	17.6	31.3	44.8	. .	30 17.35	17.85	VII.	6	7.55	27 56.8	0.3	29 59.50	42 17.1
16	10	45.0	59.0	13.0	. .	. .	. .	. .	36 26.71	17.91	IV.	5	2.51	21 22.2	0.5	36 8.80	35 42.7
17	5.6	31.3	45.6	59.5	13.3	. .	. .	. .	45 13.29	18.01	IV.	7	11.41	34 51.8	1.0	44 55.28	49 12.8
18	5.6	22.1	36.3	50.2	4.0	. .	. .	. .	49 3.89	18.06	IV.	4	9.56	19 57.2	1.2	48 45.83	34 18.4
19	7	37.8	51.2	5.8	. .	33.4	. .	. .	52 19.29	18.09	V.	3	8.51	14 24.9	1.5	52 1.20	28 46.4
20	9	5.2	19.4	33.4	47.1	1.0	. .	. .	55 46.96	18.14	VI.	2	12.7	11 4.2	1.8	55 28.82	25 26.0
21	10	. .	. .	. .	53.5	. .	. .	. .	58 53.35	18.17	IV.	1	11.50	5 56.1	2.0	58 35.18	20 18.1
22	10	. .	. .	. .	. .	. .	. .	59.9	23 59 18.08	− 18.16	VII.	3	5.43	−12 49.6	− 2.0	23 58 59.92	− 25 27 11.6

Zone 86. October 6. A. $D_\circ = -35^\circ\ 20'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	33.0	48.7	. .	. .	. .	. .	22 24 3.90	− 16.33	III.	6	10.46	−29 24.1	. .	22 23 47.57	
2	6	. .	. .	41.6	57.2	. .	. .	. .	24 57.01	16.34	IV.	7	11.44	34 54.6	. .	24 40.67	
3	8	. .	. .	45.5	1.2	. .	. .	. .	26 0.90	16.36	IV.	6	8.24	28 12.3	. .	25 44.54	
4	5	. .	. .	. .	. .	. .	. .	55.5	26 9.07	16.36	VII.	2	4.35	7 13.2	. .	25 52.71	
5	9	20.8	36.5	. .	. .	. .	. .	. .	29 7.22	16.40	II.	5	7.7	23 31.0	. .	28 50.82	
6	7	22.0	37.8	. .	. .	. .	. .	. .	30 8.29	16.42	II.	2	9.8	9 31.6	. .	29 51.87	
7	6	54.9	10.5	. .	. .	. .	. .	. .	31 41.45	16.45	II.	8	7.32	37 46.7	. .	31 25.00	
8	7	31.2	46.6	. .	. .	. .	. .	. .	39 17.39	16.55	II.	4	4.55	17 23.9	. .	39 0.84	
9	8	44.6	0.1	. .	. .	. .	. .	. .	40 30.78	16.58	II.	3	8.26	14 10.6	. .	40 14.20	
10	8	. .	47.4	2.9	. .	. .	. .	. .	41 18.16	16.59	III.	6	5.46	26 52.2	. .	41 1.57	
11	7	. .	31.8	47.5	. .	. .	. .	. .	44 2.37	16.63	III.	2	2.38	6 14.5	. .	43 45.74	
12	9	. .	. .	30.0	45.8	. .	. .	. .	49 45.45	16.73	IV.	6	8.33	28 16.8	. .	49 28.72	
13	9	0.8	16.5	. .	. .	. .	. .	. .	51 47.32	16.76	II.	7	4.30	31 14.7	. .	51 30.56	
14	9	. .	. .	. .	. .	59.0	13.8	. .	53 43.40	16.79	VI.	3	10.41	15 18.9	. .	53 26.61	
15	4	41.5	57.0	. .	. .	. .	. .	. .	55 27.69	16.81	II.	3	8.6	14 0.5	. .	55 10.88	
16	9	. .	59.5	15.0	. .	. .	. .	. .	56 30.12	16.83	III.	4	2.8	15 59.6	. .	56 13.29	
17	8	32.2	48.0	. .	. .	. .	. .	. .	22 59 18.63	− 16.86	II.	5	2.30	−21 10.8	. .	22 59 1.77	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 5,	20	− 26.74	+ 0.002	+ 0.265	− 0.106	− 0.086
Oct. 6,	20	− 26.33	+ 0.001	+ 0.265	− 0.106	− 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

Zone 87. October 7. K. $D_0 = -31° 35' 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	31.1	45.8	0.7	. .	. .	. .	. .	22 19 0.57	— 16.54	III.	7	7.36	—32 48.5	— 5.9	22 18 44.03	— 32 7 54.4
2	8	. .	. .	. .	. .	. .	. .	59.6	19 15.56	16.57	VII.	9	9.27	43 43.4	5.9	18 58.99	32 18 49.3
3	11	. .	. .	. .	37.3	. .	6.3	. .	21 37.11	16.62	VI.	3	3.29	11 41.3	5.8	21 20.49	31 46 47.1
4	8	. .	. .	. .	48.1	2.7	17.1	. .	22 47.91	16.66	VI.	3	4.51	12 22.8	5.7	22 31.25	47 28.5
5	9	. .	. .	. .	. .	6.9	. .	36.4	23 52.12	16.69	VII.	5	2.13	21 2.3	5.6	23 35.43	31 56 7.9
6	9	. .	. .	. .	28.8	. .	. .	. .	28 28.64	16.77	V.	10	11.53	49 59.3	5.3	28 11.87	32 25 4.6
7	8	. .	52.6	7.3	22.1	36.6	. .	. .	36 21.89	16.92	VI.	4	9.30	19 43.5	4.8	36 4.97	31 54 48.3
8	8	. .	43.8	58.7	13.6	28.2	. .	. .	41 13.34	17.00	VI.	5	9.8	24 32.3	4.5	40 56.34	59 36.8
9	11	. .	. .	13.8	. .	. .	. .	. .	45 28.08	17.07	IV.	1	11.56	5 58.2	4.3	45 11.01	41 2.5
10	10	. .	. .	. .	7.6	22.4	36.7	. .	46 7.51	17.08	VII.	2	5.1	7 27.7	4.3	45 50.43	31 42 32.0
11	6	. .	50.0	4.9	19.9	34.5	. .	. .	48 19.78	17.09	V.	10	4.57	46 29.0	4.2	48 2.69	32 21 33.2
12	10	50.5	5.6	20.3	. .	. .	. .	. .	51 34.75	17.17	IV.	2	10.24	10 11.4	4.0	51 17.58	31 45 15.4
13	9	. .	. .	. .	. .	. .	17.2	. .	51 47.90	17.17	VI.	4	11.20	20 39.1	4.0	51 30.73	55 43.1
14	10	. .	. .	. .	. .	. .	. .	3.2	52 18.89	17.16	VII.	4	9.29	19 42.7	4.0	52 1.73	54 46.7
15	9	30.4	45.6	0.3	. .	. .	. .	. .	55 14.87	17.20	IV.	5	3.47	21 50.3	3.8	54 57.67	56 54.1
16	8.9	. .	. .	19.3	33.8	. .	. .	. .	22 57 33.57	17.25	V.	1	4.10	2 2.6	3.8	22 57 16.32	37 6.4
17	11	. .	51.3	. .	20.8	. .	. .	. .	23 0 20.58	17.28	IV.	1	12.4	6 2.3	3.6	23 0 3.30	41 5.9
18	11	. .	. .	33.3	. .	. .	. .	. .	1 47.61	17.30	IV.	2	6.20	8 8.1	3.6	1 30.31	43 11.7
19	11	. .	. .	. .	. .	. .	19.0	34.3	6 49.86	17.36	VII.	5	4.39	22 16.1	3.4	6 32.50	31 57 19.5
20	10	10.5	. .	40.3	55.1	. .	. .	. .	11 55.01	17.43	V.	7	12.36	35 20.1	3.3	11 37.58	32 10 23.4
21	11	. .	. .	46.0	. .	15.4	. .	. .	14 0.78	17.44	VII.	9	3.36	40 45.9	3.3	13 43.34	32 15 49.2
22	7.8	. .	30.0	44.8	59.6	14.3	. .	. .	15 59.42	17.48	VI.	5	1.58	20 55.0	3.2	15 41.94	31 55 58.2
23	8	. .	. .	10.0	. .	39.3	53.5	. .	20 24.35	17.55	VI.	1	9.14	4 36.1	3.2	20 6.80	31 39 39.3
24	8	. .	. .	. .	. .	. .	. .	52.8	21 8.69	17.56	VII.	8	7.22	37 40.4	3.2	20 51.13	32 12 43.6
25	8	. .	3.2	. .	. .	. .	. .	. .	23 32.86	17.58	III.	9	9.11	43 35.7	3.1	23 15.28	18 38.8
26	8	. .	. .	. .	0.3	15.3	. .	. .	24 0.37	17.59	VI.	7	11.22	34 42.6	3.1	23 42.78	9 45.7
27	6.7	. .	16.5	31.6	46.4	. .	. .	. .	25 46.19	17.62	VI.	7	5.58	31 58.8	3.1	25 28.57	7 1.9
28	8	26.8	. .	56.9	11.7	. .	. .	. .	35 11.45	17.74	V.	6	9.3	28 31.7	3.1	34 53.71	3 34.8
29	8	17.0	32.1	47.0	. .	. .	. .	. .	42 1.71	17.84	IV.	8	10.12	39 6.8	3.2	41 43.87	32 14 10.0
30	9	51.8	6.8	21.4	36.3	. .	. .	. .	44 36.09	17.87	V.	4	9.3	19 30.0	3.2	44 18.22	31 54 33.2
31	8	. .	. .	8.1	23.1	37.8	52.3	. .	51 22.97	17.94	VI.	9	9.31	43 45.7	3.4	51 5.03	32 18 49.1
32	9	. .	. .	14.6	29.3	44.0	. .	. .	55 29.28	18.00	VI.	8	4.58	36 27.9	3.5	55 11.28	32 11 31.4
33	8	. .	. .	. .	. .	. .	42.1	57.0	56 12.78	18.02	VII.	4	11.8	20 32.8	3.5	55 54.76	31 55 36.3
34	9	. .	. .	. .	. .	. .	. .	58.2	23 57 13.95	18.03	VII.	5	10.27	25 12.0	3.5	23 56 55.92	32 0 15.5
35	9	. .	45.6	. .	15.0	. .	. .	. .	0 5 14.84	18.14	IV.	1	12.0	6 0.2	3.8	0 4 56.70	31 41 4.0
36	5	. .	21.8	36.5	51.4	6.0	20.3	. .	8 51.26	18.17	VI.	9	5.23	41 40.3	4.0	8 33.09	32 16 44.3
37	7	15.6	30.7	45.6	0.3	. .	. .	. .	16 0.04	18.27	V.	4	4.3	16 58.4	4.4	15 41.77	31 52 2.8
38	9.10	. .	. .	. .	. .	58.2	12.4	27.6	16 43.33	18.28	VII.	7	3.57	30 57.3	4.4	16 25.05	32 6 1.7
39	9	19.9	35.0	49.7	. .	. .	. .	. .	20 4.23	18.32	IV.	4	3.44	16 48.8	4.6	19 45.91	31 51 53.4
40	10	. .	. .	56.8	. .	. .	. .	. .	21 11.21	18.34	IV.	3	9.42	14 50.0	4.6	20 52.87	49 54.6
41	8	43.7	58.7	13.7	28.4	42.8	57.3	12.3	33 28.12	18.48	VII.	5	7.2	23 28.4	5.5	33 9.64	58 33.9
42	9	. .	. .	. .	19.2	. .	. .	. .	35 19.04	18.51	V.	1	5.22	2 39.0	5.6	35 0.53	31 37 44.6
43	7	. .	15.6	. .	45.2	59.8	. .	. .	37 45.12	18.54	V.	8	7.8	37 33.8	5.8	37 26.58	32 12 39.6
44	8	45.8	0.8	15.7	30.3	. .	. .	. .	40 30.18	18.57	V.	4	12.49	21 24.3	6.0	40 11.61	31 56 30.3
45	7	. .	. .	. .	. .	. .	11.5	26.4	40 42.22	18.58	VII.	7	12.31	35 17.2	6.1	40 23.64	32 10 23.3
46	9.10	. .	9.9	24.8	. .	. .	. .	. .	44 39.20	18.63	IV.	3	6.3	12 59.3	6.4	44 20.57	31 48 5.7
47	9.10	. .	. .	. .	. .	12.1	. .	41.8	44 57.35	18.63	VII.	3	3.58	11 55.7	6.4	44 38.72	31 47 2.1
48	6	. .	. .	37.1	52.2	. .	. .	. .	52 51.93	18.71	VII.	7	9.14	33 37.6	7.2	52 33.22	32 8 44.8
49	4.5	. .	5.1	20.2	35.1	. .	. .	. .	0 55 34.96	18.74	V.	10	5.3	46 32.0	7.4	0 55 16.22	32 21 39.4
50	8	. .	. .	. .	. .	22.3	. .	. .	1 2 7.49	— 18.83	VII.	2	6.48	— 8 21.8	— 8.1	1 1 48.66	— 31 43 29.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 7,	20	— 26.65	+ 0.001	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 88. OCTOBER 8. A. $D_0 = -34° 4' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	10	26.6	42.0	. .	. .	. .	. .	. .	22 55 12.40	— 16.69	II.	7	7.37	—32 49.1	. .	22 54 55.71	
2	7	25.5	41.0	. .	. .	. .	. .	. .	23 1 11.43	16.78	II.	8	9.57	38 59.7	. .	23 0 54.65	
3	7	. .	29.6	44.5	. .	. .	. .	. .	2 59.65	16.81	III.	5	4.28	22 10.8	. .	2 42.84	
4	10	. .	0.0	15.2	. .	. .	. .	. .	8 30.24	16.89	III.	5	10.30	25 14.0	. .	8 13.35	
5	9	. .	27.5	42.5	. .	. .	. .	. .	9 57.40	16.93	III.	3	2.43	11 17.6	. .	9 40.47	
6	5	6.5	22.0	. .	. .	. .	. .	. .	11 52.28	16.95	II.	6	6.53	27 25.9	. .	11 35.33	
7	8	10.5	26.0	. .	. .	. .	. .	. .	12 56.43	16.95	II.	8	10.1	39 1.7	. .	12 39.45	
8	8	2.0	17.8	. .	. .	. .	. .	. .	13 47.89	16.98	II.	5	9.26	24 41.4	. .	13 30.91	
9	9	42.5	58.0	. .	. .	. .	. .	. .	15 28.17	17.00	II.	4	7.57	18 56.2	. .	15 11.17	
10	8	. .	. .	46.0	1.0	. .	. .	. .	16 0.78	17.03	IV.	2	6.0	7 57.3	. .	15 43.75	
11	9	. .	. .	. .	51.5	6.5	. .	. .	17 51.30	17.05	V.	3	3.51	11 52.0	. .	17 34.25	
12	6	9.0	24.5	. .	. .	. .	. .	. .	23 19 54.73	— 17.07	II.	5	5.57	—22 55.7	. .	23 19 37.66	

ZONE 89. OCTOBER 8. A. $D_0 = -29° 3' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	44.0	57.5	. .	0 0 29.24	— 17.64	VI.	2	3.4	— 6 29.4	— 4.5	0 0 11.60	— 29 9 33.9
2	9	. .	. .	. .	. .	56.5	10.5	. .	2 41.99	17.68	VI.	2	3.35	6 45.1	5.0	2 24.31	9 50.1
3	8	. .	. .	. .	49.5	4.0	. .	. .	8 49.51	17.74	V.	9	6.49	47 24.3	6.2	7 31.77	50 30.5
4	5	. .	47.3	1.9	. .	. .	. .	. .	14 16.21	17.81	III.	10	3.1	45 29.7	7.2	13 58.40	48 36.9
5	7	. .	56.0	10.5	. .	. .	. .	. .	16 24.61	17.83	III.	6	4.20	26 8.6	7.7	16 6.78	29 16.5
6	6	. .	. .	. .	5.2	19.2	. .	. .	17 4.96	17.84	V.	10	2.55	45 26.7	7.8	16 47.12	48 34.5
7	7	. .	. .	30.0	44.0	. .	. .	. .	18 43.87	17.86	IV.	1	6.30	3 14.1	8.1	18 26.01	6 22.2
8	8	. .	. .	. .	. .	32.5	47.0	. .	19 18.24	17.87	VI.	3	3.0	11 27.1	8.3	19 0.37	14 35.4
9	5	. .	. .	. .	. .	. .	38.5	. .	20 9.99	17.88	VI.	1	2.52	1 23.8	8.4	19 52.11	4 32.2
10	9	. .	. .	. .	. .	46.5	1.0	. .	21 32.25	17.89	VI.	8	12.0	40 0.8	8.7	21 14.36	43 9.5
11	7	. .	52.5	7.0	. .	. .	. .	. .	27 21.27	17.95	III.	8	8.2	38 0.7	10.0	27 3.32	41 10.7
12	8	42.8	57.2	. .	. .	. .	. .	. .	0 29 26.05	— 17.98	II.	8	7.1	—37 29.7	— 10.4	0 29 8.07	— 29 40 40.1

ZONE 90. OCTOBER 9. K: $D_0 = -26° 24' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	. .	25.8	23 56 43.61	— 18.10	VII.	4	7.38	—18 47.0	— 7.1	23 56 25.51	— 26 43 34.1
2	9	25.9	40.3	54.3	8.3	. .	. .	. .	0 1 8.21	18.15	IV.	5	8.7	24 1.8	7.0	0 0 50.06	26 48 48.8
3	9	. .	. .	. .	. .	. .	2.1	16.4	1 34.30	18.16	VII.	8	9.30	38 44.5	7.0	1 16.14	27 3 31.5
4	8.9	. .	. .	. .	. .	. .	. .	20.4	2 38.20	18.17	VII.	4	5.48	17 51.5	7.0	2 20.03	26 42 38.5
5	10	. .	. .	. .	9.2	. .	36.8	. .	4 8.94	18.17	VII.	9	2.40	40 16.9	6.9	4 50.77	27 5 3.8
6	8	. .	. .	42.6	. .	. .	. .	. .	5 56.78	18.20	IV.	10	1.46	44 51.4	6.9	5 38.58	9 38.2
7	7	. .	. .	. .	. .	39.9	. .	. .	6 25.92	18.19	VI.	9	6.55	42 25.9	6.9	6 7.73	27 7 12.8
8	10	. .	. .	. .	. .	. .	49.0	. .	7 21.12	18.21	VII.	4	6.45	18 20.3	6.9	7 2.91	26 43 7.2
9	8	57.7	11.9	26.0	40.0	. .	. .	. .	10 39.87	18.26	IV.	4	10.22	20 10.3	6.9	10 21.61	26 44 57.2
10	9	43.0	57.3	11.4	. .	. .	. .	. .	13 25.52	18.27	III.	9	8.10	43 3.9	6.9	13 7.25	27 7 50.8
11	9	. .	. .	. .	50.4	4.4	18.1	. .	13 50.27	18.28	VI.	9	3.56	40 55.5	6.9	13 31.99	27 5 42.4
12	11	. .	. .	28.5	42.3	. .	. .	. .	24 42.14	18.42	V.	2	5.15	7 36.1	6.9	24 23.72	26 32 23.0
13	7	44.6	58.7	12.9	27.1	. .	. .	. .	26 26.89	18.42	IV.	7	2.52	30 24.7	7.0	26 8.47	55 11.7
14	7	. .	25.0	39.2	53.3	7.2	. .	. .	27 53.16	18.45	IV.	7	6.49	32 24.4	7.0	27 34.71	57 11.4
15	8	39.9	54.1	8.2	22.1	. .	. .	. .	30 21.98	18.48	IV.	2	9.27	9 43.5	7.0	30 3.50	34 30.5
16	9	35.2	49.2	3.5	. .	. .	. .	. .	32 17.36	18.49	III.	5	7.58	23 57.2	7.1	31 58.87	48 44.3
17	10	. .	. .	. .	47.5	. .	. .	. .	0 32 47.35	— 18.50	IV.	5	8.26	—24 11.4	— 7.1	0 32 28.85	— 26 48 58.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Oct. 8,	20	— 26.23	+ 0.002	+ 0.265	— 0.106	— 0.086
Oct. 9,	20	— 26.67	— 0.012	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(89) 3. Minutes assumed as 7 instead of 8. Micrometer wire assumed as 10 instead of 9.

ZONE 90. OCTOBER 9. K. $D_0 = -26° 24' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
18	8	. .	. .	. .	. .	. .	. .	44.2	0 33 2.12	— 18.50	VII.	6	7.24	−27 41.2	— 7.1	0 32 43.62	— 26 52 28.3
19	10	. .	. .	. .	45.3	. .	. .	. .	34 45.15	18.53	IV.	1	8.5	4 2.6	7.1	34 26.62	28 49.7
20	8	. .	51.9	5.8	19.9	. .	. .	. .	36 19.75	18.54	III.	4	9.59	19 58.6	7.2	36 1.21	26 44 45.8
21	9	. .	41.8	. .	9.9	. .	. .	. .	41 9.89	18.58	IV.	10	5.13	46 35.9	7.3	40 51.31	27 11 23.2
22	7	. .	. .	. .	. .	. .	56.2	10.3	42 28.33	18.59	VII.	10	5.29?	46 43.6	7.4	42 9.74	11 31.0
23	7.8	. .	. .	3.0	17.3	31.0	. .	. .	45 17.16	18.61	V.	10	8.21	48 10.9	7.5	44 58.55	27 12 58.4
24	8.9	0.5	14.7	28.8	42.8	. .	. .	. .	48 42.69	18.66	III.	5	5.50	22 52.6	7.6	48 24.03	26 47 40.2
25	9	. .	. .	. .	. .	. .	33.7	48.2	49 6.03	18.65	VII.	10	2.6	45 1.1	7.6	48 47.38	27 9 48.7
26	7	. .	. .	59.1	13.2	27.0	. .	. .	51 12.95	18.67	V.	4	3.7	16 30.5	7.7	50 54.28	26 41 18.2
27	8	. .	23.7	. .	51.9	. .	. .	. .	52 51.69	18.71	V.	3	11.17	15 38.5	7.8	52 32.98	40 26.3
28	7	. .	. .	. .	. .	48.8	2.4	16.8	53 34.58	18.71	VII.	2	7.19	8 38.4	7.8	53 15.87	33 26.2
29	8	36.0	50.2	4.4	18.4	. .	. .	. .	56 18.35	18.72	IV.	7	10.34	34 18.0	8.0	55 59.63	26 59 6.0
30	8	. .	24.6	38.6	53.0	6.6	. .	. .	0 58 52.75	18.74	VI.	9	5.41	41 48.5	8.1	0 58 34.01	27 6 36.6
31	8	8.2	22.6	36.7	50.3	. .	. .	. .	1 1 50.38	18.79	VI.	3	10.9	15 4.1	8.2	1 1 31.59	26 39 52.3
32	6.7	. .	. .	56.1	10.1	24.0	37.4	. .	3 9.88	18.79	VII.	7	11.45	34 53.5	8.3	2 51.09	26 59 41.8
33	8	37.0	51.0	. .	19.6	. .	. .	. .	5 19.37	18.79	IV.	9	5.12	41 34.0	8.4	5 0.58	27 6 22.4
34	8	. .	. .	. .	47.6	1.6	15.3	. .	9 47.47	18.86	VI.	1	6.28	3 13.4	8.7	9 28.61	26 28 2.1
35	8	4.3	18.6	32.8	. .	. .	. .	. .	11 46.53	18.87	IV.	4	3.23	16 38.6	8.8	11 27.66	41 27.4
36	10	11.8	26.0	40.3	54.4	. .	. .	. .	16 54.22	18.92	IV.	7	9.30	33 45.7	9.2	16 35.30	58 34.9
37	8	. .	12.9	26.9	41.1	. .	. .	. .	20 40.83	18.96	VI.	4	5.46	17 50.7	9.4	20 21.87	42 40.1
38	9	. .	. .	. .	. .	. .	24.9	39.6	21 57.16	18.97	VII.	2	4.44	7 20.1	9.5	21 38.19	32 9.6
39	4.5	. .	. .	. .	37.6	51.2	5.1	19.3	23 37.26	18.98	VII.	6	10.34	34 17.6	9.7	23 18.28	59 7.3
40	8	. .	. .	. .	. .	44.3	. .	. .	26 30.17	19.01	V.	1	3.0	1 28.5	9.9	26 11.16	26 18.4
41	9.10	. .	59.7	13.5	27.6	. .	. .	. .	29 27.45	19.03	IV.	3	13.10	16 35.6	10.1	29 8.42	41 25.7
42	10	. .	. .	. .	. .	29.6	. .	. .	30 15.58	19.03	VII.	7	7.34	32 46.7	10.2	29 56.55	57 36.9
43	10	. .	10.0	24.0	. .	. .	. .	. .	34 37.99	19.07	IV.	6	6.22	27 10.2	10.6	34 18.92	26 52 0.8
44	10	. .	. .	. .	. .	23.3	. .	. .	35 9.33	19.06	VII.	9	10.19	44 8.7	10.6	34 50.27	27 8 59.3
45	9	52.8	7.1	. .	. .	. .	. .	. .	38 35.29	19.10	III.	9	6.8	42 2.3	10.9	38 16.19	6 53.2
46	7	. .	. .	. .	55.0	. .	. .	. .	38 54.85	19.10	IV.	9	10.30	44 14.7	10.9	38 35.75	9 5.6
47	7	. .	. .	. .	. .	. .	33.6	. .	39 5.64	19.11	VII.	8	9.41	38 50.0	11.0	38 46.53	27 3 41.0
48	9	. .	. .	. .	. .	45.4	. .	. .	40 31.27	19.13	V.	1	3.49	1 53.2	11.1	40 12.14	26 26 44.3
49	7	. .	. .	44.7	59.0	. .	. .	. .	41 58.79	19.13	IV.	8	2.44	35 19.8	11.2	41 39.66	27 0 11.0
50	7	. .	. .	. .	. .	. .	51.3	5.7	43 23.48	19.14	VII.	5	4.10	22 1.7	11.4	42 4.34	26 46 53.1
51	8	. .	. .	0.5	14.2	28.0	. .	. .	46 14.03	19.17	V.	2	8.30	9 14.6	11.7	45 54.86	26 34 6.3
52	9	. .	23.9	37.9	52.3	. .	. .	. .	47 52.08	19.17	IV.	8	12.20	40 10.7	11.9	47 33.91	27 5 2.6
53	8	. .	17.8	31.8	46.0	. .	. .	. .	50 45.85	19.20	VI.	7	6.13	32 6.0	12.2	50 26.65	26 56 58.2
54	6	3.4	17.8	31.8	46.1	. .	. .	. .	52 45.97	19.20	V.	9	11.55	44 57.5	12.4	52 26.77	27 9 49.9
55	9	. .	. .	. .	54.8	. .	. .	. .	1 53 54.65	19.22	V.	7	6.52	32 25.8	12.5	1 53 35.43	26 57 18.3
56	9	. .	. .	18.4	. .	. .	. .	. .	2 0 32.24	19.27	V.	5	4.15	22 4.6	13.3	2 0 12.97	26 46 57.9
57	9	24.9	. .	. .	. .	. .	. .	. .	2 7.31	19.28	IV.	8	3.40	35 48.1	13.5	1 58.03	27 0 41.6
58	9	. .	. .	37.5	51.8	5.7	. .	. .	2 51.62	19.30	VI.	8	1.47	34 50.8	13.6	2 32.32	26 59 44.4
59	7.8	24.4	38.7	52.7	. .	. .	. .	. .	6 6.81	19.32	IV.	8	5.30	36 43.6	14.0	5 47.49	27 1 37.6
60	10	10.3	. .	. .	. .	. .	. .	. .	8 52.45	19.34	III.	3	3.53	11 54.3	14.4	8 33.11	26 36 48.7
61	7	. .	. .	. .	12.0	. .	. .	. .	9 11.85	19.32	VI.	10	9.4	48 32.4	14.4	8 52.53	27 13 26.8
62	7	. .	54.5	8.6	. .	. .	. .	. .	12 22.74	19.34	IV.	9	8.16	43 7.0	14.9	12 3.40	27 8 1.9
63	6.5	. .	. .	. .	. .	48.8	2.1	16.1	13 34.27	19.38	VII.	3	9.10	14 34.0	15.0	12 14.89	26 39 29.0
64	5	. .	26.8	41.0	55.1	9.0	22.7	. .	17 54.79	19.40	V.	2	3.51	6 53.7	15.6	17 35.39	26 31 49.3
65	7.8	10.9	25.6	39.3	53.6	. .	. .	. .	21 53.51	19.41	V.	9	4.54	41 21.7	16.2	21 34.10	27 6 17.9
66	10	. .	. .	. .	. .	43.3	. .	. .	23 29.25	19.43	VII.	5	3.3	21 27.8	16.5	23 9.82	26 46 24.3
67	7.8	14.0	28.3	42.7	. .	. .	. .	. .	2 26 56.49	— 19.45	IV.	7	6.31	−32 15.3	— 17.0	2 26 37.04	— 26 57 12.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(90) 39. Hor. thread assumed as 7 instead of 6.
(90) 50. Minutes assumed as 42 instead of 43.
(90) 63. Minutes assumed as 12 instead of 13.

ZONE 91. OCTOBER 10. A. $D_0 = -23° 58' 35''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s	° ′ ″
1	8	. .	15.8	29.5	. .	. .	. .	. .	19 55 43.10	— 15.45	II.	6	3.43	—25 49.8	. .	19 55 27.65	
2	7	. .	30.0	44.0	. .	. .	. .	. .	58 57.40	15.49	II.	4	10.48	20 23.3	. .	58 41.91	
3	9	. .	. .	29.0	42.8	. .	. .	. .	19 59 42.63	15.48	IV.	7	3.49	30 53.4	. .	19 59 27.15	
4	9	. .	. .	. .	36.0	49.9	. .	. .	20 0 36.03	15.49	V.	6	10.31	29 15.9	. .	20 0 20.54	
5	11	. .	. .	. .	. .	. .	. .	31.0	0 49.80	15.51	VII.	4	10.29	20 13.5	. .	0 34.29	
6	8	. .	. .	. .	10.8	24.5	. .	. .	2 10.73	15.51	V.	6	10.41	29 21.0	. .	1 55.22	
7	7	. .	. .	. .	. .	. .	. .	26.2	2 45.25	15.49	VII.	9	6.00	41 57.7	. .	2 29.76	
8	8	. .	. .	39.5	53.0	. .	. .	. .	6 53.05	15.52	IV.	9	4.10	41 2.5	. .	6 37.53	
9	7	. .	. .	. .	. .	44.5	57.5	. .	7 30.53	15.56	VI.	4	. .	. . .	. .	7 14.97	
10	10	. .	. .	46.5	0.8	. .	. .	. .	9 0.40	15.56	IV.	7	8.32	33 16.3	. .	8 44.84	
11	6	. .	. .	0.9	14.5	. .	. .	. .	10 14.38	15.58	IV.	5	7.9	23 32.5	. .	9 58.80	
12	11	. .	. .	50.5	4.0	. .	. .	. .	11 3.88	15.60	IV.	4	5.35	17 45.4	. .	10 48.28	
13	11	. .	. .	. .	5.0	18.5	. .	. .	20 12 4.83	— 15.59	V.	7	7.20	—32 39.8	. .	20 11 49.24	

ZONE 92. OCTOBER 10. A. $D_0 = -36° 29' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	21.0	37.0	. .	. .	. .	. .	0 31 52.25	. .	III.	4	3.26	—16 38.7	— 3.5	. . .	— 36 46 12.2
2	7	52.5	8.8	. .	. .	. .	. .	. .	35 39.81	. .	II.	5	2.35	21 13.2	3.8	. . .	50 47.0
3	8	. .	. .	. .	44.0	59.5	. .	. .	39 43.84	. .	V.	5	2.59	21 25.5	4.2	. . .	36 50 59.7
4	7	20.5	36.5	. .	. .	. .	. .	. .	42 7.85	. .	II.	7	11.50	34 57.9	4.4	. . .	37 4 32.3
5	8	. .	43.0	59.0	. .	. .	. .	. .	45 14.06	. .	III.	1	8.9	4 16.1	4.7	. . .	36 33 50.8
6	8	. .	. .	. .	. .	40.5	56.0	. .	50 24.84	. .	VI.	10	2.44	45 24.1	5.2	. . .	37 14 59.3
7	6	. .	18.0	33.8	. .	. .	. .	. .	0 53 49.39	. .	III.	7	8.0	33 1.6	5.5	. . .	37 2 37.1
8	9	. .	57.0	13.0	. .	. .	. .	. .	1 2 28.40	— 19.05	III.	6	6.11	27 5.0	6.5	1 2 9.35	36 56 41.5
9	7	. .	45.0	2.0	. .	. .	. .	. .	6 16.54	19.09	III.	1	5.58	2 54.6	6.9	5 57.45	32 31.5
10	8	. .	44.5	59.5	. .	. .	. .	. .	7 15.43	19.12	III.	7	0.40	29 18.7	7.0	6 56.31	36 58 55.7
11	8	. .	27.0	42.8	. .	. .	. .	. .	11 58.39	19.19	III.	7	8.23	33 13.2	7.6	11 39.20	37 2 50.8
12	7	. .	. .	27.0	43.0	. .	. .	. .	13 42.71	19.21	IV.	7	6.28	32 15.0	7.8	13 23.50	1 52.8
13	9	. .	. .	. .	19.5	35.0	. .	. .	20 19.37	19.30	V.	8	11.38	39 52.1	8.7	20 0.07	37 9 30.8
14	9	. .	. .	36.0	52.0	. .	. .	. .	21 51.62	19.31	IV.	5	3.40	21 46.3	8.9	21 32.31	36 51 25.2
15	8	. .	. .	20.0	35.5	. .	. .	. .	23 35.55	19.35	IV.	9	7.1	42 32.2	9.2	23 16.20	37 12 11.4
16	10	. .	. .	. .	. .	. .	31.0	46.0	23 59.47	19.35	VII.	7	10.30	34 17.1	9.2	23 40.12	37 3 56.3
17	9	. .	3.0	18.5	. .	. .	. .	. .	29 34.00	19.42	III.	4	3.31	16 41.2	10.0	29 14.58	36 46 21.2
18	6	. .	. .	. .	. .	. .	. .	23.5	29 36.66	19.43	VII.	8	8.28	38 15.4	10.0	29 17.23	37 7 55.4
19	5	. .	35.0	50.5	. .	. .	. .	. .	32 6.47	19.47	III.	10	7.1	47 34.5	10.4	31 47.00	37 17 14.9
20	9	. .	. .	55.0	11.0	. .	. .	. .	33 10.61	19.46	IV.	4	8.0	18 57.5	10.5	32 51.15	36 48 38.0
21	8	. .	. .	59.7	15.0	. .	. .	. .	34 15.17	19.48	IV.	9	10.35	44 20.7	10.7	33 55.69	37 14 1.4
22	8	. .	. .	. .	. .	. .	11.5	. .	36 40.54	19.50	VI.	1	8.37	4 15.0	11.0	36 21.04	36 33 56.0
23	8	21.5	37.5	. .	. .	. .	. .	. .	1 39 8.68	— 19.54	II.	5	4.9	—22 0.8	— 11.4	1 38 48.64	— 36 51 42.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 10,	20	— 26.60	— 0.019	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(91) 7. Transit over T. VII assumed as 26ˢ.2 instead of 36ˢ.2.
(92) 5. Micrometer reading assumed as 8ʳ.39 instead of 8ʳ.9.

Zone 93. October 15. A. $D_\circ = -32° 45' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	Micrometer.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	59.0	14.5	. .	. .	0 1 59.26	— 20.82	V.	10	8.0	— 1 11.3	. .	0 1 38.44	
2	9	18.5	32.5	. .	. .	. .	. .	. .	4 3.04	20.85	II.	7	3.9	30 33.5	. .	3 42.29	
3	10	53.5	9.0	. .	. .	. .	. .	. .	7 38.59	20.91	II.	3	9.58	14 57.7	. .	7 17.68	
4	6	. .	59.0	14.5	. .	. .	. .	. .	9 29.39	20.92	III.	10	6.46	47 24.7	. .	9 8.47	
5	9	17.5	33.0	. .	. .	. .	. .	. .	20 2.80	21.08	II.	7	5.19	31 39.2	. .	19 41.72	
6	10	. .	. .	17.0	32.5	. .	. .	. .	20 32.09	21.09	IV.	6	9.20	28 40.4	. .	20 11.00	
7	7	. .	58.2	15.0	. .	. .	. .	. .	22? 29.14?	. .	III.	9	2.56	40 26.5	. .	(22)	
8	8	. .	. .	. .	. .	. .	17.5	32.0	22 47.46	21.12	VII.	5	3.45	21 48.7	. .	22 26.34	
9	7	36.0	52.0	. .	. .	. .	. .	. .	25 21.27	21.15	II.	2	7.57	8 56.5	. .	25 0.12	
10	8	. .	32.0	47.0	. .	. .	. .	. .	27 1.78	21.18	III.	5	5.59	22 56.9	. .	26 40.60	
11	8	. .	49.5	5.2	. .	. .	. .	. .	31 19.44	21.23	III.	2	5.35	7 44.9	. .	30 58.21	
12	10	6.0	21.0	. .	. .	. .	. .	. .	39 40.80	21.36	II.	4	9.4	19 30.2	. .	39 19.44	
13	10	. .	14.0	29.5	. .	. .	. .	. .	40 44.18	21.37	III.	7	8.2	33 1.8	. .	40 22.81	
14	9	. .	. .	. .	. .	18.0	32.5	. .	41 2.92	21.37	VI.	5	10.14	23 5.4	. .	40 41.55	
15	8	. .	42.0	57.0	. .	. .	. .	. .	45 11.81	21.43	III.	5	9.25	24 41.1	. .	44 50.38	
16	6	52.5	7.5	. .	. .	. .	. .	. .	0 56 37.26	— 21.59	II.	2	7.57	— 8 56.5	. .	0 56 15.67	

Zone 94. October 16. K. $D_\circ = -38° 58' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	Micrometer.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	10.2	26.4	. .	. .	. .	21 3 26.25	— 18.28	VII.	4	8.23	— 19 7.9	— 26.8	21 3 7.97	— 39 17 34.7
2	10	. .	. .	. .	4.6	20.7	. .	. .	5 4.53	18.32	VI.	3	6.23	13 6.5	26.4	4 46.21	11 32.9
3	8.	15.0	31.6	47.8	. .	. .	. .	. .	8 4.12	18.32	IV.	9	5.54	42 0.1	25.7	7 45.80	40 25.8
4	7.8	. .	. .	. .	47.2	3.0	18.8	. .	9 46.77	18.38	VI.	6	8.14	28 7.4	25.4	9 28.39	26 32.8
5	9	. .	5.1	21.6	37.9	. .	. .	. .	11 37.61	18.41	V.	6	4.55	26 26.6	25.0	11 19.20	24 51.6
6	10	. .	. .	. .	. .	57.1	12.8	. .	19 40.68	18.54	VII.	7	7.4	32 33.4	23.2	19 22.14	30 56.6
7	10	. .	. .	. .	14.5	30.4	46.2	. .	20 14.19	18.55	VI.	6	12.41	30 22.8	23.1	19 55.59	28 45.9
8	8.9	. .	. .	. .	. .	55.5	11.2	27.8	22 39.19	18.61	VII.	4	8.10	19 1.3	22.6	22 20.58	17 23.9
9	6	. .	1.1	17.4	. .	. .	. .	. .	35 33.22	18.84	IV.	3	11.2	15 28.4	20.1	35 14.43	13 48.5
10	9	. .	. .	. .	2.8	19.2	. .	. .	36 2.80	18.84	VII.	2	8.39	9 14.3	20.0	35 44.04	7 34.3
11	10	. .	. .	. .	. .	52.8	. .	. .	37 36.66	18.85	VII.	6	4.42	26 19.5	19.7	37 17.95	24 39.2
12	9	. .	. .	. .	. .	. .	26.2	. .	39 53.84	18.86	VII.	10	8.7	48 9.8	19.3	39 34.66	46 29.1
13	7	. .	. .	. .	. .	27.8	43.3	0.1	42 11.42	18.93	VII.	4	9.52	19 53.0	18.9	41 52.49	18 11.9
14	10	. .	. .	. .	. .	46.6	. .	. .	45 30.39	19.00	VI.	3	4.18	12 3.2	18.3	45 11.55	10 21.5
15	8.7	. .	. .	. .	. .	. .	56.8	13.3	47 24.76	18.98	VII.	9	9.23	43 45.5	18.0	47 5.63	42 3.5
16	5.4	. .	. .	16.0	32.1	48.0	3.7	. .	50 31.72	19.09	VI.	2	6.46	8 17.3	17.4	50 12.67	6 34.7
17	8	48.1	4.8	21.0	. .	53.5	. .	. .	55 37.23	19.16	VI.	8	7.13	37 38.9	16.6	55 18.13	35 55.5
18	10	. .	. .	. .	31.3	. .	. .	. .	21 58 31.12	19.18	VI.	9	4.55	41 29.8	16.2	21 58 11.94	39 46.0
19	7	. .	53.2	9.5	25.3	. .	. .	. .	22 3 25.14	19.32	IV.	1	8.34	4 11.6	15.4	22 3 5.82	2 27.0
20	9	29.5	45.8	2.4	. .	. .	. .	. .	10 18.04	19.44	IV.	3	5.30	12 40.0	14.5	9 58.60	10 54.5
21	8	. .	0.4	16.6	33.0	. .	. .	. .	11 32.77	19.44	V.	7	7.16	32 40.1	14.3	11 13.33	30 54.4
22	9	. .	41.3	57.3	. .	. .	. .	. .	14 13.53	19.48	IV.	7	6.38	32 20.9	14.0	13 54.05	30 34.9
23	9	. .	. .	. .	. .	48.8	. .	. .	14 32.75	19.48	V.	9	4.44	41 24.5	13.9	14 13.27	39 38.4
24	10	. .	17.7	33.9	. .	. .	. .	. .	24 50.03	19.68	VI.	7	6.37	32 20.1	12.7	24 30.35	30 32.8
25	10	. .	33.2	49.8	. .	. .	. .	. .	27 5.45	19.70	V.	3	8.25	14 8.7	12.5	25 45.75	12 21.2
26	8	. .	. .	. .	. .	. .	. .	0.8	27 12.35	19.72	VII.	7	5.33	31 47.2	12.4	26 52.63	29 59.6
27	6	46.9	3.6	20.1	. .	. .	. .	. .	30 35.74	19.81	III.	4	4.15	17 2.7	12.0	30 15.93	15 14.7
28	10	. .	35.6	51.8	7.7	. .	. .	. .	36 7.69	19.90	V.	5	4.36	22 14.4	11.5	35 47.79	20 25.9
29	7	. .	. .	18.9	34.8	50.8	. .	. .	22 39 34.51	— 20.00	V.	1	4.48	— 2 16.9	— 11.2	22 39 14.51	— 39 0 28.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 15,	20	— 29.05	— 0.014	+ 0.265	— 0.106	— 0.086
Oct. 16,	20	— 29.98	— 0.014	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	Thermom. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(93) 1. Minutes assumed as 0 instead of 1, and micr. reading as 12^r.00 instead of 8^r.00, to agree with Mural Z., Sept. 19 and Dec. 4.
(94) 23. Differs 2^s.36 in right ascension from Mural Z., 1846, October 17.
(94) 25. Minutes assumed as 26.

ZONE 94. OCTOBER 16. K. D_0=—38° 58′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
30	8	. .	. .	40.6	57.0	12.8	. .	. .	22 43 56.83	— 20.01	VI.	10	5.13	—46 41.8	— 10.8	22 43 36.82	— 39 44 52.6
31	9	4.7	20.8	37.3	. .	. .	. .	. .	47 53.35	20.11	IV.	6	11.11	29 37.5	10.5	47 33.24	27 48.0
32	10	. .	38.7	54.8	11.2	. .	. .	. .	53 11.09	20.19	V.	8	13.16	40 43.4	10.1	52 50.90	38 53.5
33	6	38.3	54.6	11.0	27.1	. .	. .	. .	55 26.85	20.27	V.	3	12.34	16 15.0	9.9	55 6.58	14 24.9
34	9	. .	38.6	55.0	. .	. .	. .	. .	22 58 11.14	— 20.28	IV.	8	9.49	38 58.4	— 9.7	22 57 50.86	— 39 37 8.1
35	6	. .	. .	. .	52.0	8.0	23.8	. .	. . . . .	. .	VII.	9	9.53	—44 0.7			

ZONE 95. OCTOBER 16. K. D_0=—27° 43′ 0″.

1	9	. .	. .	. .	. .	11.2	25.0	. .	1 0 56.94	— 22.13	VI.	1	8.45	— 4 22.4	— 3.8	1 0 34.81	— 27 47 26.2
2	10	. .	11.3	26.3	. .	. .	. .	. .	4 39.80	22.17	V.	3	4.43	12 19.4	3.9	4 17.63	55 23.3
3	9	. .	. .	. .	50.8	. .	18.9	. .	10 50.75	22.23	VI.	1	10.32	5 16.4	4.1	10 28.52	27 48 20.5
4	9	36.3	50.7	5.3	19.3	. .	. .	. .	15 19.06	22.29	V.	4	6.28	18 12.0	4.3	14 56.77	28 1 16.3
5	8	. .	52.0	6.1	20.1	34.6	. .	. .	21 20.06	22.34	VI.	2	10.52	10 26.0	4.6	20 57.72	27 53 30.6
6	8	. .	. .	. .	21.3	. .	. .	. .	23 21.14	22.36	V.	1	3.38	1 47.4	4.7	22 58.78	27 44 52.1
7	7	. .	46.8	1.0	15.2	. .	. .	. .	25 15.24	22.40	V.	10	3.18	45 38.0	4.8	24 52.84	28 28 42.8
8	8	57.7	12.2	26.2	40.7	. .	. .	. .	27 40.44	22.42	VI.	5	10.1	24 59.2	4.9	27 18.02	28 8 4.1
9	9	. .	. .	8.7	22.8	36.7	. .	. .	31 22.54	22.44	VII.	3	12.22	16 10.9	5.2	31 0.10	27 59 16.1
10	10	. .	. .	. .	. .	. .	46.7	. .	32 18.60	22.46	VII.	4	5.57	17 56.0	5.2	31 56.14	28 1 1.2
11	10	. .	. .	46.1	. .	. .	. .	. .	39 0.11	22.52	IV.	6	5.30	26 44.0	5.6	38 37.59	9 49.6
12	5	. .	. .	. .	. .	41.4	55.1	9.9	39 27.15	22.52	VII.	5	5.55	22 54.7	5.7	39 4.63	6 0.4
13	7	. .	. .	37.2	. .	5.3	. .	. .	42 51.35	22.57	VI.	10	8.40	48 20.6	5.9	42 28.78	31 26.5
14	8	. .	15.2	29.3	43.8	. .	. .	. .	45 43.68	22.59	VI.	10	5.54	46 56.7	6.2	45 21.09	28 30 2.9
15	9	. .	. .	. .	. .	. .	40.7	55.4	46 12.64	22.58	VII.	4	2.17	16 4.8	6.2	45 50.06	27 59 11.0
16	8	. .	36.3	50.5	5.2	. .	. .	. .	49 4.89	22.62	VI.	9	9.48	43 53.5	6.4	48 42.27	28 26 59.9
17	9	. .	. .	55.5	10.0	23.9	. .	. .	50 9.57	22.62	VI.	7	11.38	34 50.2	6.5	49 46.95	28 17 56.7
18	11	. .	. .	. .	33.5	47.4	. .	. .	52 33.25	22.64	VII.	3	11.43	15 51.2	6.7	52 10.61	27 58 57.9
19	9	. .	. .	. .	. .	. .	48.3	. .	53 20.15	22.65	VII.	6	9.59	28 59.5	6.8	52 57.50	28 12 6.3
20	9	. .	. .	. .	39.6	53.9	7.4	. .	1 54 39.47	22.66	VII.	8	6.12	37 4.6	6.9	1 54 16.81	20 11.5
21	5	. .	16.2	30.7	45.1	. .	. .	. .	2 1 44.81	22.73	V.	7	10.8	34 4.9	7.6	2 1 22.08	17 12.5
22	10	. .	. .	. .	8.1	. .	. .	. .	3 7.94	22.74	V.	10	5.39	46 49.3	7.7	2 45.20	28 29 57.0
23	8	. .	. .	22.4	36.5	50.6	. .	. .	4 36.29	22.74	VI.	3	5.28	12 42.0	7.9	4 13.55	27 55 49.9
24	7.8	. .	. .	34.9	. .	3.0	. .	. .	5 48.89	22.76	VI.	7	2.7	30 1.8	8.0	5 26.13	28 13 9.8
25	8	20.3	34.6	49.0	. .	. .	. .	. .	14 2.88	22.82	IV.	3	9.19	14 38.9	8.8	13 40.06	27 57 47.7
26	9	. .	. .	11.0	25.0	39.2	. .	. .	19 24.81	22.86	VI.	1	12.19	6 10.4	9.4	19 1.95	27 49 19.8
27	10	. .	45.2	59.9	. .	. .	. .	. .	21 13.84	22.89	IV.	7	11.49	34 56.0	9.6	20 50.95	28 18 5.6
28	9	8.0	22.6	36.2	. .	. .	. .	. .	22 50.54	22.89	IV.	3	12.59	21 29.0	9.8	22 27.65	28 4 38.8
29	8	. .	. .	. .	. .	. .	. .	41.1	22 58.34	22.89	VII.	3	5.24	12 39.7	9.8	22 35.45	27 55 49.5
30	7	. .	50.6	4.8	19.0	. .	. .	. .	25 18.88	22.92	IV.	6	6.17	27 7.7	10.1	24 55.96	28 10 17.8
31	7	. .	. .	. .	. .	14.0	27.8	42.3	25 59.79	22.93	VII.	9	10.22	44 10.4	10.2	25 36.86	28 27 20.6
32	10	. .	. .	. .	. .	0.6	14.6	. .	29 46.44	22.94	VII.	2	3.6	6 30.4	10.7	29 23.50	27 49 41.1
33	8	. .	. .	20.9	. .	49.2	. .	. .	32 34.95	22.97	VI.	6	5.11	26 34.2	11.0	32 11.98	28 9 45.2
34	6	. .	. .	. .	. .	. .	22.4	36.5	32 54.14	22.98	VII.	9	2.6	45 0.8	11.1	32 31.16	28 11.9
35	8	. .	53.1	7.4	. .	. .	. .	. .	35 21.44	22.99	IV.	6	4.49	26 23.3	11.4	34 58.45	28 9 34.7
36	8	. .	. .	44.5	58.6	. .	. .	. .	35 58.36	22.98	IV.	3	4.7	12 1.3	11.5	35 35.38	27 55 12.8
37	11	. .	. .	. .	16.3	. .	. .	. .	41 16.14	23.02	IV.	3	5.22	12 39.1	12.2	40 53.12	27 55 51.3
38	9	. .	. .	8.3	22.6	. .	. .	. .	45 22.44	23.05	V.	7	6.2	32 0.6	12.8	44 59.39	28 15 13.4
39	9	. .	0.2	. .	28.9	. .	. .	. .	2 47 28.75	— 23.07	V.	9	11.58	—44 59.3	— 13.0	2 47 5.68	— 28 28 12.3

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(95) 28. Micrometer thread assumed as 4 instead of 3.
(95) 34. Micrometer thread assumed as 10 instead of 9.

ZONE 95. OCTOBER 16. K. $D_\circ = -27^\circ\ 43'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
41	8	. .	. .	30.7	. .	59.0	. .	. .	2 48 44.94	— 23.08	V.	10	6.18	—47 9.0	— 13.2	2 48 21.86	— 28 30 22.2
42	10	. .	7.3	21.6	. .	. .	. .	. .	51 35.95	23.09	IV.	7	8.5	33 2.8	13.6	51 12.66	16 16.4
43	10	. .	. .	. .	. .	. .	16.0	30.3	51 47.83	23.09	VII.	7	12.42	35 22.3	13.6	51 24.74	18 35.9
44	6	57.8	12.0	26.3	40.8	. .	. .	. .	54 40.52	23.11	V.	7	3.37	30 47.4	14.1	54 17.41	14 1.5
45	9	. .	. .	. .	. .	28.1	42.0	. .	55 13.89	23.12	VII.	5	4.11	22 2.1	14.2	54 50.77	5 16.3
46	10	. .	2.0	16.2	. .	. .	. .	. .	2 59 30.35	— 23.14	IV.	7	4.51	—31 24.8	— 14.8	2 59 7.21	— 28 14 39.6

ZONE 96. OCTOBER 17. A. $D_\circ = -39^\circ\ 0'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	30.0	46.5	. .	. .	. .	. .	. .	23 9 18.83	— 20.56	II.	6	5.47	—26 52.8	— 61.4	23 8 58.27	— 39 27 54.2
2	7	. .	25.0	41.3	. .	. .	. .	. .	11 57.12	20.63	II.	3	9.28	14 40.5	63.0	11 56.49	15 3.5
3	7	. .	. .	. .	46.5	2.5	. .	. .	12 46.32	20.63	V.	4	6.1	17 56.5	63.4	12 25.69	18 59.9
4	10	. .	. .	. .	. .	32.2	48.0	. .	16 15.93	20.70	VI.	3	4.4	11 56.1	65.5	15 55.23	13 1.6
5	7	. .	6.8	23.0	. .	. .	. .	. .	20 39.05	20.77	III.	6	6.17	27 8.2	68.0	20 18.28	28 16.2
6	8	. .	. .	. .	. .	. .	21.0	37.5	20 48.81	20.78	VII.	2	7.47	8 48.0	68.1	20 28.03	9 56.1
7	8	. .	. .	39.5	55.3	. .	. .	. .	22 55.11	20.82	IV.	2	6.30	8 9.6	69.4	22 34.29	9 19.0
8	8	10.0	26.4	. .	. .	. .	. .	. .	26 58.47	20.90	II.	1	9.8	4 28.7	71.8	26 37.57	5 40.5
9	10	. .	. .	21.5	38.5	. .	. .	. .	27 37.79	20.91	IV.	4	6.30	18 11.3	72.2	27 16.88	19 23.5
10	7	. .	. .	. .	. .	. .	39.0	55.5	28 6.96	20.90	VII.	10	4.0	46 4.3	72.5	27 46.06	47 16.8
11	7	57.8	14.2	. .	. .	. .	. .	. .	23 30 46.45	— 20.96	II.	4	6.38	—18 15.0	— 74.1	23 30 25.49	— 39 19 29.1

ZONE 97. OCTOBER 19. K. $D_\circ = -39^\circ\ 1'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	59.1	. .	32.0	. .	. .	. .	. .	23 30 47.75	— 22.20	IV.	4	4.59	—17 24.9	— 41.6	23 30 25.55	— 39 19 6.5
2	11	. .	. .	20.2	36.8	. .	. .	. .	35 36.40	22.29	VI.	6	12.53	30 29.1	41.8	35 14.11	32 10.9
3	8	. .	. .	4.8	20.7	37.0	. .	. .	37 20.56	22.32	V.	2	6.38	8 13.2	41.9	36 58.24	9 55.1
4	9	. .	52.9	. .	25.5	. .	. .	. .	42 25.43	22.40	IV.	10	5.16	46 44.1	42.2	42 3.03	48 26.3
5	8	. .	. .	19.8	35.8	52.7	. .	. .	50 36.13	22.55	V.	10	3.21	45 45.6	42.7	13.58	47 28.3
6	7	12.6	29.0	. .	. .	17.8	. .	. .	58 1.61	22.71	VI.	8	11.36	39 52.7	43.3	57 38.90	41 36.0
7	7	. .	. .	21.0	37.0	. .	9.2	. .	23 59 36.96	22.74	VII.	9	4.3	41 3.4	43.4	23 59 14.22	42 46.8
8	11	. .	57.7	. .	. .	. .	. .	. .	0 25 29.78	23.21	IV.	1	9.26	4 37.6	45.5	0 25 6.57	6 23.1
9	7	. .	. .	24.2	40.9	56.8	. .	. .	26 40.53	23.23	VI.	6	9.54	28 58.2	45.6	26 17.30	30 43.8
10	9	. .	. .	. .	19.6	. .	. .	. .	0 29 19.42	— 23.28	V.	1	10.57	— 5 23.7	— 45.8	0 28 56.14	— 39 7 9.5

ZONE 98. OCTOBER 24. A. $D_\circ = -33^\circ\ 58'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	38.0	53.0	1 7 7.72	— 27.38	VII.	7	8.13	—33 7.1	— 4.8	1 6 40.34	— 34 31 41.9
2	10	27.5	43.2	. .	. .	. .	. .	. .	13 13.44	27.46	II.	7	6.14	32 7.2	5.3	12 45.98	30 42.5
3	10	. .	. .	50.0	5.0	. .	. .	. .	14 4.81	27.47	IV.	3	6.3	12 58.8	5.4	13 37.34	11 34.2
4	5	. .	. .	54.8	9.7	. .	. .	. .	15 9.48	27.48	IV.	1	5.25	2 39.5	5.5	14 42.00	1 15.0
5	6	3.5	19.0	. .	. .	. .	. .	. .	16 49.21	27.52	II.	5	3.15	21 33.7	5.6	16 21.69	20 9.3
6	11	. .	. .	. .	. .	5.0	19.5	. .	16 49.61	27.52	VI.	4	4.52	17 22.6	5.6	16 22.09	15 58.2
7	10	. .	. .	. .	. .	13.5	28.0	. .	19 58.10	27.57	VI.	9	7.34	42 47.4	5.9	19 30.53	41 23.3
8	5	33.8	49.4	. .	. .	. .	. .	. .	22 19.71	27.59	II.	7	9.29	33 45.9	6.1	21 52.12	32 22.0
9	9	. .	. .	. .	. .	51.5	7.0	. .	23 36.62	27.60	VI.	2	8.19	9 7.2	6.2	23 9.02	7 43.4
10	9	. .	. .	19.6	34.8	. .	. .	. .	1 25 34.52	— 27.63	IV.	3	6.26	—13 10.4	— 6.4	1 25 6.89	— 34 11 46.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 17,	21	— 30.05	— 0.017	+ 0.265	— 0.106	— 0.086
Oct. 19,	21	— 31.25	— 0.037	+ 0.265	— 0.106	— 0.086
Oct. 24,	21	— 34.90	— 0.030	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1846	h. m.	in.	°	°

REMARKS.

ZONE 98. OCTOBER 24. A. $D_0 = -33° 58' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
11	7	. .	29.8	45.0	. .	. .	. .	. .	1 29 59.84	— 27.69	III.	2	11.5	—10 31.4	— 6.8	1 29 32.15	— 34 9 8.2
12	10	. .	. .	. .	50.0	5.0	. .	. .	30 49.82	27.71	V.	4	6.7	18 0.7	6.9	30 22.11	16 37.6
13	9	. .	13.0	28.0	. .	. .	. .	. .	32 43.00	27.72	III.	3	9.54	14 55.6	7.0	31 15.28	13 32.6
14	5	. .	. .	. .	. .	18.5	33.0	. .	33 3.12	27.74	VI.	4	12.0	20 59.1	7.2	32 35.38	19 36.3
15	6	. .	23.5	39.0	. .	. .	. .	. .	34 53.69	27.75	III.	2	11.36	10 47.1	7.3	34 25.94	9 24.4
16	9	27.0	42.5	. .	. .	. .	. .	. .	38 12.91	27.80	II.	8	6.28	37 14.0	7.7	37 45.11	35 51.7
17	10	. .	15.0	30.0	. .	. .	. .	. .	39 45.02	27.83	III.	4	2.59	16 25.6	7.9	39 17.19	15 3.5
18	8	. .	1.0	16.5	. .	. .	. .	. .	42 31.37	27.86	III.	5	6.53	23 24.2	8.2	42 3.51	22 2.4
19	10	2.0	17.5	. .	. .	. .	. .	. .	44 47.74	27.89	II.	5	8.22	24 9.0	8.5	44 19.85	22 47.5
20	7	30.9	46.0	. .	. .	. .	. .	. .	47 16.37	27.92	II.	4	9.27	19 41.7	8.8	46 48.45	18 20.5
21	9	. .	. .	39.0	54.5	. .	. .	. .	47 54.23	27.92	IV.	7	7.35	32 48.4	8.9	47 26.31	31 27.3
22	10	. .	. .	. .	. .	54.0	9.0	. .	47 38.86	27.92	VI.	4	6.24	18 9.1	8.9	47 10.94	16 48.0
23	7	. .	. .	58.0	13.4	. .	. .	. .	50 13.14	27.96	IV.	6	10.45	29 23.5	9.2	49 45.18	28 2.7
24	10	. .	. .	. .	. .	9.0	24.5	. .	50 54.10	27.97	VI.	6	5.11	26 34.3	9.3	50 26.13	25 13.6
25	10	. .	. .	. .	. .	34.5	49.5	. .	52 19.38	27.98	VI.	2	11.0	10 28.7	9.5	51 51.40	9 8.2
26	10	. .	. .	. .	59.0	15.0	. .	. .	54 59.29	28.01	V.	1	8.30	4 13.0	9.8	54 31.28	2 52.8
27	9	28.2	43.6	. .	. .	. .	. .	. .	56 13.87	28.04	II.	5	5.1	22 27.3	10.0	55 45.83	21 7.3
28	10	. .	. .	. .	. .	. .	41.5	57.5	1 56 11.62	28.03	VII.	1	9.37	4 46.4	10.0	55 43.59	3 26.4
29	9	. .	. .	. .	5.0	19.8	. .	. .	2 0 4.77	28.09	V.	8	8.11	38 6.3	10.5	1 59 36.68	36 46.8
30	9	. .	7.0	22.0	. .	. .	. .	. .	1 36.95	28.10	III.	3	3.37	11 44.8	10.7	2 1 8.85	10 25.5
31	9	45.8	1.0	. .	. .	. .	. .	. .	5 31.60	28.17	II.	9	2.52	40 24.7	11.3	5 3.43	39 6.0
32	6	. .	59.0	14.7	. .	. .	. .	. .	7 29.19	28.16	III.	1	7.36	3 45.7	11.6	7 1.03	2 27.3
33	9	. .	. .	. .	. .	47.0	2.0	. .	10 31.85	28.22	VI.	6	10.0	29 0.5	12.0	10 3.63	27 42.5
34	9	. .	. .	. .	. .	58.5	13.0	. .	12 43.13	28.23	VI.	1	11.37	5 47.4	12.3	12 14.90	4 29.7
35	8	57.8	13.0	. .	. .	. .	. .	. .	13 43.32	28.25	II.	4	9.39	19 47.8	12.5	13 15.07	18 30.3
36	10	. .	35.2	50.5	. .	. .	. .	. .	15 5.65	28.27	III.	8	4.15	36 6.9	12.7	14 37.38	34 49.6
37	9	. .	. .	14.0	29.5	. .	. .	. .	17 29.35	28.30	IV.	10	6.51	47 27.8	13.1	17 1.05	46 10.9
38	9	. .	23.5	38.5	. .	. .	. .	. .	18 53.44	28.30	III.	3	2.38	11 15.0	13.3	18 25.14	9 58.3
39	10	48.5	3.5	. .	. .	. .	. .	. .	20 33.92	28.33	II.	4	7.6	18 30.4	13.5	20 5.59	17 13.9
40	10	. .	. .	. .	. .	3.5	18.5	. .	20 48.35	28.33	VI.	6	3.52	25 54.3	13.6	20 20.02	24 37.9
41	4	. .	. .	. .	. .	24.3	39.2	. .	22 9.11	28.34	VI.	7	3.7	30 32.6	13.8	21 40.77	29 16.4
42	9	51.0	6.5	. .	. .	. .	. .	. .	28 36.84	28.42	II.	7	5.51	31 55.5	14.9	28 8.42	30 40.4
43	9	. .	. .	18.0	32.5	. .	. .	. .	31 32.62	28.45	IV.	4	8.42	19 19.2	15.3	31 4.17	18 4.5
44	6	. .	. .	. .	. .	20.5	35.2	. .	32 5.22	28.45	VI.	4	12.0	20 59.1	15.4	31 36.77	19 44.5
45	8	. .	30.0	45.2	. .	. .	. .	. .	34 0.36	28.47	III.	7	8.9	33 5.6	15.8	33 31.89	31 51.4
46	8	3.4	18.9	. .	. .	. .	. .	. .	36 49.18	28.50	II.	6	7.16	27 37.5	16.3	36 20.68	26 23.8
47	6	. .	9.5	25.0	. .	. .	. .	. .	37 40.18	28.52	III.	9	11.1	44 32.3	16.4	37 11.66	43 18.7
48	8	6.5	22.3	. .	. .	. .	. .	. .	39 52.48	28.54	II.	7	4.36	31 17.6	16.8	39 23.94	30 4.4
49	8	. .	. .	. .	. .	12.0	27.0	. .	39 56.86	28.54	VI.	7	5.10	31 34.8	16.8	39 28.32	30 21.6
50	9	. .	. .	. .	. .	. .	13.8	29.2	40 43.73	28.55	VII.	8	5.32	36 45.4	17.0	40 15.18	35 32.4
51	6	. .	18.0	33.0	. .	. .	. .	. .	42 48.15	28.57	III.	5	11.21	25 39.8	17.3	42 19.58	24 27.1
52	8	46.8	2.0	. .	. .	. .	. .	. .	46 32.14	28.59	II.	1	10.33	5 15.0	18.1	46 3.55	4 3.1
53	6	. .	. .	53.9	8.7	. .	. .	. .	49 8.59	28.61	IV.	2	8.42	9 19.1	18.5	48 39.98	8 7.6
54	10	. .	58.0	14.0	. .	. .	. .	. .	28.69	28.64	III.	6	8.33	28 16.7	19.0	51 0.05	27 5.7
55	5	. .	. .	9.0	25.0	. .	. .	. .	2 53 24.61	— 28.67	IV.	10	8.39	—48 22.5	— 19.4	2 52 55.94	— 34 47 11.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1846. h. m.	in.	°	°

REMARKS.

(98) 11. Differs 1^m in right ascension from Mural Z., 1846, December 23.
(98) 13. Transits discordant; T. III assumed as $28^s.0$; minutes perhaps 32.
(98) 54. Minutes of right ascension perhaps 50 or 52.

ZONE 99. OCTOBER 26. K. $D_0 = -30° 13' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	7	. .	. .	. .	. .	51.0	5.3	20.2	0 56 36.40	— 28.74	V.	1	12.00	— 6 0.4	— 5.3	0 56 7.66	— 30 19 55.7
2	10	. .	. .	. .	. .	. .	16.9	31.8	0 57 48.06	28.75	VII.	4	14.27	22 13.4	5.3	57 19.31	36 8.7
3	10	. .	51.3	6.3	. .	. .	. .	. .	1 0 20.33	28.78	V.	2	12.24	11 12.3	5.2	0 59 51.55	25 7.5
4	8	28.3	43.1	57.8	12.1	. .	. .	. .	2 11.96	28.81	IV.	2	12.52	11 26.5	5.2	1 1 43.15	25 21.7
5	9.10	. .	. .	. .	7.5	21.7	36.2	. .	5 7.26	28.85	VII.	6	12.9	30 5.2	5.2	4 38.41	44 0.4
6	9.10	. .	. .	. .	20.8	. .	49.5	. .	6 20.65	28.86	VII.	3	11.16	15 37.3	5.2	5 51.79	29 32.5
7	9	. .	. .	19.5	33.8	48.6	. .	. .	10 33.91	28.92	V.	7	7.23	32 41.8	5.2	10 4.99	46 37.0
8	9	. .	. .	44.7	59.3	. .	. .	. .	11 59.27	28.94	IV.	9	11.5	44 33.1	5.2	11 30.33	58 28.3
9	9	. .	. .	. .	. .	35.8	. .	4.0	13 21.27	28.95	VII.	7	4.34	31 16.0	5.2	12 52.32	45 11.2
10	8.9	. .	. .	. .	. .	5.2	19.4	. .	13 50.57	28.96	VI.	2	8.49	9 23.5	5.2	13 21.61	30 23 18.7
11	8.7	. .	. .	. .	59.6	13.7	. .	. .	19 59.33	29.04	VI.	10	11.9	49 36.5	5.2	19 30.29	31 3 31.7
12	6	. .	. .	. .	. .	50.2	4.2	. .	20 35.45	29.05	VII.	10	5.52	46 56.1	5.2	20 6.40	31 0 51.3
13	8	. .	. .	. .	14.4	28.9	42.9	. .	22 14.19	29.06	VI.	6	4.36	26 16.6	5.3	21 45.13	30 40 11.9
14	7.8	. .	. .	. .	12.1	26.4	40.6	. .	23 11.82	29.08	VI.	8	2.52	35 24.0	5.3	22 42.74	49 19.3
15	6.7	. .	. .	46.7	1.3	15.7	29.8	. .	25 1.09	29.10	VII.	7	5.29	31 43.8	5.3	24 32.99	45 39.1
16	9	. .	. .	. .	. .	16.0	30.1	. .	26 1.33	29.11	VII.	3	11.55	15 57.0	5.3	25 32.22	29 52.3
17	7	. .	. .	. .	. .	12.2	. .	41.3	26 57.67	29.12	VII.	6	9.12	28 35.8	5.4	26 28.55	42 31.2
18	9	. .	. .	. .	. .	. .	13.2	. .	27 44.21	29.13	VII.	7	11.18	34 40.2	5.4	27 15.08	48 35.6
19	7	. .	. .	. .	. .	. .	1.9	. .	28 32.97	29.14	VI.	6	6.14	27 6.1	5.4	28 3.83	41 1.5
20	5.6	. .	. .	. .	41.7	56.2	10.3	. .	29 41.52	29.16	VI.	6	5.23	26 40.3	5.4	29 12.36	40 35.7
21	9	43.0	57.8	. .	26.9	. .	. .	. .	37 26.76	29.24	V.	4	10.13	20 5.5	5.6	36 57.52	34 1.1
22	9	. .	50.2	5.1	19.8	. .	. .	. .	41 19.36	29.29	V.	3	8.36	14 16.8	5.8	40 50.07	30 28 12.6
23	8.9	. .	. .	1.2	16.1	30.2	. .	. .	46 15.87	29.35	VI.	10	7.56	47 59.0	5.9	45 46.52	31 1 54.9
24	9	13.9	28.7	43.3	. .	. .	. .	. .	53 57.61	29.44	IV.	3	13.26	16 43.4	6.3	53 28.17	30 30 39.7
25	5	. .	33.4	48.0	2.3	. .	. .	. .	55 2.39	29.45	V.	6	11.00	29 30.8	6.3	54 32.94	43 27.1
26	5	. .	. .	0.2	. .	29.3	. .	58.3	1 56 14.50	29.46	VII.	2	9.5	9 31.3	6.4	1 55 45.04	23 27.7
27	9	. .	25.5	40.2	54.7	. .	. .	. .	2 3 54.59	29.55	V.	6	8.42	28 21.0	6.8	2 3 25.04	42 17.8
28	11	. .	. .	. .	. .	12.2	. .	. .	4 57.71	29.56	VII.	9	6.40	42 18.7	6.8	4 28.15	56 15.5
29	9	. .	. .	. .	54.7	. .	23.0	. .	11 54.32	29.63	VI.	4	4.32	17 13.0	7.2	11 24.69	31 10.2
30	9	. .	. .	. .	. .	. .	56.0	. .	12 37.17	29.63	VII.	2	5.46	7 50.7	7.3	12 7.54	21 48.0
31	9	. .	. .	10.1	. .	. .	. .	. .	14 24.69	29.65	IV.	8	7.00	37 29.6	7.4	13 55.04	51 27.0
32	8	. .	2.7	17.3	31.7	. .	. .	. .	15 31.47	29.67	V.	1	7.50	3 54.1	7.5	15 1.80	17 51.6
33	9	. .	18.9	33.6	. .	. .	. .	. .	16 47.94	29.68	IV.	5	3.58	21 55.9	7.6	16 18.26	35 53.5
34	6	. .	. .	. .	11.2	25.8	40.1	. .	17 11.16	29.68	VI.	4	8.2	18 59.1	7.6	16 41.48	32 56.7
35	7	. .	. .	30.2	44.5	59.0	. .	. .	18 44.41	29.70	VI.	4	7.21	18 38.4	7.7	18 14.71	32 36.1
36	9	4.7	19.5	34.3	. .	. .	. .	. .	21 48.38	29.73	IV.	2	8.19	9 8.5	7.9	21 18.65	23 6.4
37	9	. .	. .	. .	. .	37.8	. .	. .	22 23.17	29.73	V.	1	10.22	5 10.9	8.0	21 53.44	19 8.9
38	11	. .	. .	44.9	. .	. .	. .	. .	23 59.06	29.75	IV.	2	10.32	10 46.0	8.1	23 29.31	30 24 44.1
39	6.7	. .	. .	. .	. .	36.0	50.0	. .	24 21.25	29.75	VI.	10	6.35	47 18.1	8.1	23 51.50	31 1 16.2
40	7	5.2	20.0	34.8	49.2	. .	. .	. .	27 49.07	29.79	IV.	5	3.51	21 52.4	8.4	27 19.28	30 35 50.8
41	8	. .	. .	. .	32.8	47.1	1.3	. .	28 32.53	29.80	VII.	5	5.17	22 35.4	8.4	28 2.73	36 33.8
42	5	. .	41.9	56.8	11.2	. .	. .	. .	30 11.10	29.81	V.	6	8.7	28 3.3	8.6	29 41.29	42 1.9
43	5.4	36.5	51.2	5.8	20.7	. .	. .	. .	32 20.45	29.83	IV.	8	5.6	36 32.0	8.8	31 50.62	50 30.8
44	7	51.9	6.7	21.3	35.9	. .	. .	. .	34 35.80	29.85	V.	7	8.12	33 6.5	9.0	34 5.92	47 5.5
45	5.6	. .	14.0	28.9	43.5	. .	. .	. .	35 43.26	29.86	V.	6	8.28	28 13.9	9.0	35 13.40	42 12.9
46	9	. .	9.9	24.7	. .	. .	. .	. .	39 38.91	29.90	IV.	4	3.50	16 52.0	9.4	39 9.01	30 30 51.4
47	7.8	. .	. .	. .	30.9	. .	59.2	. .	45 30.45	29.95	VI.	10	10.49	49 26.4	10.0	45 0.50	31 3 26.4
48	8.9	. .	52.5	7.2	. .	36.2	. .	. .	47 21.48	29.96	VI.	3	6.4	12 59.8	10.2	46 51.52	30 27 0.0
49	7.8	. .	. .	31.0	45.2	0.0	14.1	. .	2 48 45.22	— 29.98	VI.	3	6.42	—13 19.0	— 10.3	2 48 15.24	— 30 27 19.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 26,	21	— 36.53	— 0.026	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(99) 38. Micrometer assumed as 11r.32 instead of 10r.32.

ZONE 99. OCTOBER 26. K. $D_{\circ}=-30^{\circ}\ 13'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i+d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
50	5.4	38.7	53.4	8.1	. .	. .	. .	. .	2 51 22.34	— 30.00	IV.	3	7.18	—13 37.4	— 10.6	2 50 52.34	— 30 27 38.0
51	8	15.3	30.2	44.7	. .	. .	. .	. .	53 59.25	30.02	IV.	7	6.19	32 9.5	10.8	53 29.23	46 10.3
52	7	. .	40.7	55.1	10.0	. .	. .	. .	2 55 9.86	30.03	V.	9	8.41	43 20.3	11.0	2 54 39.83	57 21.3
53	7	9.2	24.0	38.7	53.2	. .	. .	. .	3 0 53.00	30.07	V.	4	9.59	19 58.4	11.6	3 0 22.93	34 0.0
54	7	. .	42.3	56.8	11.3	. .	. .	. .	3 2 11.36	— 30.08	V.	8	10.54	—39 27.8	— 11.8	3 1 41.28	— 30 53 29.6

ZONE 100. OCTOBER 28. A. $D_{\circ}=-33^{\circ}\ 57'\ 40''$.

1	5	7.3	22.4	. .	. .	. .	. .	. .	0 0 52.84	— 27.38	II.	5	8.7	—24 1.4	— 6.8	0 0 25.46	— 34 21 48.2
2	11	. .	10.5	25.5	. .	. .	. .	. .	2 40.85	27.42	III.	8	10.4	39 3.5	7.0	2 13.43	36 50.5
3	9	. .	. .	16.5	31.2	. .	. .	. .	5 31.18	27.46	IV.	2	8.39	9 17.6	7.3	5 3.68	7 4.9
4	10	. .	25.0	40.3	. .	. .	. .	. .	7 55.32	27.49	III.	6	5.42	26 50.2	7.6	7 27.83	24 37.8
5	9	. .	40.0	55.4	. .	. .	. .	. .	12 10.66	27.56	III.	10	5.41	46 52.4	8.1	11 43.10	44 40.5
6	8	. .	45.0	59.5	. .	. .	. .	. .	16 14.57	27.63	III.	1	5.00	2 26.8	8.6	15 46.94	0 15.4
7	8	. .	. .	2.8	18.2	. .	. .	. .	20 18.08	27.70	IV.	9	11.16	44 40.0	9.1	19 50.38	42 29.1
8	10	7.8	23.0	. .	. .	. .	. .	. .	22 53.29	27.74	II.	4	4.42	17 17.5	9.4	21 25.55	15 6.9
9	8	11.8	27.0	. .	. .	. .	. .	. .	26 57.29	27.80	II.	4	2.58	16 24.9	10.0	26 29.49	14 14.9
10	9	. .	. .	. .	. .	34.5	49.0	. .	29 19.09	27.83	VI.	10	2.56	45 28.7	10.3	28 51.26	43 19.0
11	9	. .	6.5	21.8	. .	. .	. .	. .	31 36.71	27.88	III.	4	9.30	19 43.4	10.7	31 8.83	17 34.1
12	6	. .	. .	. .	. .	17.0	31.4	. .	33 1.82	27.90	VI.	10	9.50	48 58.2	10.9	32 33.62	46 49.1
13	10	. .	10.5	26.0	. .	. .	. .	. .	37 40.97	27.97	III.	7	3.49	30 54.0	11.6	37 13.00	28 45.6
14	11	. .	. .	52.2	. .	. .	. .	. .	41 7.10	28.02	III.	4	7.29	18 42.2	12.1	40 39.08	16 34.3
15	9	. .	. .	5.0	20.2	. .	. .	. .	42 20.15	28.04	IV.	9	3.54	40 46.3	12.3	41 52.11	38 48.6
16	9	. .	. .	40.0	55.8	. .	. .	. .	47 55.51	28.13	IV.	10	8.45	48 25.5	13.2	47 27.38	46 18.7
17	10	. .	. .	9.8	25.0	. .	. .	. .	50 24.96	28.16	IV.	9	7.34	42 47.6	13.6	49 56.80	40 41.2
18	7	. .	12.6	27.9	. .	. .	. .	. .	54 42.70	28.24	III.	3	4.34	12 13.7	14.4	54 14.46	10 8.1
19	6	10.2	25.8	. .	. .	. .	. .	. .	0 57 55.96	28.28	II.	5	4.35	22 14.2	15.0	0 57 27.68	20 9.2
20	10	44.9	0.5	15.7	. .	. .	. .	. .	1 2 30.71	— 28.36	III.	6	4.58	—26 27.9	— 15.8	1 2 2.35	— 34 24 23.7

ZONE 101. OCTOBER 28. A. $D_{\circ}=-28^{\circ}\ 59'\ 50''$.

1	8	. .	20.9	35.0	. .	. .	. .	. .	1 32 49.58	— 28.59	III.	10	6.43	—47 22.0	— 8.8	1 32 20.99	— 29 47 20.8
2	9	18.0	33.0	. .	. .	. .	. .	. .	36 1.37	28.61	II.	4	10.4	20 0.9	9.6	35 32.76	20 0.5
3	7	50.0	4.8	. .	. .	. .	. .	. .	38 33.36	28.65	II.	6	8.51	28 25.4	10.2	38 4.71	28 25.6
4	8	. .	. .	. .	. .	53.8	7.9	. .	38 39.34	28.65	VI.	4	5.00	17 27.3	10.2	38 10.69	17 27.5
5	8	19.5	34.5	. .	. .	. .	. .	. .	41 2.94	28.67	II.	5	12.00	25 59.3	10.8	40 34.27	26 0.1
6	10	. .	. .	. .	. .	. .	28.0	42.0	40 59.11	28.67	VII.	7	7.13	32 36.2	10.8	40 30.44	32 37.0
7	7	. .	6.5	21.0	. .	. .	. .	. .	43 35.38	28.71	III.	10	6.30	47 15.4	11.4	43 6.67	47 16.8
8	9	. .	. .	. .	11.0	25.0	. .	. .	44 10.72	28.70	V.	5	7.25	23 40.5	11.6	43 41.02	23 42.1
9	11	. .	. .	. .	. .	. .	20.5	35.0	44 51.80	28.71	VII.	4	8.7	19 1.5	11.7	44 23.09	19 3.2
10	8	31.0	45.9	. .	. .	. .	. .	. .	50 14.49	28.77	II.	8	4.39	36 18.0	13.0	49 45.72	36 21.0
11	7	49.0	3.5	. .	. .	. .	. .	. .	51 32.27	28.79	II.	7	11.17	34 39.8	13.4	51 3.48	34 43.2
12	8	. .	. .	. .	45.0	59.2	. .	. .	51 44.84	28.79	V.	7	7.30	32 45.2	13.4	51 16.05	32 48.6
13	11	. .	. .	28.9	44.0	. .	. .	. .	53 43.66	28.82	IV.	10	7.7	47 34.2	13.9	53 14.84	47 38.1
14	8	. .	. .	50.0	4.0	. .	. .	. .	56 3.88	28.82	IV.	1	7.33	3 45.8	14.5	55 35.06	3 50.3
15	8	55.5	10.0	. .	. .	. .	. .	. .	1 58 38.49	— 28.85	II.	1	9.11	— 4 35.2	— 15.2	1 58 9.60	— 29 4 40.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Oct. 28,	21	— 36.04	— 0.009	+ 0.265	— 0.106	— 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

ZONE 101. OCTOBER 28. A. $D_0 = -28° 59' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
16	7	. .	. .	. .	. .	14.5	28.5	. .	1 59 0.00	— 28.85	VI.	1	11.25	— 5 42.9	— 15.2	1 58 31.15	— 29 5 48.1
17	7	. .	. .	. .	. .	. .	39.5	54.5	2 1 11.12	28.88	VII.	8	5.17	36 37.0	15.8	2 0 42.24	36 42.8
18	7	. .	1.0	15.0	. .	. .	. .	. .	3 29 59	28.91	III.	9	8.5	43 1.9	16.4	3 0.68	43 8.3
19	9	. .	21.0	. .	. .	. .	. .	. .	5 49.62	28.93	II.	8	11.9	39 35.1	17.0	5 20.69	39 42.1
20	10	29.0	44.0	. .	. .	. .	. .	. .	7 12.45	28.94	II.	5	7.12	23 33.8	17.4	6 43.51	23 41.2
21	11	. .	. .	. .	. .	. .	41.2	. .	7 12.53	28.94	VI.	8	3.5	40 29.5	17.4	6 43.59	40 36.9
22	9	12.5	27.0	. .	. .	. .	. .	. .	9 55.58	28.97	II.	4	4.8	17 1.0	18.1	9 26.61	17 9.1
23	7	. .	. .	34.3	48.2	. .	. .	. .	11 48.13	28.98	IV.	1	7.48	3 53.4	18.6	11 19.15	4 2.0
24	9	. .	. .	. .	53.5	7.5	. .	. .	13 53.25	29.01	V.	8	5.53	36 55.5	19.2	13 24.24	37 4.7
25	8	. .	33.2	47.5	. .	. .	. .	. .	17 1.94	29.05	III.	9	8.20	43 9.4	20.0	16 32.89	43 19.4
26	8	53.0	8.0	. .	. .	. .	. .	. .	18 36.36	29.52	II.	4	9.6	19 31.6	20.4	18 6.84	19 42.0
27	9	. .	. .	. .	. .	28.0	42.0	. .	20 13.49	29.55	VI.	10	9.53	48 57.8	20.9	19 43.94	49 8.7
28	8	. .	21.0	35.5	. .	. .	. .	. .	21 49.64	29.55	III.	6	8.13	28 6.3	21.3	21 20.09	28 17.6
29	10	42.5	57.3	. .	. .	. .	. .	. .	24 25.75	29.55	II.	4	6.50	18 22.8	22.0	23 56.20	18 34.8
30	8	. .	. .	46.2	0.5	14.8	. .	. .	25 0.40	29.57	V.	6	5.54	26 56.1	22.2	24 31.83	27 8.3
31	7	24.2	38.8	. .	. .	. .	. .	. .	29 7.38	29.59	II.	5	2.31	21 11.8	23.4	28 37.79	21 25.2
32	7	19.0	34.0	. .	. .	. .	. .	. .	31 2.56	29.60	II.	8	8.40	38 50.0	23.9	30 32.96	39 3.9
33	9	. .	. .	6.0	20.2	. .	. .	. .	36 20.05	29.62	IV.	3	5.59	12 57.6	25.4	35 50.43	13 13.0
34	8	. .	19.5	34.0	. .	. .	. .	. .	37 48.13	29.64	III.	6	4.51	26 24.2	25.8	37 18.49	26 40.0
35	9	. .	. .	. .	. .	. .	24.0	40.0	37 56.00	29.63	VII.	1	8.20	4 9.2	25.9	37 26.37	4 25.1
36	9	. .	25.5	39.5	. .	. .	. .	. .	39 53.76	29.65	III.	4	5.32	17 43.6	26.5	39 24.11	18 0.1
37	9	. .	35.0	49.2	. .	. .	. .	. .	45 3.60	29.67	III.	8	6.58	36 59.6	28.0	44 33.93	37 17.6
38	10	. .	. .	12.0	26.5	. .	. .	. .	48 26.31	29.69	IV.	6	6.50	27 24.4	29.0	47 56.62	27 43.4
39	8	42.0	56.6	. .	. .	. .	. .	. .	50 25.31	29.70	II.	7	8.25	33 12.9	29.6	49 55.61	33 32.5
40	5	29.2	43.6	. .	. .	. .	. .	. .	2 53 12.37	— 29.71	II.	6	11.40	—29 50.8	— 30.5	2 52 42.66	— 29 30 21.3

ZONE 102. NOVEMBER 16. K. $D_0 = -32° 43' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	19.1	. .	48.8	1 58 4.12	— 40.10	VII.	7	3.14	—30 35.7	— 8.9	1 57 24.02	— 33 14 24.6
2	10	. .	. .	. .	. .	40.8	. .	. .	2 0 25.88	40.13	VII.	6	10.22	29 11.3	9.3	1 59 45.75	33 13 0.6
3	6.7	. .	. .	46.8	1.8	. .	. .	. .	5 1.43	40.18	VI.	1	4.52	2 23.2	10.1	2 4 21.55	32 46 13.3
4	9	. .	. .	. .	8.9	. .	. .	. .	6 8.74	40.21	V.	4	6.46	18 20.6	10.3	5 28.53	33 2 10.9
5	8	. .	. .	. .	. .	. .	. .	54.0	6 9.04	40.20	VII.	3	11.50	15 54.0	10.3	5 28.84	32 59 44.3
6	8.9	41.2	56.2	. .	. .	. .	. .	. .	9 26.18	40.25	III.	6	4.16	26 6.6	10.9	8 45.93	33 9 57.5
7	8	. .	7.1	22.4	. .	. .	. .	. .	14 37.06	40.33	IV.	5	8.30	24 13.3	11.9	13 56.73	8 5.2
8	5.6	. .	59.0	13.9	28.7	. .	. .	. .	26 28.76	39.48	VI.	7	6.41	32 20.7	14.2	25 49.28	16 14.9
9	7.8	. .	. .	41.4	56.5	. .	. .	. .	27 56.43	40.51	V.	10	2.42	45 21.3	14.5	27 15.92	33 29 15.8
10	8	. .	. .	. .	. .	. .	. .	57.3	28 12.17	40.49	VII.	1	5.35	2 44.6	14.5	27 31.68	32 46 39.1
11	9	. .	. .	. .	. .	. .	. .	44.9	29 0.04	40.52	VII.	5	7.26	23 40.5	14.7	28 19.52	33 7 35.2
12	9	. .	48.4	. .	. .	. .	. .	. .	31 18.38	40.54	V.	8	4.39	36 18.7	15.2	30 37.84	20 13.9
13	5	58.5	13.8	28.8	. .	. .	. .	. .	38 43.59	40.65	IV.	5	11.26	25 42.3	16.8	38 2.94	9 39.1
14	8	14.3	29.7	. .	. .	. .	. .	. .	40 59.48	40.67	IV.	5	11.50	25 54.5	17.3	40 18.81	9 51.8
15	3	44.6	59.3	. .	29.8	. .	. .	. .	44 29.33	40.71	V.	4	6.40	18 17.6	18.0	42 48.62	2 15.6
16	8	. .	. .	57.1	. .	27.2	. .	. .	49 12.32	40.78	IV.	10	9.42	48 53.7	19.1	48 31.54	32 52.8
17	9	. .	. .	. .	41.8	. .	. .	. .	53 41.64	40.84	V.	10	5.36	46 49.3	20.2	53 0.80	30 49.5
18	5.4	. .	. .	. .	. .	. .	. .	52.7	2 54 7.83	40.83	VII.	5	4.55	22 24.1	20.3	2 53 27.00	33 6 24.4
19	5.6	0.3	15.3	. .	. .	. .	. .	. .	3 1 45.10	— 40.91	III.	2	13.37	—11 48.6	— 22.0	3 1 4.19	— 32 55 50.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.
Nov. 16,	21	— 46.59	— 0.038	— 0.020	+ 0.056	— 0.086

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1846.	h. m.	in.	°	°

REMARKS.

(101) 21. Micrometer thread assumed as 9 instead of 8.
(101) 32. Micrometer reading assumed as 9ʳ.40 instead of 8ʳ.40.
(101) 37. Micrometer reading assumed as 6ʳ.08 instead of 6ʳ.58.
(102) 15. Minutes assumed as 43 instead of 44.

ZONE 103. NOVEMBER 20. K. D₀=−38° 58′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	MICROMETER.			$i + d_2$	d_1	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.									
									h. m. s.	s.			r.	′ ″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	. .	54.9	. .	0 15 22.77	− 42.14	VI.	3	8.23	−14 7.3	− 55.5	0 14 40.63	− 39 13 2.8
2	8	. .	. .	. .	0.2	16.0	. .	. .	26 59.95	42.34	VI.	7	5.36	31 49.2	56.6	26 17.61	30 45.8
3	7.8	. .	. .	13.3	29.9	46.2	. .	. .	33 29.83	42.52	IV.	10	6.22	47 17.5	56.9	32 47.31	46 14.4
4	7	23.4	40.2	56.5	12.3	. .	. .	. .	36 12.22	42.58	IV.	4	6.27	18 9.6	57.2	35 29.64	17 6.8
5	6	. .	7.0	23.4	39.3	. .	. .	. .	37 39.16	42.63	IV.	3	11.55	15 55.2	57.3	36 56.53	14 52.5
6	6	8.5	25.0	41.3	57.6	. .	. .	. .	44 57.27	42.77	IV.	5	3.36	21 44.0	58.1	44 14.50	20 42.1
7	9.10	. .	17.2	34.0	49.8	. .	. .	. .	46 49.77	42.79	IV.	7	7.48	32 56.5	58.2	46 6.98	31 54.7
8	10	. .	. .	. .	. .	49.9	. .	. .	50 33.88	42.90	VI.	10	3.17	45 43.3	58.7	49 50.98	44 42.0
9	4.5	. .	. .	44.1	. .	16.5	32.4	49.0	55 0.40	42.98	VI.	9	11.6	44 38.4	59.2	54 17.42	43 37.6
10	7	. .	. .	. .	54.9	. .	. .	. .	0 59 54.72	43.08	IV.	1	6.35	3 11.0	59.8	0 59 11.64	2 10.8
11	9	. .	24.2	40.2	. .	. .	. .	. .	1 14 56.24	43.38	VI.	4	9.46	19 50.3	61.9	1 14 12.86	18 52.2
12	9	. .	. .	. .	20.2	. .	. .	. .	25 20.02	43.58	VI.	3	6.15	13 2.3	63.4	24 36.44	12 5.7
13	8	. .	. .	. .	22.2	. .	. .	. .	27 22.02	43.60	IV.	1	3.43	1 43.7	63.7	26 38.42	0 47.4
14	9	. .	. .	37.8	. .	. .	. .	. .	29 53.68	43.68	III.	5	8.27	24 11.6	64.2	29 10.00	23 15.8
15	9	. .	. .	. .	. .	. .	27.4	. .	29 55.22	43.68	V.	4	10.40	20 18.0	64.2	29 11.54	19 22.2
16	9	. .	. .	. .	. .	. .	15.7	32.3	37 43.61	43.83	V.	4	2.2	15 55.1	65.5	36 59.78	15 0.6
17	9	8.1	24.4	40.4	. .	. .	. .	. .	42 56.63	43.92	III.	5	9.43	24 50.2	66.5	42 12.71	23 56.7
18	5.6	. .	32.1	48.4	4.4	. .	. .	. .	44 4.17	43.94	IV.	2	11.6	10 29.3	66.6	43 20.23	9 35.9
19	9	. .	. .	. .	. .	. .	51.0	7.8	45 19.09	43.96	VII.	7	12.28	35 17.9	66.9	44 35.13	34 24.8
20	9	. .	. .	. .	12.3	28.2	. .	. .	46 12.13	43.99	VI.	8	8.44	38 25.3	67.1	45 28.14	37 32.4
21	9	. .	. .	. .	. .	. .	15.2	32.0	43.24	44.00	VII.	6	12.12	30 7.8	67.1	(45) 59.24	29 14.9
22	5.6	. .	. .	. .	. .	. .	11.7	28.2	47 39.56	44.01	VI.	4	12.4	21 0.3	67.2	46 55.55	20 7.5
23	9	. .	. .	. .	. .	32.2	. .	. .	1 56 16.10	44.18	VI.	7	6.19	32 11.0	69.1	1 55 31.92	31 20.1
24	8	. .	. .	52.8	8.6	24.7	. .	. .	2 5 8.41	44.31	V.	1	10.45	5 17.8	70.8	2 4 24.10	4 28.6
25	9	11.2	. .	44.3	. .	. .	34.4	. .	0.25	(44.42)	VI.	8	13.43	40 57.1	71.8	15.83	40 8.9
26	9	. .	. .	. .	. .	. .	48.8	. .	15 16.45	44.53	VI.	9	10.4	44 7.0	73.0	14 31.92	43 20.0
27	9	. .	. .	. .	. .	45.0	0.6	17.1	17 28.60	44.54	VII.	5	8.46	24 20.6	73.5	16 44.06	23 34.1
28	9	. .	. .	8.2	. .	. .	. .	. .	23 24.35	44.66	V.	8	9.15	38 41.3	74.9	22 39.69	37 56.2
29	9	14.9	31.2	47.8	. .	. .	. .	. .	31 3.61	44.77	III.	5	7.42	23 48.7	76.7	30 18.84	23 5.4
30	9	. .	. .	. .	. .	. .	22.5	. .	31 50.23	44.79	VI.	7	11.40	34 53.9	76.9	31 5.44	34 10.8
31	9	56.2	. .	29.0	. .	. .	. .	. .	36 45.03	44.88	II.	7	4.25	31 13.1	78.2	36 0.15	30 31.3
32	4.5	. .	. .	. .	. .	. .	25.2	. .	36 53.15	44.85	VI.	1	4.44	2 14.4	78.2	36 8.30	1 32.6
33	2.3	. .	. .	. .	26.8	43.0	58.9	. .	48 26.75	45.02	IV.	1	7.48	3 48.0	81.4	47 41.73	3 9.4
34	5	. .	. .	. .	. .	1.8	17.3	34.3	50 45.46	45.07	VII.	3	12.32	16 13.3	82.1	50 0.39	15 35.4
35	9	. .	. .	49.7	6.0	. .	. .	. .	2 59 5.89	45.23	VI.	10	4.16	46 13.2	84.2	58 20.66	45 37.4
36	9	. .	. .	29.3	. .	1.3	. .	. .	3 0 44.94	− 45.21	VI.	1	9.37	− 4 43.0	− 85.1	2 59 59.73	− 39 4 8.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1846.	h.	s.	s.	s.	s.	s.
Nov. 20,	21	− 50.29	− 0.049	− 0.020	+ 0.056	− 0.086

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(103) 25. Transit over T. VI assumed as 32ˢ.4 instead of 34ˢ.4 ; minutes unknown.

ZONE 104. FEBRUARY 5. H. BELT, −30° 1′. $D_0 = -29° 38′ 50″$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	37.	. .	5.3	. .	8 33 36.69	−12.37	−1.00	IV.	5	10.150	−25 6.41	−29.86	−3.01	8 33 23.32	−30 4 29.3
2	9	. .	. .	6.2	21.	35.2	. .	. .	36 20.66	12.34	1.00	I.	5	5.040	22 29.15	30.23	2.67	36 7.32	30 1 52.0
3	9	. .	. .	. .	3.3	17.5	. .	. .	38 3.04	12.32	0.97	II.	1	5.223	2 42.32	30.46	0.01	37 49.75	29 42 2.8
4	9	. .	. .	. .	. .	19.3	33.4	. .	39 4.74	12.31	0.99	II.	3	9.333	14 46.99	30.60	1.61	38 51.44	29 54 9.2
5	9	. .	. .	25.2	39.1	. .	. .	. .	40 39.20	12.29	1.00	IV.	5	4.365	22 15.73	30.81	2.63	40 25.91	30 1 39.2
6	9	. .	. .	. .	13.3	28.	. .	. .	41 13.32	12.29	0.99	IV.	4	2.300	16 12.74	30.87	1.82	41 0.04	29 55 35.4
7	9	. .	. .	. .	19.2	33.8	. .	. .	42 19.23	12.28	1.02	III.	9	8.360	43 15.25	31.02	5.50	42 5.93	30 22 41.8
8	9	. .	. .	. .	29.5	44.	. .	. .	43 29.48	12.26	1.02	IV.	9	5.336	41 43.31	31.17	5.28	43 16.20	30 21 9.8
9	8	. .	. .	. .	. .	29.	43.1	. .	44 14.46	12.25	0.98	IV.	3	4.286	12 13.53	31.26	1.27	44 1.23	29 51 36.1
10	9	. .	. .	19.2	33.5	. .	2.2	. .	47 33.39	12.22	0.99	IV.	4	3.143	16 35.07	31.69	1.87	47 20.18	55 58.6
11	8	. .	. .	21.2	35.2	50.	. .	. .	49 35.32	12.19	0.99	IV.	4	5.343	17 45.67	31.96	2.02	49 22.14	29 57 9.6
12	8.9	. .	. .	32.2	46.5	1.	. .	. .	50 46.49	12.18	1.00	IV.	6	8.506	28 24.95	32.11	3.46	50 33.31	30 7 50.5
13	8.9	. .	. .	57.0	11.6	. .	. .	. .	52 11.53	12.16	1.02	IV.	9	10.092	44 2.29	32.28	5.60	51 58.35	23 30.2
14	9	. .	. .	. .	2.2	17.	31.2	. .	53 2.34	12.15	1.00	IV.	5	10.485	25 23.30	32.38	3.05	52 49.19	4 48.7
15	9	. .	. .	. .	2.8	16.2	30.6	. .	54 2.08	12.14	1.01	IV.	6	10.056	29 2.77	32.51	3.54	53 48.93	8 28.8
16	9	. .	. .	. .	21.0	34.8	49.3	. .	55 20.58	12.13	1.00	IV.	6	9.316	28 45.62	32.67	3.51	55 7.45	8 11.8
17	8	. .	. .	. .	31.8	45.8	0.	. .	56 31.40	12.12	1.02	IV.	10	4.324	46 13.36	32.81	5.90	56 18.26	30 25 42.1
18	9	. .	. .	. .	44.8	59.2	. .	. .	57 44.64	12.10	0.98	IV.	1	5.270	2 44.88	32.96	0.01	57 31.56	29 42 7.9
19	9	. .	. .	. .	. .	12.	25.8	. .	8 59 57.29	12.07	1.01	IV.	8	5.314	37 13.50	33.24	4.66	8 59 44.21	30 16 41.4
20	9	. .	. .	15.3	29.6	. .	. .	. .	9 2 29.43	12.04	0.98	III.	3	4.013	11 59.72	33.53	1.24	9 2 16.41	29 51 24.5
21	9	. .	. .	. .	6.	. .	. .	. .	3 5.84	12.03	0.98	IV.	2	6.213	8 11.26	33.60	0.74	2 52.83	47 35.6
22	7	. .	. .	. .	48.2	2.5	16.6	31.5	3 47.94	12.03	0.98	IV.	1	11.442	5 55.0	33.68	0.44	3 34.93	29 45 19.2
23	9	. .	. .	40.2	54.7	. .	. .	. .	6 54.63	11.99	1.02	IV.	8	7.262	37 41.09	34.05	4.73	6 41.62	30 17 9.9
24	9	. .	. .	39.3	54.0	8.2	. .	. .	7 53.68	11.98	0.99	IV.	4	5.420	17 49.55	34.16	2.03	7 40.71	29 57 15.7
25	8	. .	. .	. .	53.8	8.2	22.5	. .	8 53.71	11.97	0.98	IV.	1	10.363	5 20.86	34.28	0.35	8 40.76	29 44 45.5
26	9	. .	. .	. .	. .	. .	8.3	. .	9 39.50	11.96	1.02	IV.	9	8.402	43 17.41	34.37	5.50	9 26.52	30 22 47.3
27	9	. .	. .	. .	. .	57.2	11.2	26.2	10 42.60	11.94	0.99	III.	3	7.156	13 37.69	34.49	1.46	10 29.67	29 53 3.6
28	9	. .	. .	. .	26.5	. .	. .	. .	13 26.34	11.91	1.01	VI.	6	10.486	29 24.26	34.79	3.59	13 13.42	30 8 52.6
29	9	. .	. .	20.2	35.0	. .	. .	. .	14 34.68	11.89	1.00	IV.	5	10.572	25 27.69	34.92	3.06	14 21.79	4 55.7
30	8	. .	. .	0.5	15.	29.2	43.2	. .	15 14.84	11.88	1.01	IV.	7	4.302	30 43.39	34.99	3.59	15 1.95	30 10 12.0
31	9	. .	. .	21.	35.	49.2	. .	. .	16 34.89	11.87	0.99	IV.	3	7.153	13 37.59	35.14	1.46	16 22.03	29 53 4.2
32	9	. .	. .	46.2	. .	. .	29.5	. .	17 0.56	11.86	0.98	IV.	3	2.520	11 24.83	35.19	1.16	16 47.72	50 51.2
33	9	. .	. .	. .	3.8	. .	. .	. .	18 3.64	11.85	0.98	IV.	2	14.520	12 28.77	35.30	1.31	17 50.81	51 55.4
34	9	. .	. .	. .	. .	31.5	45.2	. .	19 16.75	11.83	0.99	V.	3	7.36	13 47.99	35.44	1.48	19 3.93	29 53 14.9
35	9	. .	. .	. .	. .	. .	51.	6.	19 22.41	11.83	1.00	VI.	5	11.545	25 56.39	35.45	3.12	19 9.58	30 5 25.0
36	9	. .	. .	. .	. .	. .	. .	26.3	20 43.05	11.81	1.02	V.	8	12.430	40 20.78	35.59	5.09	20 30.22	30 19 51.5
37	9	. .	. .	. .	. .	34.2	48.4	. .	24 19.70	11.76	0.98	III.	1	7.589	4 1.42	35.97	0.18	24 6.96	29 43 27.6
38	9	. .	. .	. .	. .	. .	40.5	. .	25 11.81	11.75	0.98	VI.	3	4.142	12 6.09	36.07	1.26	24 59.08	51 33.4
39	9	. .	. .	. .	. .	7.2	. .	36.	25 52.59	11.73	0.99	V.	4	4.343	17 15.37	36.14	1.94	25 39.87	29 56 43.5
40	9	. .	. .	. .	42.5	57.0	10.2	. .	28 42.11	11.71	1.01	III.	7	4.590	31 28.12	36.43	3.88	28 29.39	30 10 58.4
41	9	. .	. .	. .	. .	. .	29.5	. .	29 0.70	11.70	1.01	VI.	8	1.462	34 49.46	36.47	4.33	28 47.99	14 20.3
42	9	. .	. .	. .	. .	. .	. .	56.	29 12.58	11.70	1.00	VII.	6	4.35	26 15.63	36.49	3.17	28 59.88	5 45.3
43	7.8	. .	. .	45.	59.2	13.8	. .	. .	30 59.32	11.68	1.02	IV.	8	9.468	38 21.74	36.67	4.82	30 46.62	17 53.2
44	8.9	. .	. .	. .	. .	42.8	57.	11.5	31 28.20	11.67	0.99	V.	4	11.428	20 51.43	36.72	2.42	31 15.54	0 20.6
45	9	. .	. .	. .	. .	. .	. .	44.8	31 1.51	11.68	1.01	VII.	7	15.220	36 41.85	36.67	4.59	30 48.82	30 16 13.1
46	9	. .	. .	. .	42.8	. .	. .	. .	33 42.64	11.64	0.98	IV.	2	10.39	9 50.96	36.94	0.96	33 30.02	29 49 17.9
47	9	. .	. .	. .	58.2	2.5	. .	. .	33 58.06	11.63	1.01	IV.	7	12.044	35 2.67	36.97	4.36	33 45.42	30 14 34.0
48	9	. .	. .	. .	. .	. .	1.0	. .	9 34 32.30	−11.62	−0.99	VI.	3	6.516	−13 25.45	−37.02	−1.43	9 34 19.69	−29 52 53.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 104	Feb. 5, 9 5	29.944	79.0	27.5

REMARKS.

Feb. 5, 8h. No observations were made for determining the instrumental corrections.
(104) 19. Micrometer reading assumed as 6r.314 instead of 5r.314.
(104) 30. Micrometer reading assumed as 3r.302 instead of 4r.302.
(104) 43. Micrometer reading assumed as 8r.468 instead of 9r.468.
(104) 46. Micrometer reading assumed as 9r.39 instead of 10r.39.
(104) 47. Transit over T. V assumed to have been at 12s.5 instead of 2s.5.

ZONE 105. APRIL 3. K. BELT, −26° 48′. D_0 = −26° 27′ 40″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	13.5	. .	41.4	. .	. .	. .	8 59 41.36	−19.31	+0.01	IV.	4	2.1	−15 58.11	−23.82	−2.13	8 59 22.06	−26 44 4.06
2	9	. .	24.2	38.7	52.4	. .	. .	. .	9 1 52.27	19.31	+0.02	V.	3	7.56	13 58.08	24.45	1.94	9 1 32.98	42 4.47
3	11	. .	26.6	. .	. .	. .	. .	. .	4 54.61	19.31	0.00	III.	5	3.20	21 37.10	25.33	2.67	4 35.30	49 45.10
4	8	. .	17.2	31.3	45.0	. .	. .	. .	9 44.94	19.31	+0.02	IV.	2	2.23	6 11.10	26.71	1.23	9 25.65	34 19.04
5	9	. .	26.3	. .	54.2	. .	. .	. .	11 54.13	19.31	+0.02	IV.	2	11.59	11 1.55	27.34	1.67	11 34.84	26 39 10.56
6	10	. .	. .	31.2	. .	59.2	. .	. .	13 45.27	19.31	−0.02	V.	8	12.54	40 26.34	27.87	4.48	13 25.94	27 8 38.69
7	9	. .	. .	. .	17.4	31.2	. .	. .	15 17.25	19.31	−0.02	VI.	9	6.14	42 3.52	28.31	4.64	14 57.92	27 10 16.47
8	9	. .	. .	30.9	44.9	. .	. .	. .	16 44.61	19.31	+0.02	VI.	1	8.1	4 2.37	28.73	1.04	16 25.32	26 32 12.14
9	9	. .	. .	. .	19.2	. .	46.8	. .	23 18.96	19.31	−0.01	VI.	7	13.54	35 57.76	30.60	4.05	22 59.64	27 4 12.41
10	7.8	. .	54.8	8.9	. .	. .	. .	. .	26 22.70	19.31	+0.02	IV.	4	3.45	16 50.55	31.46	2.21	26 3.41	26 45 4.22
11	8	. .	. .	. .	. .	51.2	4.8	. .	26 37.04	19.31	−0.01	VI.	6	7.6	32 32.04	31.52	3.72	26 17.72	27 0 47.28
12	8	. .	15.7	30.1	44.1	57.8	. .	. .	29 43.84	19.31	0.00	V.	5	5.47	22 51.22	32.40	2.79	29 24.53	26 51 6.41
13	4	8.4	22.3	36.4	50.7	. .	. .	. .	37 50.57	19.30	−0.01	III.	8	5.24	36 39.43	34.65	4.12	37 31.26	27 4 58.20
14	8	. .	. .	. .	. .	. .	53.0	7.2	38 25.11	19.30	0.00	VI.	6	8.23	28 10.86	34.81	3.30	38 5.81	26 56 28.97
15	8	. .	. .	. .	58.2	. .	26.1	. .	39 58.08	19.30	+0.02	VI.	1	13.15	6 40.69	35.24	1.26	39 38.80	34 57.19
16	9	. .	. .	. .	. .	41.4	. .	9.3	41 27.29	19.29	0.00	VII.	6	4.4	26 0.05	35.64	3.09	41 8.00	54 18.78
17	8	. .	53.2	. .	21.4	. .	. .	. .	9 59 21.15	19.26	+0.02	IV.	1	8.56	4 30.28	40.44	1.07	9 59 1.91	32 51.79
18	9	. .	. .	27.0	. .	55.0	. .	. .	10 9 40.97	19.24	0.00	VI.	6	10.39	29 19.45	43.11	3.41	10 9 21.73	57 45.97
19	9	. .	. .	3.8	. .	31.8	. .	. .	11 17.66	19.24	+0.01	V.	4	9.42	19 50.53	43.52	2.50	10 58.43	48 16.55
20	9	. .	. .	. .	. .	49.5	. .	17.6	17 35.36	19.22	0.02	VI.	2	13.11	11 37.67	45.11	1.73	17 16.16	40 4.51
21	7.8	. .	. .	55.5	. .	23.1	36.8	. .	27 9.02	19.19	+0.02	V.	1	12.8	6 7.04	47.45	1.22	26 49.85	34 35.71
22	7	17.4	31.8	45.8	. .	. .	. .	. .	29 59.72	19.18	0.00	IV.	5	8.38	24 17.50	48.15	2.93	29 40.54	52 48.58
23	5	. .	. .	. .	. .	45.3	58.8	13.3	30 31.05	19.18	+0.02	V.	2	9.29	9 45.87	48.27	1.56	30 11.89	38 15.70
24	9	. .	. .	. .	34.0	. .	1.8	. .	10 35 33.91	−19.16	+0.01	VI.	3	4.42	−12 20.13	−49.45	−1.79	10 35 14.76	−26 40 51.37

ZONE 106. APRIL 6. K. D_0 = −26° 27′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	45.0	. .	13.5	27.3	41.4	. .	. .	9 50 27.27	−19.66	+0.01	III.	4	4.27	−18 12.20	−25.99	−2.20	9 50 7.62	−26 45 50.4
2	9	. .	. .	. .	. .	. .	. .	37.0	50 54.64	19.66	0.02	VII.	2	3.45	7 52.54	26.06	1.00	50 35.00	35 29.60
3	8	. .	53.3	7.5	21.3	. .	. .	. .	9 59 21.13	19.65	+0.02	IV.	1	10.30	5 17.68	27.41	0.83	9 59 1.50	26 32 55.92
4	10	. .	. .	. .	. .	1.4	. .	. .	10 2 47.44	19.64	−0.02	VII.	9	6.39	42 15.88	27.95	4.94	10 2 27.78	27 9 58.77
5	9	. .	12.9	. .	40.8	. .	8.4	. .	9 40.71	19.63	−0.01	VII.	7	2.22	30 8.58	29.01	3.57	9 21.07	26 57 51.16
6	9	. .	. .	. .	17.7	. .	45.4	. .	11 17.54	19.62	0.00	VII.	5	1.22	20 37.23	29.25	2.50	10 57.92	48 18.98
7	10	. .	. .	. .	30.2	. .	. .	. .	13 30.05	19.62	0.00	V.	4	10.8	20 3.63	29.57	2.44	13 10.43	47 45.64
8	9	. .	. .	21.4	. .	49.2	. .	. .	17 35.10	19.61	+0.01	VI.	3	4.51	12 24.64	30.17	1.60	17 15.50	40 6.41
9	9	. .	. .	. .	. .	35.3	48.8	. .	18 21.09	19.61	0.00	VI.	5	8.4	24 0.17	30.29	2.88	18 1.48	51 43.34
10	9	. .	. .	44.8	58.7	. .	. .	. .	21 58.48	19.60	+0.02	IV.	2	5.24	7 42.37	30.80	1.09	21 38.90	35 24.26
11	9.10	. .	. .	20.2	. .	47.9	. .	. .	35 33.85	19.55	0.01	IV.	3	6.11	13 5.17	32.66	1.67	35 14.31	40 49.50
12	9	. .	. .	. .	. .	. .	1.8	. .	36 34.00	19.55	0.02	VI.	1	6.11	3 6.88	32.79	0.59	36 14.47	30 50.26
13	8.9	. .	30.0	43.8	57.8	. .	. .	. .	38 57.71	19.54	+0.01	V.	3	11.43	15 52.53	33.11	1.98	38 38.18	43 37.62
14	10	. .	. .	13.5	. .	. .	. .	. .	40 27.46	19.54	−0.01	VII.	7	3.58	30 56.98	33.31	3.66	40 7.91	26 58 43.95
15	5.6	. .	41.8	55.8	. .	24.0	. .	. .	42 9.97	19.53	−0.01	V.	9	1.47	39 49.00	33.52	4.67	41 50.43	27 7 37.19
16	8	. .	. .	57.3	11.3	25.3	. .	. .	45 11.15	19.52	+0.01	VI.	4	7.50	18 53.90	33.89	2.31	44 51.64	26 46 40.10
17	9	. .	32.3	. .	. .	14.4	. .	. .	49 0.41	19.50	−0.01	VI.	7	9.1	33 30.00	34.37	3.95	48 40.90	27 1 18.32
18	10	. .	. .	24.2	. .	. .	. .	. .	52 37.90	19.49	+0.02	VII.	3	6.1	12 59.71	34.79	1.67	52 18.43	26 40 46.17
19	8	. .	54.3	8.8	. .	36.5	. .	. .	56 22.40	19.47	0.01	V.	3	9.48	14 54.54	35.23	1.87	56 2.94	42 41.64
20	3	. .	. .	. .	26.1	. .	. .	. .	10 58 25.95	−19.46	+0.02	III.	1	2.31	− 1 16.09	−35.47	−0.37	10 58 6.51	−26 29 1.93

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
April 3,	9	f 25.21	l 0.016	+ 0.083	− 0.013	− 0.121
April 6,	9	f 25.70	g 0.002	+ 0.277	− 0.023	− 0.121

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°
Zone 105	April 3,	8 59	29.64	57.0	52.7
Zone 106	April 6,	9 50	29.524	55.4	47.6
		10 58	29.524	55.0	46.4

REMARKS.

(105) 11. Micrometer thread assumed as 7 instead of 6.
(106) 1. Micrometer reading assumed as 6^{r}.27 instead of 4^{r}.27.
(106) 2. Micrometer reading assumed as 5^{r}.45 instead of 3^{r}.45.

ZONE 107. APRIL 9. K. BELT, −30° 38′. D_0 = −30° 18′ 30″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	55.8	10.5	. .	. .	. .	. .	. .	9 6 39.77	−19.22	−0.01	III.	8	3.58	−35 56.05	−18.46	−4.45	9 6 20.54	−30 54 48.96
2	10	. .	. .	. .	. .	. .	. .	31.7	7 47.80	19.22	+0.02	VII.	2	9.51	9 56.55	18.81	1.02	7 28.60	28 46.38
3	9	15.1	30.0	44.7	59.2	. .	. .	. .	11 59.08	19.22	0.00	IV.	6	7.14	27 36.24	20.11	3.34	11 39.86	46 29.69
4	10	. .	. .	. .	. .	40.0	. .	. .	12 25.44	19.22	0.00	V.	5	8.4	24 0.31	20.24	2.86	12 6.22	30 42 53.41
5	10	. .	. .	. .	52.3	. .	. .	. .	13 52.14	19.22	−0.02	IV.	9	11.28	44 42.01	20.69	5.63	13 32.90	31 3 38.33
6	3	. .	. .	. .	43.2	. .	. .	. .	14 43.04	19.22	−0.03	IV.	10	9.14	48 35.35	20.95	6.16	14 23.79	31 7 32.46
7	8	. .	25.2	40.0	54.6	. .	. .	. .	19 54.37	19.22	0.00	III.	5	8.42	24 19.47	22.54	2.90	19 35.15	30 43 14.91
8	8	. .	58.9	13.6	28.1	. .	. .	. .	21 28.05	19.22	−0.01	V.	7	6.40	32 19.05	23.01	3.96	21 8.82	51 16.02
9	10	. .	. .	. .	. .	. .	. .	55.3	22 11.40	19.22	+0.01	VII.	2	8.20	9 10.67	23.24	0.93	21 52.19	28 4.84
10	7	. .	47.2	2.0	16.6	. .	. .	. .	24 16.47	19.22	−0.01	IV.	7	11.17	34 38.77	23.87	4.27	23 57.24	30 53 36.91
11	9	. .	. .	. .	. .	56.0	. .	. .	25 41.55	19.21	−0.03	III.	10	10.40	49 18.67	24.30	6.26	25 22.31	31 8 19.23
12	9	18.1	32.7	. .	1.9	. .	. .	. .	29 1.85	19.21	0.00	IV.	6	4.45	26 21.11	25.31	3.17	28 42.64	30 45 19.59
13	8	. .	. .	. .	54.0	8.7	22.7	. .	29 53.92	19.21	+0.01	VII.	3	9.39	14 49.61	25.58	1.65	29 34.72	30 33 46.84
14	9	. .	. .	20.1	34.7	. .	. .	. .	36 34.66	19.20	−0.02	IV.	9	7.43	42 48.56	27.57	5.38	36 15.44	31 1 51.51
15	9	. .	. .	. .	. .	21.1	35.5	50.3	37 6.60	19.20	−0.01	VII.	7	10.12	34 5.55	27.73	4.20	36 47.39	30 53 7.48
16	9	. .	. .	. .	. .	27.8	. .	57.2	38 13.35	19.20	0.00	VII.	5	7.14	23 34.69	28.07	2.81	37 54.15	42 35.57
17	8	. .	. .	2.8	17.7	. .	. .	. .	40 17.30	19.20	+0.01	IV.	3	11.56	15 59.14	28.69	1.82	40 58.11	34 59.65
18	7	. .	. .	. .	50.4	. .	19.3	34.0	40 50.27	19.20	0.01	VI.	3	9.57	15 29.19	28.85	1.75	40 31.08	34 29.79
19	8	13.7	28.5	43.4	. .	. .	. .	. .	43 57.60	19.20	+0.01	IV.	4	11.43	20 51.58	29.77	2.44	43 38.41	39 53.79
20	8	. .	. .	33.7	48.2	. .	17.0	. .	44 48.08	19.20	0.00	VI.	6	10.52	29 25.97	30.02	3.58	44 28.88	48 29.57
21	9	. .	. .	. .	. .	. .	53.8	. .	46 24.92	19.19	+0.01	VII.	3	6.39	13 18.85	30.49	1.46	46 5.74	32 20.80
22	7	. .	. .	. .	. .	. .	. .	40.5	49 56.53	19.19	0.02	VII.	1	7.35	3 48.98	31.53	0.25	49 37.36	22 50.76
23	7	. .	. .	. .	37.5	. .	6.0	21.2	9 53 37.28	19.18	0.01	VII.	4	7.41	18 49.10	32.60	2.18	9 53 18.11	37 53.88
24	8.9	. .	. .	. .	. .	27.8	. .	. .	10 2 13.15	19.17	+0.02	VI.	1	6.2	3 2.34	35.08	0.15	10 2 54.00	22 7.57
25	8	. .	. .	50.3	. .	19.6	. .	. .	7 5.01	19.15	0.00	V.	6	9.15	28 37.20	36.48	3.47	6 45.86	47 47.15
26	8	. .	. .	1.7	16.1	30.7	. .	. .	9 16.06	19.14	0.00	V.	5	9.57	24 57.28	37.10	2.98	8 56.92	44 7.36
27	8	. .	8.4	23.4	38.0	. .	. .	. .	13 37.98	19.13	−0.01	IV.	7	7.11	32 34.72	38.32	4.00	13 18.84	51 47.14
28	7	. .	. .	. .	. .	. .	12.7	27.6	13 43.84	19.13	−0.01	VII.	7	3.25	30 40.31	38.35	3.75	13 24.70	49 52.41
29	9	. .	50.2	. .	. .	. .	. .	. .	17 19.34	19.12	0.00	II.	6	9.18	28 38.56	39.35	3.47	17 0.22	47 51.38
30	10	. .	. .	. .	. .	. .	59.3	14.3	17 30.48	19.12	0.00	VII.	6	6.10	27 3.52	39.40	3.26	17 11.36	30 46 16.18
31	8	. .	. .	. .	. .	48.9	2.7	. .	25 34.05	19.09	−0.02	VII.	10	2.16	45 4.13	41.61	5.68	25 14.94	31 4 21.42
32	7	. .	. .	57.5	12.2	26.4	. .	. .	28 11.86	19.08	+0.01	V.	3	9.51	14 56.05	42.33	1.67	27 52.79	30 34 10.05
33	9	. .	. .	. .	49.3	3.7	. .	. .	29 49.15	19.08	0.00	VI.	6	6.30	27 13.86	42.70	3.29	29 30.07	46 29.85
34	5	. .	. .	. .	. .	51.1	5.2	20.3	30 36.52	19.08	−0.01	VII.	8	11.47	39 52.15	42.98	4.98	30 17.43	30 59 10.11
35	8	. .	. .	. .	41.3	. .	10.0	. .	34 41.05	19.07	0.02	VI.	9	10.6	44 0.48	44.05	5.54	34 21.96	31 3 20.07
36	6	. .	. .	. .	38.2	52.3	6.7	. .	36 37.84	19.06	−0.01	VI.	8	10.16	39 6.52	44.57	4.87	36 18.77	30 58 25.96
37	9	. .	56.8	. .	26.2	40.6	. .	. .	38 25.93	19.05	+0.01	VI.	3	7.28	13 43.79	44.93	1.52	38 6.89	33 0.24
38	7	. .	. .	37.1	51.6	6.3	. .	. .	40 51.59	19.05	0.00	IV.	6	10.58	29 29.19	45.68	3.59	40 32.54	48 48.46
39	6	. .	. .	. .	. .	46.9	1.0	15.7	41 32.17	19.04	−0.01	VII.	7	11.3	34 31.26	45.85	4.26	41 13.12	53 51.37
40	9	. .	. .	. .	. .	49.1	. .	18.4	42 34.60	19.04	0.00	VI.	5	7.8	23 31.91	46.11	2.80	42 15.56	42 50.82
41	7	. .	36.3	50.3	5.7	. .	. .	. .	49 5.35	19.00	−0.01	V.	8	11.42	39 50.03	47.77	4.97	48 46.34	59 12.77
42	7	. .	. .	. .	5.3	20.3	34.0	. .	50 5.32	19.00	+0.02	VI.	1	9.29	4 46.71	48.02	0.37	49 46.34	30 24 5.10
43	5.6	9.0	24.2	38.7	. .	. .	. .	. .	10 53 53.32	18.98	−0.01	IV.	9	7.50	42 52.09	48.93	5.39	10 53 34.33	31 2 16.41
44	11	. .	. .	50.3	. .	. .	. .	. .	11 2 4.48	18.95	+0.01	VI.	3	2.56	11 26.65	50.87	1.22	11 1 45.54	30 30 48.74
45	8	27.6	42.6	57.3	. .	. .	. .	. .	11 11.77	18.90	−0.01	III.	8	4.57	36 25.81	52.92	4.51	10 52.86	55 53.24
46	9	. .	. .	. .	. .	2.7	. .	32.	11 48.12	18.90	+0.01	VII.	3	5.43	12 50.60	53.05	1.40	11 29.23	32 15.05
47	9	51.4	6.3	21.3	. .	. .	. .	. .	14 35.42	18.89	0.00	IV.	5	5.17	22 36.14	53.65	2.68	14 16.53	30 42 2.47
48	8	. .	. .	12.7	. .	41.4	55.4	. .	21 26.89	18.85	−0.01	VI.	9	6.49	42 21.14	55.10	5.31	21 8.03	31 1 51.55
49	2.3	. .	27.9	42.7	57.3	11.3	. .	. .	11 25 57.13	−18.82	−0.01	VI.	9	6.29	−42 11.05	−56.01	−5.29	11 25 38.30	−31 1 42.35

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
April 9,	9	*f* 25.67	*l* 0.000	+ 0.260	− 0.055	− 0.121

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM. At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 107	April 9,	9	6	29.736	63.4	55.7

REMARKS.

(107) 18. Micrometer reading assumed as 10ʳ.57 instead of 9ʳ.57.

ZONE 107. APRIL 9. K. BELT, −30° 38′. $D_0 = -30° 18′ 30″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	4.5	. .	10.3	24.8	39.3	. .	. .	. .	11 30 39.06	−18.80	+0.02	III.	1	7.24	− 3 43.83	−56.95	−0.20	11 30 20.28	−30 23 10.98
51	9	. .	39.3	54.0	. .	. .	. .	. .	37 8.44	18.76	0.00	IV.	6	8.7	28 2.97	58.21	3.40	36 49.68	47 34.58
52	9	. .	. .	. .	52.0	. .	20.6	. .	37 51.72	18.75	−0.01	VI.	8	6.17	37 6.00	58.35	4.61	37 32.96	56 38.96
53	8	. .	. .	. .	. .	27.8	41.8	56.8	40 12.99	18.74	+0.01	VI.	2	1.38	5 48.21	58.80	0.49	39 54.26	25 17.50
54	9	. .	. .	9.4	. .	. .	. .	. .	46 23.86	18.70	0.00	IV.	6	8.44	28 21.63	59.94	3.44	46 5.16	47 55.01
55	8	. .	. .	15.7	30.1	44.6	. .	. .	47 30.07	18.69	0.00	IV.	6	12.48	30 24.65	60.14	3.72	47 11.38	49 58.51
56	8	. .	. .	31.3	. .	0.4	. .	. .	50 45.82	18.67	0.00	IV.	6	10.34	29 17.10	60.73	3.57	50 27.15	48 51.40
57	7	56.2	10.9	25.7	. .	. .	. .	. .	55 40.15	18.64	0.00	III.	7	5.42	31 49.80	61.59	3.90	55 21.51	51 25.29
58	8	. .	. .	. .	. .	18.4	32.7	47.8	11 56 3.88	−18.64	0.00	VII.	4	12.2	−21 0.71	−61.66	−2.47	11 55 45.24	−30 40 34.84

ZONE 108. APRIL 13. K. BELT, −29° 23′. $D_0 = -29° 6′ 10″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	0.1	14.0	. .	. .	. .	. .	10 22 43.22	−19.87	−0.01	V.	8	11.30	−39 43.98	−31.46	−4.77	10 22 23.34	−29 46 30.21
2	5	27.5	41.7	56.0	10.2	. .	. .	. .	10 25 10.37	−19.86	0.00	IV.	5	10.00	−24 58.85	−31.72	−3.00	10 24 50.51	−29 31 43.57

ZONE 109. APRIL 16. K. BELT, −29° 46′. $D_0 = -29° 21′ 40″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	. .	24.8	9 14 41.68	−20.10	−0.02	VII.	9	7.59	−42 56.20	−18.24	−5.25	9 14 21.56	−30 4 59.69
2	8.9	. .	. .	. .	42.4	56.5	. .	. .	16 42.17	20.11	−0.01	V.	7	4.16	31 6.44	18.67	3.77	16 22.05	29 53 8.88
3	9	. .	. .	. .	. .	. .	36.6	51.3	17 7.96	20.11	0.00	VII.	6	9.46	28 52.46	18.76	3.49	16 47.85	50 54.71
4	7	. .	32.1	46.8	0.7	. .	. .	. .	24 0.70	20.11	+0.02	V.	2	4.34	7 17.12	20.22	0.83	23 40.61	29 18.17
5	9	. .	. .	. .	. .	. .	55.7	10.4	24 27.03	20.11	0.00	VI.	5	3.2	21 27.88	20.32	2.57	24 6.92	43 30.77
6	10	. .	. .	. .	. .	. .	. .	43.3	26 0.10	20.11	−0.01	VII.	7	11.19	34 39.35	20.65	4.22	25 39.98	56 44.22
7	9	. .	. .	. .	34.8	. .	. .	. .	28 34.64	20.11	+0.02	IV.	1	7.19	3 41.36	21.19	0.40	28 14.55	29 25 42.95
8	9	. .	. .	. .	. .	. .	49.3	. .	29 20.51	20.11	−0.02	VI.	9	9.38	43 46.36	21.35	5.35	29 0.38	30 5 53.06
9	10	. .	. .	. .	. .	. .	55.1	. .	30 26.40	20.11	0.00	VI.	6	5.58	26 57.72	21.58	3.26	30 6.29	29 49 2.56
10	6	. .	. .	. .	. .	. .	. .	45.6	31 2.09	20.11	+0.02	VII.	2	10.31	10 16.75	21.70	1.20	30 42.00	32 19.65
11	7	6.8	21.4	36.0	. .	. .	. .	. .	33 50.30	20.11	0.00	III.	6	6.35	27 16.53	22.28	3.29	33 30.19	29 49 22.10
12	10	. .	. .	. .	19.2	. .	. .	. .	34 19.04	20.11	−0.02	IV.	9	4.55	41 23.85	22.37	5.04	33 58.91	30 3 31.26
13	5	. .	10.2	. .	39.2	. .	. .	. .	35 38.99	20.10	+0.01	IV.	3	10.28	15 14.76	22.65	1.80	35 18.90	29 37 19.21
14	9	. .	18.2	32.7	. .	. .	. .	. .	37 46.89	20.10	0.01	III.	3	11.17	15 39.42	23.10	1.85	37 26.80	37 44.37
15	6	. .	38.2	52.6	7.0	. .	. .	. .	39 6.78	20.10	+0.02	IV.	2	7.25	8 43.38	23.37	1.01	38 46.70	30 47.76
16	10	. .	. .	. .	0.0	. .	28.2	. .	39 59.66	20.10	−0.01	VII.	7	4.49	31 22.70	23.55	3.80	39 39.55	53 30.05
17	9	. .	. .	. .	. .	. .	23.4	. .	40 54.78	20.10	+0.01	VII.	3	5.33	12 45.58	23.73	1.50	40 34.69	34 30.81
18	7	. .	. .	. .	16.9	31.1	. .	. .	42 16.68	20.10	+0.01	VI.	3	11.1	15 31.21	24.01	1.83	41 56.59	37 37.05
19	9	. .	. .	. .	. .	. .	33.9	48.5	43 5.18	20.10	0.00	VI.	5	4.49	22 21.84	24.17	2.66	42 45.08	29 44 28.67
20	10	. .	. .	. .	. .	. .	59.8	. .	45 31.04	20.09	−0.01	VI.	8	11.11	39 34.25	24.65	4.83	45 10.94	30 1 43.73
21	9	. .	. .	. .	19.3	. .	47.6	. .	47 19.00	20.09	−0.01	VI.	8	6.39	37 17.11	25.01	4.54	46 58.90	29 59 26.66
22	7	. .	. .	. .	. .	30.6	. .	. .	50 16.07	20.09	+0.02	V.	1	5.15	2 38.78	25.60	0.27	49 56.00	24 44.65
23	9	. .	. .	53.2	. .	21.8	. .	. .	52 7.26	20.09	+0.02	VI.	2	6.18	8 9.41	25.96	0.92	51 47.19	30 16.29
24	8	. .	. .	. .	. .	11.3	25.3	40.2	52 56.83	20.09	−0.01	VI.	8	4.39	36 16.60	26.11	4.40	52 36.73	29 58 27.11
25	10	. .	. .	. .	. .	40.7	. .	. .	54 26.34	20.09	−0.01	V.	9	5.16	41 34.39	26.40	5.08	54 6.24	30 3 45.87
26	5.6	. .	58.8	. .	27.8	. .	. .	. .	56 27.67	20.08	0.00	IV.	6	10.21	29 10.53	26.80	3.52	56 7.59	29 51 20.85
27	9	. .	. .	. .	. .	22.2	35.8	. .	9 57 7.44	20.08	+0.01	VI.	2	8.51	9 26.56	26.92	1.10	9 56 47.37	31 34.58
28	9	. .	. .	. .	39.8	. .	. .	. .	10 6 39.64	20.07	0.02	IV.	1	10.30	5 17.68	28.73	0.58	10 6 19.59	27 26.99
29	8	. .	. .	. .	. .	. .	29.1	43.8	7 0.48	20.07	+0.01	VII.	4	8.14	19 5.77	28.79	2.25	6 40.42	29 41 16.81
30	6	. .	. .	. .	. .	30.7	44.6	. .	10 8 16.09	−20.06	−0.01	VI.	9	6.28	−42 10.55	−29.03	−5.16	10 7 56.02	−30 4 24.74

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
April 13,	11	*f* 25.95	*g* 0.012	+ 0.210	+ 0.016	− 0.121
April 16,	11	*f* 25.99	*l* 0.002	+ 0.092	+ 0.050	− 0.121

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 108	April 13, 10 22	29.89	58.7	48.0
Zone 109	April 16, 9 15	29.78	54.	46.8

REMARKS.

(108) 1. Transits over T.'s I and II assumed as recorded over T.'s II and III.

ZONE 109. APIRL 16. K. BELT, −29° 46′. D₀=−29° 21′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	° ′ ″	h. m. s.
31	10	. .	. .	47.0	. .	15.7	. .	. .	10 10 1.24	−20.06	+0.01	V.	4	5.35	−17 45.97	−29.35	−2.10	10 9 41.19	−29 39 57.42
32	9	. .	. .	46.7	. .	15.4	. .	. .	14 0.95	20.05	0.00	V.	5	6.37	23 16.44	30.07	2.77	13 40.90	45 29.28
33	8	. .	. .	13.0	27.4	. .	. .	. .	15 27.18	20.05	−0.01	III.	7	9.2	33 30.65	30.32	4.06	15 7.12	55 45.03
34	7.8	. .	. .	. .	3.9	18.2	. .	. .	16 3.77	20.05	−0.01	VI.	7	5.43	31 15.16	30.43	3.79	15 43.71	53 29.38
35	6.7	. .	. .	. .	17.3	31.8	. .	. .	17 17.22	20.05	+0.01	IV.	2	8.30	8 15.66	30.76	1.04	16 57.18	29 30 27.46
36	9	. .	. .	. .	. .	. .	42.7	. .	18 13.92	20.04	−0.01	VI.	9	8.7	43 0.48	30.82	5.27	17 53.87	30 5 16.57
37	10	. .	. .	. .	. .	. .	. .	47.9	19 4.67	20.04	−0.01	VII.	7	7.14	32 35.81	30.97	3.96	18 44.62	29 54 30.74
38	9	. .	. .	. .	. .	. .	. .	32.3	19 49.04	20.04	0.00	VII.	6	11.47	29 53.47	31.11	3.62	19 29.00	52 8.20
39	9	. .	16.8	31.4	. .	. .	. .	. .	22 45.64	20.03	0.00	III.	5	8.20	24 8.37	31.61	2.88	22 25.61	46 22.86
40	4.5	. .	. .	. .	. .	16.2	30.3	. .	23 1.69	20.03	0.00	VI.	6	8.24	28 11.35	31.66	3.41	22 41.66	50 26.46
41	10	. .	. .	. .	. .	22.4	. .	. .	27 7.91	20.03	+0.01	V.	2	11.7	10 35.28	32.35	1.22	26 47.89	32 28.85
42	9	. .	. .	. .	33.7	. .	. .	. .	28 33.54	20.02	+0.01	IV.	2	13.1	11 32.80	32.60	1.34	28 13.53	29 33 46.74
43	9	. .	. .	32.1	46.6	. .	. .	. .	29 46.52	20.02	−0.01	IV.	8	12.18	40 8.22	32.81	4.89	29 26.49	30 2 25.92
44	7	. .	. .	. .	46.7	. .	14.8	. .	34 46.33	20.01	0.00	VI.	4	15.32	22 46.85	33.63	2.71	34 26.32	29 45 3.19
45	6.7	. .	. .	43.3	58.1	. .	. .	. .	36 57.89	20.00	−0.01	IV.	9	7.10	42 31.92	33.98	5.21	36 37.88	30 4 51.11
46	6.7	29.5	. .	. .	. .	27.3	. .	. .	39 12.94	19.99	−0.01	IV.	9	5.34	41 43.52	34.35	5.10	38 52.94	30 4 2.97
47	10	. .	. .	. .	44.5	. .	. .	. .	40 44.34	19.99	0.00	IV.	6	9.3	28 31.20	34.59	3.44	40 24.35	29 50 49.23
48	8	37.9	52.7	7.0	. .	. .	. .	. .	42 21.53	19.98	−0.01	III.	7	12.17	35 8.97	34.85	4.28	42 1.54	57 28.10
49	7	. .	. .	. .	. .	43.9	. .	. .	42 29.49	19.98	0.00	VI.	6	9.14	28 36.56	34.87	3.45	42 9.51	50 54.88
50	7	. .	. .	. .	. .	. .	. .	25.6	42 40.25	19.98	0.00	VII.	5	6.35	23 15.05	34.90	2.78	42 20.27	45 32.73
51	9	. .	. .	56.9	. .	25.4	. .	. .	46 10.93	19.97	+0.01	IV.	2	11.13	10 38.35	35.45	1.23	45 50.95	32 55.03
52	8	21.3	. .	50.5	4.8	. .	. .	. .	48 4.59	19.97	+0.01	III.	2	9.57	9 59.98	35.74	1.16	47 44.63	32 16.88
53	9	. .	. .	. .	. .	46.6	0.8	. .	48 32.14	19.96	0.00	VII.	6	5.50	26 53.45	35.81	3.26	48 12.18	49 12.52
54	8	. .	22.7	37.2	. .	. .	. .	. .	50 51.25	19.96	+0.02	IV.	2	0.28	5 13.11	36.17	0.56	50 31.31	29 27 29.84
55	9	. .	43.7	48.1	. .	. .	. .	. .	53 12.50	19.95	−0.01	III.	9	10.00	43 57.60	36.52	5.39	52 52.54	30 6 19.51
56	8	. .	. .	. .	44.9	58.9	. .	. .	56 44.57	19.93	+0.02	V.	1	10.20	5 12.58	37.04	0.57	56 24.66	29 27 30.19
57	6.7	. .	. .	. .	. .	56.2	10.4	. .	57 41.74	19.93	−0.01	VI.	8	11.22	39 39.80	37.19	4.85	57 21.80	30 2 1.84
58	6.7	. .	. .	. .	. .	. .	49.9	4.4	10 58 21.11	19.93	+0.01	VII.	3	10.40	15 20.39	37.28	1.80	58 1.19	29 37 39.47
59	5.6	. .	. .	46.2	0.5	. .	28.9	. .	11 0 0.33	19.92	0.00	VII.	5	4.29	22 11.51	37.53	2.65	10 59 40.41	44 31.69
60	9	. .	22.3	36.6	. .	. .	. .	. .	1 51.14	19.91	−0.01	IV.	8	2.28	35 10.72	37.79	4.28	11 1 31.22	57 32.79
61	9	. .	. .	26.3	40.8	. .	. .	. .	3 40.54	19.91	+0.01	IV.	3	12.17	16 9.72	38.05	1.89	3 20.64	38 29.66
62	8	. .	. .	. .	. .	. .	59.9	. .	7 31.22	19.90	0.00	VII.	5	8.51	24 23.62	38.60	2.92	7 11.32	29 46 45.14
63	7	. .	. .	. .	57.0	. .	. .	. .	8 56.84	19.89	−0.01	V.	8	10.55	39 26.33	38.80	4.83	8 36.94	30 1 49.96
64	6	. .	. .	13.3	27.4	. .	. .	. .	12 27.28	19.88	+0.01	IV.	1	15.26	7 46.91	39.28	0.88	12 7.41	29 30 7.07
65	6	. .	. .	. .	. .	. .	26.5	41.8	12 58.11	19.88	+0.01	VII.	3	10.27	15 13.83	39.35	1.78	12 38.24	29 37 34.96
66	7	. .	3.4	17.8	. .	. .	. .	. .	15 32.38	19.86	−0.01	III.	9	6.47	42 20.28	39.69	5.19	15 12.51	30 4 45.16
67	8	. .	. .	. .	0.7	. .	28.8	. .	16 0.28	19.86	−0.01	VI.	9	5.55	41 53.91	39.75	5.14	15 40.41	30 4 18.80
68	9	. .	. .	. .	. .	. .	. .	22.0	16 38.58	19.86	+0.01	VII.	4	5.17	17 36.51	39.84	2.06	16 18.73	29 39 58.41
69	9	. .	. .	33.8	. .	. .	. .	. .	20 47.96	19.84	0.01	IV.	4	5.50	17 53.58	40.39	2.11	20 28.13	40 16.08
70	9	. .	59.2	13.7	. .	. .	. .	. .	23 27.86	19.82	+0.01	III.	3	8.31	14 15.72	40.72	1.68	23 8.05	36 38.12
71	10	. .	. .	. .	. .	. .	18.0	. .	23 49.35	19.82	0.00	VI.	4	7.59	18 58.44	40.77	2.25	23 29.53	29 41 21.46
72	8	. .	. .	. .	24.4	. .	52.5	. .	25 23.97	19.82	−0.01	VI.	10	4.34	46 13.98	40.96	5.69	25 4.14	30 8 40.63
73	7.8	. .	. .	. .	41.9	56.2	. .	. .	26 41.76	19.81	0.00	VI.	6	6.24	27 10.84	41.13	3.28	26 21.95	29 49 35.25
74	7	. .	. .	. .	43.5	58.0	. .	. .	27 57.94	19.81	0.00	VI.	7	4.45	31 20.92	41.25	3.80	27 38.13	29 53 45.97
75	9	13.2	27.4	. .	. .	. .	. .	. .	31 56.64	19.79	−0.01	II.	9	2.51	40 21.13	41.76	4.94	31 36.84	30 2 47.83
76	8	. .	. .	. .	53.2	7.5	. .	. .	32 53.04	19.79	+0.01	VI.	4	3.2	16 28.68	41.87	1.93	32 33.26	29 38 52.48
77	8	. .	. .	. .	. .	. .	. .	11.4	38 28.31	19.76	−0.01	VII.	10	2.1	44 56.58	42.51	5.54	38 8.54	30 7 24.63
78	7	. .	. .	. .	. .	. .	. .	5.1	39 22.01	19.75	−0.01	VII.	10	1.13	44 32.37	42.61	5.48	39 2.25	30 7 0.46
79	9	. .	. .	. .	. .	. .	30.1	. .	11 42 1.40	−19.74	0.00	VII.	6	7.10	−27 33.79	−42.89	−3.33	11 41 41.66	−29 50 0.01

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1846.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1846.	h. m.	in.	°	°

REMARKS.

(109) 35. Micrometer reading assumed as 6 instead of 8.
(109) 50. T. VII assumed as 23ˢ.6 instead of 25ˢ.6.
(109) 52. Minutes of transit assumed as 48 instead of 47.
(109) 55. T. III assumed as 58ˢ.1 instead of 48ˢ.1.
(109) 74. Transits over T.'s III and IV assumed as recorded over T.'s IV and V.

ZONE 109. APRIL 16. K. BELT, −29° 46′. D₀=−29° 21′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
80	4.5	. .	58.1	. .	27.3	. .	. .	. .	11 44 27.11	−19.73	−0.01	IV.	8	5.45	−36 50.06	−43.15	−4.49	11 44 7.37	−29 59 17.70
81	8	22.0	36.6	51.0	. .	. .	. .	. .	53 5.38	19.68	0.00	III.	5	7.12	23 34.08	44.04	2.81	52 45.70	46 0.93
82	8	. .	. .	. .	. .	. .	. .	49.0	53 5.46	19.68	+0.01	VII.	2	5.15	7 37.40	44.04	0.84	52 45.79	30 2.28
83	7	. .	. .	39.1	. .	7.3	. .	. .	54 53.11	19.67	0.00	V.	5	7.35	23 45.68	44.22	2.83	54 33.44	46 12.73
84	9	. .	23.2	. .	52.2	. .	. .	. .	11 59 52.04	19.64	0.00	IV.	6	11.50	29 55.41	44.71	3.63	11 59 32.40	52 23.75
85	7.8	. .	. .	. .	. .	. .	45.8	. .	12 4 17.12	19.61	0.00	VII.	5	7.18	23 36.72	45.10	2.83	12 3 57.51	29 46 4.65
86	9	. .	. .	54.2	. .	. .	. .	. .	11 8.74	19.57	−0.01	IV.	9	6.46	42 19.83	45.69	5.20	10 49.16	30 4 50.72
87	9	. .	. .	. .	3.8	. .	. .	. .	13 3.64	19.56	+0.01	IV.	3	7.58	13 59.12	45.84	1.63	12 44.09	29 36 26.59
88	9	. .	. .	. .	. .	. .	47.4	2.0	13 18.68	19.56	0.00	VII.	5	4.23	22 8.48	45.86	2.61	12 59.12	44 36.95
89	9	. .	. .	. .	. .	. .	. .	43.4	13 59.97	19.55	+0.01	VII.	4	3.23	16 39.02	45.92	1.95	13 40.43	39 6.89
90	5.6	. .	48.2	. .	16.9	. .	. .	. .	16 16.80	19.54	+0.01	IV.	2	5.26	7 43.38	46.10	0.86	15 57.27	30 10.34
91	9	. .	. .	. .	. .	. .	. .	14.3	16 30.88	19.54	0.00	VII.	4	5.50	17 53.15	46.12	2.12	16 11.34	40 21.39
92	9	. .	. .	27.5	. .	. .	. .	. .	21 41.96	19.51	−0.01	IV.	8	6.39	37 17.30	46.51	4.56	21 22.44	59 48.37
93	7.8	. .	. .	. .	37.0	51.0	. .	. .	22 36.70	19.50	0.00	V.	4	11.45	20 52.54	46.57	2.48	22 17.20	43 21.59
94	5.6	. .	. .	. .	. .	35.1	. .	3.7	23 20.56	19.50	0.00	VI.	6	8.47	28 22.95	46.62	3.43	23 1.06	50 53.00
95	9	. .	. .	. .	. .	. .	7.8	. .	30 39.07	19.45	0.00	VI.	7	8.49	33 23.96	47.13	4.06	30 19.62	55 55.15
96	4	. .	. .	. .	. .	. .	. .	8.5	31 25.03	19.44	+0.01	VII.	3	6.41	13 19.87	47.18	1.53	31 5.60	29 35 48.58
97	7	. .	. .	. .	6.8	20.8	. .	. .	35 6.55	19.42	−0.01	V.	9	11.40	44 48.02	47.40	5.51	34 47.12	30 7 20.93
98	6	. .	19.8	. .	48.8	. .	. .	. .	41 48.72	19.38	0.00	IV.	8	6.33	37 14.27	47.79	4.56	41 29.34	29 59 46.62
99	6	. .	. .	. .	. .	55.3	. .	24.0	42 40.76	19.37	0.00	VI.	5	6.12	23 3.69	47.84	2.75	42 21.39	45 34.28
100	8	. .	. .	. .	22.3	36.2	. .	. .	44 21.96	19.36	0.00	IV.	6	6.20	27 9.01	47.92	3.26	44 2.60	49 40.19
101	9	. .	51.8	6.2	. .	. .	. .	. .	52 20.34	19.30	0.00	IV.	5	9.59	24 58.34	48.31	3.00	52 1.04	29 47 29.65
102	8	. .	. .	. .	58.0	12.0	. .	. .	53 57.74	19.29	0.00	IV.	8	9.48	38 52.59	48.37	4.76	53 38.45	30 1 25.72
103	9	. .	. .	. .	57.0	. .	25.6	. .	54 56.92	19.29	0.00	IV.	2	8.37	9 19.70	48.41	1.06	54 37.63	29 31 49.17
104	9	. .	17.2	. .	. .	. .	. .	. .	12 59 45.93	−19.25	0.00	III.	3	10.39	−15 20.27	−48.61	−1.79	12 59 26.68	−29 37 50.67

ZONE 110. APRIL 16. K. BELT, −29° 46′. D₀=−29° 21′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	48.9	3.6	. .	. .	. .	. .	. .	14 16 32.63	−18.63	0.00	III.	9	10.53	−44 24.32	−40.27	−5.49	14 16 14.00	−30 7 0.08
2	5.4	52.7	7.1	21.8	. .	. .	. .	. .	24 36.26	18.56	0.00	III.	8	12.39	40 18.75	39.33	4.96	24 17.70	30 2 53.04
3	7	. .	11.2	25.7	. .	. .	. .	. .	28 39.80	18.52	0.00	III.	2	7.19	8 40.31	38.84	0.96	28 21.28	29 31 10.11
4	7	. .	20.6	35.0	49.3	. .	. .	. .	31 49.34	18.49	0.00	IV.	7	3.30	30 43.29	38.45	3.73	31 30.85	53 15.47
5	9	49.9	4.2	. .	. .	. .	. .	. .	34 33.16	18.47	0.00	II.	4	10.45	20 22.15	38.09	2.41	34 14.69	42 52.65
6	7	. .	. .	. .	. .	6.8	. .	. .	34 52.31	18.47	0.00	VI.	2	12.42	11 23.04	38.04	1.28	34 33.84	33 52.36
7	9	. .	. .	. .	. .	1.6	. .	. .	39 32.91	18.42	0.00	VI.	5	9.7	24 31.93	37.41	2.94	39 14.49	47 2.28
8	9	. .	. .	. .	. .	. .	. .	38.3	39 54.99	18.42	0.00	VII.	6	4.57	26 26.73	37.39	3.19	39 36.57	48 57.31
9	5	13.0	27.8	. .	. .	. .	. .	. .	43 56.68	18.38	0.00	II.	8	1.45	34 48.85	36.83	4.24	43 38.30	57 19.92
10	6	. .	34.7	49.2	. .	. .	. .	. .	55 3.58	18.28	0.00	IV.	6	12.42	30 21.63	35.25	3.68	54 45.30	52 50.56
11	5	. .	19.4	34.2	48.6	. .	. .	. .	56 48.48	18.27	0.00	IV.	7	13.00	35 30.70	34.99	4.35	56 30.21	58 0.04
12	8	. .	. .	. .	. .	40.6	54.6	. .	14 57 26.04	18.26	0.00	VII.	6	7.4	27 30.77	34.90	3.33	14 57 7.78	29 49 59.00
13	9	. .	50.2	4.6	. .	. .	. .	. .	15 0 19.20	18.24	+0.01	IV.	9	9.19	43 36.97	34.48	5.38	15 0 0.97	30 6 6.83
14	3.4	. .	32.8	47.4	1.8	. .	. .	. .	10 1.55	18.15	0.00	III.	3	6.23	13 11.17	32.96	1.50	8 43.40	29 35 35.63
15	9	. .	. .	25.6	. .	54.3	. .	. .	13 39.90	18.12	0.00	IV.	6	7.30	27 44.31	32.36	3.35	13 21.78	50 10.02
16	9	. .	. .	. .	. .	. .	55.3	. .	31 26.71	17.96	−0.02	VI.	1	12.16	6 10.93	29.34	0.64	31 8.73	28 30.91
17	8	. .	. .	. .	58.6	. .	27.8	. .	32 58.80	17.94	0.00	V.	4	4.20	17 8.15	29.05	1.96	32 40.86	29 39 29.16
18	7	. .	. .	. .	28.3	. .	56.6	. .	34 27.99	17.93	+0.01	VI.	9	3.38	40 44.83	28.78	5.03	34 10.07	30 3 8.64
19	6	. .	. .	. .	50.2	4.6	. .	. .	36 50.08	17.91	0.00	IV.	3	3.12	11 34.91	28.36	1.31	36 32.17	29 33 54.58
20	9	. .	. .	1.2	15.6	. .	. .	. .	15 40 15.43	−17.88	0.00	IV.	5	4.32	−22 13.46	−27.73	−2.63	15 39 57.55	−29 44 33.82

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(109) 101. Transit over T. II assumed as at 51ˢ.8.
(110) 7. Transit over T. VI assumed as recorded over T. V.
(110) 14. Minutes assumed as 9 instead of 10.

ZONE 110. APRIL 16. K. BELT, −29° 46′. D_0=−29° 21′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	4	. .	. .	2.3	16.2	. .	. .	. .	15 43 16.14	−17.85	−0.02	IV.	1	6.30	− 3 16.66	−27.16	−0.30	15 42 58.27	−29 25 34.12
22	9	42.8	57.2	. .	. .	. .	. .	. .	45 26.30	17.83	+0.01	III.	8	4.5	35 59.59	26.76	4.42	45 8.48	58 20.77
23	6	. .	. .	. .	. .	. .	7.4	22.1	50 38.71	17.78	+0.01	VII.	4	3.16	16 35.50	25.77	1.90	50 20.94	38 53.17
24	9	. .	31.3	46.0	. .	. .	. .	. .	54 0.25	17.75	−0.01	IV.	6	8.4	28 1.46	25.10	3.37	53 42.49	50 19.93
25	9	. .	. .	. .	31.1	45.5	. .	. .	54 31.00	17.77	0.00	IV.	4	11.1	20 30.40	25.00	2.43	54 13.25	42 47.83
26	9	15.8	30.5	45.0	. .	. .	. .	. .	15 59 59.35	−17.70	0.00	III.	6	9.51	−28 55.35	−23.91	−3.50	15 59 41.65	−29 51 12.76
ZONE 111. APRIL 21. K. BELT, −28° 46′. D_0=−28° 23′ 10″.																			
1	9	. .	. .	. .	53.4	. .	21.8	. .	9 48 53.36	−17.84	+0.02	IV.	2	10.35	−10 19.20	−22.88	−1.45	9 48 35.54	−28 33 53.53
2	9	. .	. .	. .	22.8	36.9	. .	. .	50 22.60	17.84	0.02	V.	2	9.29	9 45.86	23.18	1.39	50 4.78	33 20.43
3	7	. .	. .	4.2	18.1	. .	. .	. .	9 52 18.e3	17.84	+0.02	V.	2	13.30	11 47.38	23.55	1.59	9 52 0.21	35 22.52
4	9	. .	. .	. .	28.3	. .	56.6	. .	10 10 28.15	17.81	−0.01	VI.	7	5.24	31 40.58	27.08	3.71	10 10 10.33	28 55 21.37
5	7	. .	. .	44.3	58.4	. .	. .	. .	14 58.51	17.80	−0.02	III.	10	6.50	47 22.69	27.92	5.43	14 40.69	29 11 6.04
6	8	. .	. .	. .	46.9	1.0	. .	. .	15 46.73	17.80	0.00	IV.	5	8.55	24 26.07	28.07	2.94	15 28.93	28 48 7.08
7	7	. .	51.2	5.7	20.0	. .	. .	. .	17 19.85	17.80	0.00	IV.	6	11.35	29 47.85	28.36	3.50	17 2.05	53 29.71
8	5	. .	. .	33.1	47.2	. .	. .	. .	18 47.08	17.79	+0.01	I.	4	4.38	17 16.86	28.64	2.19	18 29.30	40 57.69
9	10	. .	. .	. .	25.4	. .	53.4	. .	21 25.10	17.79	−0.01	V.	7	6.49	32 23.59	29.12	3.79	21 7.30	56 6.50
10	5	. .	. .	. .	. .	. .	19.3	33.2	22 50.62	17.78	−0.01	VI.	7	2.24	30 9.82	29.38	3.55	22 32.83	53 52.75
11	10	. .	. .	. .	. .	6.6	. .	. .	25 52.29	17.78	+0.01	V.	4	9.55	19 57.05	29.93	2.47	25 34.52	43 39.45
12	10	. .	. .	32.8	. .	1.5	. .	. .	33 47.17	17.76	−0.01	V.	7	10.28	34 14.01	31.32	4.00	33 29.40	57 59.33
13	10	. .	. .	. .	. .	. .	. .	49.8	34 7.01	17.76	−0.01	VII.	7	10.16	34 7.60	31.38	3.98	33 49.24	57 52.96
14	10	. .	. .	. .	37.3	. .	. .	. .	36 37.14	17.75	0.00	IV.	5	4.31	22 12.95	31.81	2.71	36 19.39	45 51.47
15	8	36.2	50.4	5.0	19.4	33.4	47.3	1.8	38 19.11	17.75	−0.01	I.	7	2.11	30 3.03	32.10	3.53	38 1.35	28 53 48.65
16	6	. .	. .	. .	. .	3.9	. .	. .	42 49.72	17.73	−0.02	V.	10	8.43	48 19.67	32.87	5.53	42 31.97	29 12 8.07
17	8	16.0	30.3	44.8	59.2	13.0	. .	41.8	44 58.87	17.73	0.00	VII.	6	7.12	27 34.81	33.22	3.28	44 41.14	28 51 21.31
18	10	. .	. .	. .	. .	8.9	. .	. .	46 8.74	17.72	−0.02	V.	9	8.21	43 7.67	33.40	4.97	45 51.00	29 6 56.04
19	9	. .	3.9	18.4	. .	. .	. .	. .	50 32.24	17.71	+0.02	III.	1	10.1	5 3.00	34.13	0.88	50 14.55	28 28 48.01
20	7	. .	. .	. .	18.9	. .	. .	. .	51 18.74	17.70	+0.02	IV.	1	4.55	2 28.75	34.26	0.63	51 1.06	28 26 13.64
21	8	. .	. .	12.3	26.8	40.7	. .	. .	10 59 26.63	−17.67	−0.02	IV.	10	3.43	−45 48.44	−35.54	−5.26	10 59 8.94	−29 9 39.24
ZONE 112. APRIL 24. K. BELT, −28° 46′. D_0=−28° 24′ 30″.																			
1	6	33.8	48.3	. .	. .	. .	. .	. .	11 1 17.07	−14.95	−0.00	III.	9	11.4	−44 29.87	−32.00	−5.23	11 1 2.11	−29 9 37.10
2.	7	. .	. .	. .	40.8	. .	. .	23.3	1 40.56	14.95	0.00	VII.	6	14.1	31 1.03	31.94	3.70	1 25.61	28 56 6.67
3	7	. .	. .	. .	. .	. .	27.6	. .	11 2 59.15	−14.95	−0.01	VII.	7	9.33	−33 45.91	−31.78	−4.01	11 2 44.19	−28 58 51.70
ZONE 113. APRIL 24. K. BELT, −28° 48′. D_0=−28° 22′ 30″.																			
1	9	. .	. .	. .	35.3	. .	. .	. .	14 46 35.14	−13.62	0.00	IV.	7	5.57	−31 57.41	−42.36	−3.82	14 46 21.52	−28 55 13.59
2	7	47.8	2.6	16.7	31.1	. .	. .	. .	48 30.81	13.60	+0.01	II.	2	9.12	9 37.29	42.52	1.24	48 17.22	32 51.05
3	9	. .	. .	. .	27.6	. .	. .	. .	58 27.44	13.52	0.00	IV.	7	5.51	31 54.38	43.39	3.81	58 13.92	55 11.58
4	9	. .	. .	41.0	55.0	. .	. .	. .	14 59 54.98	−13.51	0.00	IV.	5	7.44	−23 50.27	−43.51	−2.87	14 59 41.47	−28 47 6.65

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
April 21,	11	f 23.95	l 0.043	+ 0.202	+ 0.050	− 0.121
April 24,	13	f 21.32	l 0.013	+ 0.179	+ 0.119	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1847. h. m.	in.	°	°
Zone 111	April 21, 9 48	29.82	69.2	71.2
Zone 113	April 24, 11 2	30.060	59.5	48.5

REMARKS.

(112) 1. Minutes of transit assumed as 1 instead of 2.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
ZONE 114. APRIL 26. K. BELT, −29° 23′. D_0=−28° 58′ 20″.																			
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	. .	55.4	. .	10 28 26.78	−13.68	−0.01	VI.	8	1.38	−34 45.32	−36.45	−4.14	10 28 13.09	−29 33 45.91
2	10	. .	. .	. .	. .	55.2	. .	. .	30 40.78	13.68	+0.01	V.	3	6.40	13 19.75	37.00	1.67	30 27.11	12 18.42
3	10	. .	. .	25.6	. .	. .	. .	. .	34 40.14	13.67	−0.02	III.	10	4.14	46 4.03	37.93	5.48	34 26.45	45 7.44
4	10	30.2	. .	59.2	. .	. .	. .	. .	42 13.69	13.65	0.01	III.	9	5.58	41 55.56	39.69	5.00	42 0.03	41 0.25
5	9.10	. .	. .	. .	. .	48.3	2.1	. .	42 33.72	13.64	−0.02	VI.	10	5.9	46 31.62	39.74	5.54	42 20.06	45 36.90
6	9	. .	9.6	. .	38.4	. .	. .	. .	45 38.28	13.64	0.00	IV.	5	8.13	24 4.89	40.41	2.88	45 24.64	23 8.18
7	9	. .	. .	. .	23.4	. .	51.7	. .	46 23.20	13.64	+0.01	VI.	4	7.39	18 48.36	40.60	2.27	46 9.57	17 51.24
8	9	. .	. .	44.0	58.5	12.8	. .	. .	47 58.38	13.63	−0.01	VI.	7	8.23	33 10.84	40.92	3.96	47 44.74	32 15.72
9	10	. .	16.3	. .	. .	. .	. .	. .	10 50 45.06	−13.63	0.00	II.	6	8.47	−28 22.95	−41.55	−3.40	10 50 31.43	−29 27 27.90
ZONE 115. MAY 4. K. BELT, −31° 16′. D_0=−30° 54′ 0″.																			
1	9	. .	19.1	33.8	. .	. .	. .	. .	10 52 48.45	−12.39	−0.01	III.	7	6.10	−32 3.92	−10 91	−4.98	10 52 36.05	−31 26 19.81
2	9	. .	. .	. .	. .	. .	. .	50.7	53 6.85	12.39	−0.01	VII.	8	6.44	37 19.35	10.96	4.73	52 54.45	31 35.04
3	10	. .	. .	. .	. .	47.9	. .	. .	54 33.23	12.39	0.00	VII.	5	2.10	21 1.38	11.19	3.45	54 20.84	15 16.02
4	5	. .	. .	5.6	20.3	. .	. .	. .	56 20.04	12.38	+0.01	IV.	3	9.57	14 59.13	11.45	2.63	56 7.67	9 13.21
5	10	. .	. .	. .	23.7	. .	. .	. .	57 23.54	12.38	+0.01	IV.	3	12.00	16 1.15	11.62	2.77	57 11.17	10 15.54
6	10	. .	. .	. .	. .	26.3	40.5	. .	10 58 11.51	12.38	0.00	VI.	6	7.42	27 50.15	11.74	4.39	10 57 59.13	22 6.28
7	9	32.6	47.6	2.4	. .	. .	. .	. .	11 1 16.80	12.37	0.00	IV.	5	4.38	22 16.48	12.21	3.64	11 1 4.43	16 32.33
8	11	. .	. .	2.3	. .	. .	. .	. .	2 16.91	12.36	−0.01	III.	7	5.31	31 44.25	12.36	4.94	2 4.54	26 1.55
9	9	. .	. .	. .	44.6	. .	. .	. .	2 44.44	12.36	0.01	IV.	8	5.11	36 32.91	12.42	5.62	2 32.07	30 50.95
10	5	. .	. .	. .	. .	. .	22.5	37.4	2 53.44	12.36	0.01	VII.	8	10.3	38 59.69	12.45	5.99	2 41.07	33 18.13
11	6	29.6	. .	59.6	. .	. .	. .	. .	5 14.18	12.35	−0.02	IV.	9	7.52	42 53.10	12.79	6.53	5 1.81	37 12.42
12	10	. .	1.8	. .	. .	. .	. .	. .	8 30.89	12.34	+0.02	IV.	2	3.34	6 46.91	13.28	1.50	8 18.57	1 1.69
13	9	. .	. .	. .	. .	11.7	. .	40.8	8 57.04	12.34	−0.01	VII.	9	0.5	38 57.15	13.34	5.98	8 44.69	31 33 16.47
14	5	. .	. .	. .	. .	19.5	. .	. .	11 4.75	12.34	+0.02	V.	1	3.20	1 40.79	13.66	0.81	10 52.43	30 55 55.26
15	7	. .	. .	. .	21.7	. .	50.6	. .	12 21.45	12.33	−0.02	IV.	10	5.59	46 57.02	13.83	7.10	12 9.10	31 41 17.95
16	6	. .	. .	. .	. .	40.7	. .	10.3	13 26.04	12.33	0.00	VII.	5	5.23	22 38.68	13.99	3.66	13 13.71	16 56.33
17	9	. .	. .	. .	. .	. .	24.6	. .	15 55.38	12.32	−0.02	VI.	9	6.34	42 13.57	14.33	6.42	15 43.04	36 34.32
18	8	. .	. .	37.6	51.9	. .	. .	. .	17 51.85	12.32	+0.01	IV.	3	12.31	16 16.78	14.61	2.81	17 39.54	10 34.20
19	8	47.6	2.6	. .	. .	. .	. .	. .	20 31.83	12.31	0.00	IV.	5	10.19	25 8.43	14.98	4.00	20 19.52	19 27.41
20	7	. .	. .	. .	20.5	35.4	. .	. .	21 20.51	12.30	+0.02	IV.	2	5.15	7 37.83	15.08	1.63	21 8.23	1 54.54
21	3.4	. .	. .	36.4	50.3	. .	. .	. .	25 50.38	12.29	+0.02	IV.	2	4.51	7 25.73	15.69	1.61	25 38.11	1 43.03
22	9	. .	. .	. .	. .	50.9	. .	. .	27 36.32	12.28	−0.02	VII.	9	7.23	42 38.00	15.93	6.47	27 24.02	37 0.40
23	9	. .	. .	5.3	. .	. .	. .	. .	29 19.66	12.27	+0.01	III.	4	3.29	16 42.43	16.15	2.87	29 7.40	11 1.45
24	9	. .	. .	. .	. .	57.8	. .	. .	29 43.23	12.27	−0.02	VI.	10	1.28	44 40.15	16.21	6.79	29 30.94	39 3.15
25	4	. .	. .	. .	. .	. .	56.1	. .	34 26.86	12.25	+0.02	VI.	10	3.31	45 42.18	16.80	6.94	34 14.63	40 5.92
26	9	. .	13.4	28.3	. .	. .	. .	. .	36 42.62	12.24	0.01	III.	4	1.58	15 56.54	17.08	2.77	36 30.39	31 10 16.39
27	7	. .	. .	. .	. .	0.2	. .	. .	37 45.45	12.24	+0.02	V.	1	4.41	2 21.64	17.21	0.90	37 33.23	30 56 39.75
28	9	. .	. .	. .	. .	. .	. .	8.3	38 24.38	12.24	−0.01	VII.	7	5.7	31 31.73	17.29	4.91	38 12.13	31 25 53.93
29	9	. .	. .	. .	. .	. .	. .	58.2	39 14.39	12.24	0.02	VII.	9	3.5	40 27.91	17.39	6.20	39 2.13	34 51.50
30	9	. .	. .	8.5	. .	. .	. .	. .	42 23.27	12.23	−0.02	IV.	9	6.39	42 16.30	17.77	6.45	42 11.02	36 40.52
31	11	30.5	. .	. .	. .	. .	. .	. .	47 14.64	12.21	0.00	I.	5	6.17	23 5.93	18.32	3.74	47 2.43	17 27.99
32	8	. .	50.0	. .	19.7	. .	. .	. .	49 19.46	12.20	−0.01	IV.	7	5.18	31 37.74	18.56	4.91	49 7.25	26 1.21
33	9	46.7	. .	15.8	. .	. .	. .	. .	53 30.46	12.19	+0.01	IV.	4	3.51	16 53.57	19.01	2.89	53 18.28	11 15.47
34	9	. .	. .	. .	. .	32.4	. .	. .	54 17.76	12.18	0.00	VI.	6	7.57	27 57.71	19.09	4.42	54 5.58	22 21.22
35	8	. .	. .	. .	4.8	. .	33.8	. .	11 56 4.64	12.18	−0.01	VI.	7	4.8	31 2.24	19.29	4.84	11 55 52.45	25 26.37
36	7	. .	. .	. .	. .	. .	43.5	. .	12 6 14.30	−12.12	−0.01	VI.	8	9.26	−38 41.29	−20.26	−5.94	12 6 2.17	−31 33 7.49

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
April 26,	13	*f* 19.98	*l* 0.028	+ 0.211	+ 0.083	0.000
May 4,	13	*f* 18.74	*l* 0.010	+ 0.210	+ 0.200	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 114	April 26, 9 5	29.798	74.	64.5
Zone 115	May 4, 10 52	29.96	62.0	57.0

REMARKS.

Zone 115. May 4. K. Belt, —31° 16′. D$_0$=—30° 54′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
37	9	. .	50.2	4.9	. .	. .	. .	. .	12 9 19.60	−12.10	−0.01	IV.	8	5.11	−36 32.91	−20.55	−5.62	12 9 7.49	−31 30 59.08
38	10	. .	57.4	. .	. .	. .	. .	. .	14 26.54	12.09	+0.01	IV.	3	4.9	12 3.66	20.97	2.21	14 14.46	6 26.84
39	9	. .	. .	21.0	. .	. .	. .	. .	16 35.66	12.08	−0.01	IV.	8	2.52	35 22.83	21.15	5.47	16 23.57	29 49.45
40	9	. .	. .	21.2	. .	. .	. .	. .	18 35.68	12.07	0.00	IV.	5	9.42	24 49.77	21.32	3.98	18 23.61	19 15.07
41	9	. .	51.7	. .	. .	. .	. .	. .	22 20.92	12.05	+0.01	IV.	4	8.40	19 19.31	21.59	3.21	22 8.88	13 44.11
42	9	. .	36.2	. .	. .	. .	. .	. .	24 5.33	12.04	+0.02	IV.	2	11.43	10 53.48	21.72	2.06	23 53.31	5 17.26
43	5	. .	. .	. .	. .	. .	49.2	. .	24 19.66	12.04	−0.01	VI.	10	7.45	47 50.26	21.74	7.26	24 7.61	42 19.26
44	8	. .	. .	. .	. .	. .	. .	34.5?	24 50.72	12.04	0.01	VII.	9	9.12	43 32.97	21.77	6.64	24 38.67	38 1.38
45	8	. .	. .	. .	. .	. .	49.1	. .	26 19.87	12.03	−0.01	VI.	9	12.9	45 2.47	21.88	6.85	26 7.83	39 31.20
46	9	. .	. .	52.5	. .	. .	. .	. .	29 7.03	12.01	0.00	V.	6	5.1	26 29.12	22.08	4.21	28 55.02	31 20 55.41
47	8	. .	. .	. .	13.2	. .	. .	. .	38 13.04	11.97	+0.01	IV.	1	3.59	2 0.51	22.65	0.85	38 1.08	30 56 24.01
48	9	. .	56.1	. .	25.6	. .	. .	. .	40 25.48	11.95	0.00	V.	8	3.39	35 46.48	22.78	5.52	40 13.53	31 30 14.78
49	10	. .	. .	. .	48.9	. .	. .	. .	43 48.74	11.93	0.00	IV.	4	8.22	19 10.23	22.96	3.20	43 36.81	13 36.39
50	9	. .	. .	24.6	. .	. .	. .	. .	49 39.26	11.90	0.00	IV.	7	11.21	34 40.78	23.27	5.37	49 27.36	29 9.42
51	8	. .	43.4	58.0	. .	. .	. .	. .	52 12.51	11.89	0.00	IV.	4	8.55	19 26.87	23.39	3.24	52 0.62	13 53.50
52	9	. .	. .	. .	. .	. .	59.0	. .	12 52 29.93	11.89	+0.01	VI.	3	5.15	12 36.72	23.39	2.26	12 52 18.05	7 2.37
53	9	. .	. .	. .	16.0	30.9	. .	. .	13 1 16.03	11.82	0.00	IV.	4	7.15	18 36.44	23.78	3.10	13 1 4.21	13 3.32
54	8	. .	. .	. .	. .	25.6	. .	54.5	2 10.70	11.82	0.00	VI.	5	6.23	23 9.21	23.81	3.72	1 58.88	17 36.74
55	6	57.5	11.4	27.2	. .	. .	. .	. .	4 41.14	11.80	0.00	IV.	2	8.31	9 16.67	23.89	1.82	4 29.34	3 42.38
56	6	. .	50.5	5.3	. .	. .	. .	. .	23 19.83	11.69	0.00	IV.	6	6.45	27 21.62	24.40	4.34	23 8.14	21 50.36
57	8	. .	. .	54.7	. .	24.3	. .	. .	24 9.40	11.69	0.00	V.	5	5.4	22 29.54	24.42	3.66	23 57.71	16 57.62
58	7	11.7	26.6	. .	. .	. .	. .	. .	26 55.90	11.67	0.00	III.	7	5.55	31 56.35	24.46	4.98	26 44.29	26 25.79
59	8	. .	. .	14.0	28.6	. .	. .	. .	27 28.60	11.67	0.00	IV.	9	5.29	41 40.99	24.48	6.38	27 16.93	36 11.85
60	8	. .	. .	. .	28.6	42.8	. .	. .	28 28.33	11.66	0.00	V.	9	9.16	43 35.41	24.49	6.66	28 16.67	38 6.56
61	3	2.6	. .	32.4	. .	. .	. .	. .	44 46.71	11.55	0.00	IV.	4	3.15	16 35.42	24.60	2.82	44 35.16	11 2.84
62	7	. .	. .	. .	54.2	. .	22.5	. .	45 53.65	11.54	0.00	VI.	10	7.30	47 42.70	24.59	7.25	45 42.11	42 14.54
63	7	. .	. .	. .	. .	18.2	. .	. .	47 3.56	11.54	0.00	VI.	6	6.14	27 5.78	24.59	4.28	46 52.02	31 21 34.65
64	6	. .	. .	. .	. .	46.4	. .	. .	13 54 31.65	−11.49	0.00	V.	1	6.32	− 3 17.62	−24.55	−0.98	13 54 20.16	−30 57 43.15

Zone 116. May 6. K. Belt, —28° 46′. D$_0$=—28° 24′ 50″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	40.2	. .	. .	. .	. .	11 51 54.69	−10.01	−0.01	III.	10	9.30	−48 33.29	− 3.06	−5.69	11 51 44.67	−29 13 32.0
2	9	12.6	26.8	41.3	. .	. .	. .	. .	12 2 55.44	9.98	0.00	IV.	4	14.15	22 8.21	4.22	2.69	12 2 45.46	28 47 5.1
3	9	. .	. .	. .	13.2	. .	41.3	. .	4 13.01	9.97	+0.01	V.	2	7.38	8 49.89	4.35	1.25	4 3.05	33 45.5
4	9	. .	. .	. .	35.5	. .	. .	. .	5 35.34	9.97	0.00	V.	4	9.27	19 42.95	4.49	2.47	5 25.37	44 39.9
5	8	. .	58.7	13.2	. .	. .	. .	. .	8 27.25	9.96	0.00	IV.	5	4.56	22 25.56	4.77	2.70	8 17.29	47 23.0
6	9	. .	. .	4.4	. .	. .	. .	. .	10 18.48	9.95	0.00	V.	5	4.39	22 16.94	4.96	2.69	10 8.53	28 47 14.6
7	9	. .	. .	. .	10.6	. .	38.3	. .	11 10.12	9.95	−0.01	V.	9	7.14	42 33.89	5.03	4.96	11 0.16	29 7 33.9
8	9	. .	. .	. .	52.8	. .	. .	. .	12 52.64	9.94	+0.01	IV.	1	3.20	1 40.84	5.19	0.45	12 42.71	28 26 36.5
9	8	. .	. .	. .	. .	59.2	. .	. .	13 44.94	9.94	0.00	V.	6	9.1	28 30.14	5.27	3.38	13 35.00	28 53 28.8
10	9	. .	. .	30.6	. .	. .	. .	. .	17 45.07	9.92	−0.01	IV.	10	5.33	46 43.91	5.63	5.46	17 35.14	29 11 45.0
11	9	. .	. .	. .	. .	25.5	. .	. .	18 11.22	9.92	0.00	V.	5	10.26	25 11.91	5.67	3.02	18 1.30	28 50 10.6
12	9	. .	. .	31.9	. .	0.7	14.3	. .	19 46.15	9.91	0.00	VI.	7	6.32	32 14.88	5.82	3.83	19 36.24	57 14.5
13	9	. .	. .	. .	42.0	. .	. .	. .	21 41.84	9.90	+0.01	IV.	3	3.53	11 55.58	5.98	1.59	21 31.85	36 53.2
14	8	. .	. .	. .	. .	. .	. .	48.9	22 5.73	9.90	+0.01	VII.	1	7.59	4 1.11	6.01	0.71	21 55.84	28 28 57.8
15	8	. .	36.8	51.0	. .	. .	. .	48.3	25 5.59	9.88	−0.01	III.	10	8.15	48 5.55	6.26	5.62	24 55.70	29 13 7.4
16	10	. .	. .	. .	. .	44.?	. .	. .	28 29.69	9.97	0.00	VII.	4	11.36	20 47.64	6.54	2.55	28 19.72	28 45 46.7
17	7	54.0	8.3	23.3	37.3	. .	. .	. .	12 31 37.06	− 9.85	0.00	IV.	3	15.15	−17 39.46	− 6.78	−2.20	12.31 27.21	−28 42 38.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
May 6,	13	f 16.51	l 0.026			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°
Zone 116	May 6,	11 51	29.81	62.5	57.5

REMARKS.

(116) 1. Micrometer reading assumed as 9^r.10 instead of 9^r.30.

Zone 116. May 6. K. Belt, −28° 46′. $D_{\circ}=-28° 24' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	8	. .	. .	. .	. .	. .	. .	43.5	12 32 0.58	− 9.85	0.00	VII.	5	9.33	−24 44.81	− 6.81	−2.97	12 31 50.73	−28 49 44.6
19	9	. .	. .	. .	. .	. .	. .	14.3	32 31.35	9.85	0.00	VII.	5	4.?	22 22.11	6.84	2.68	32 21.50	47 21.6
20	9	. .	. .	. .	. .	44.1	. .	. .	36 29.77	9.83	0.00	VI.	3	11.4	15 32.73	7.14	1.95	36 19.94	40 31.8
21	8	. .	. .	. .	. .	44.4	. .	. .	37 30.15	9.83	0.00	VI.	7	7.23	32 40.59	7.22	3.87	37 20.32	57 41.7
22	9	. .	21.8	36.3	. .	. .	. .	. .	39 50.50	9.82	0.00	IV.	7	8.59	33 29.19	7.39	3.99	39 40.68	58 30.6
23	9	. .	. .	28.8	. .	. .	. .	. .	44 42.79	9.80	0.00	IV.	3	11.20	15 40.98	7.70	1.98	44 32.99	28 40 40.7
24	7	. .	. .	. .	. .	36.8	. .	5.2	45 22.59	9.80	−0.01	VII.	10	5.54	46 54.08	7.74	5.50	45 12.78	29 11 57.3
25	9	. .	. .	. .	. .	. .	. .	1.3	46 24.21	9.79	+0.01	VII.	2	10.46	10 24.33	7.81	1.41	46 14.43	28 35 23.6
26	6.7	. .	. .	. .	. .	14.2	28.0	42.6	50 59.82	9.77	−0.01	VII.	9	14.23	46 13.82	8.11	5.41	50 50.04	29 11 17.3
27	6	. .	. .	. .	41.8	. .	. .	. .	54 41.64	9.75	+0.01	IV.	1	4.49	2 25.73	8.32	0.53	54 31.90	28 27 24.6
28	7	. .	. .	. .	24.6	38.8	. .	. .	12 55 24.49	9.75	0.00	IV.	6	4.55	26 26.15	8.36	3.16	12 55 14.74	51 27.7
29	6	. .	54.5	. .	23.0	. .	. .	. .	13 24 22.93	9.58	0.00	IV.	5	4.58	22 26.56	9.60	2.70	13 24 13.35	47 28.9
30	10	. .	. .	. .	. .	. .	. .	5.5	24 22.30	9.58	0.00	VII.	1	2.31	6 14.72	9.60	0.91	24 12.72	31 15.2
31	9	. .	. .	13.4	. .	41.8	. .	. .	27 27.39	9.57	0.00	IV.	3	3.6	11 31.89	9.70	1.46	27 17.82	28 36 33.1
32	7	24.6	39.3	. .	. .	. .	. .	. .	30 7.91	9.55	0.00	III.	8	10.51	39 24.31	9.76	4.68	29 58.36	29 4 28.7
33	5.6	. .	. .	. .	27.8	. .	55.8	. .	30 27.52	9.55	0.00	IV.	5	5.4	22 29.59	9.77	2.70	30 17.97	28 47 32.1
34	9	1.8	16.0	. .	. .	. .	. .	. .	32 44.80	9.53	0.00	III.	7	8.11	33 4.93	9.81	3.90	32 35.27	58 8.6
35	9	. .	4.2	. .	. .	. .	. .	. .	40 32.81	9.49	0.00	III.	6	11.2	29 31.16	9.96	3.52	40 23.32	28 54 34.6
36	9	. .	. .	. .	. .	36.8	50.4	. .	42 22.25	9.48	0.00	VII.	9	7.25	42 39.06	9.97	5.06	42 12.77	29 7 44.1
37	9	. .	. .	. .	39.0	. .	. .	. .	47 38.84	9.44	0.00	IV.	9	9.33	43 44.03	10.03	5.19	47 29.40	8 49.2
38	7	. .	17.6	31.8	. .	. .	. .	. .	49 46.18	9.43	0.00	IV.	7	13.1	35 31.20	10.05	4.20	49 36.75	0 35.4
39	9	. .	. .	42.3	. .	10.8	. .	. .	13 55 56.68	9.39	0.00	IV.	9	13.10	45 33.44	10.06	5.35	13 55 47.29	10 38.9
40	9	. .	20.5	. .	. .	. .	. .	. .	14 2 49.20	9.35	0.00	II.	8	10.44	39 20.65	10.06	4.65	14 2 39.85	29 4 25.4
41	5	48.3	2.6	17.0	. .	. .	. .	. .	6 31.03	9.33	0.00	II.	2	9.15	9 38.66	10.03	1.25	6 21.70	28 34 39.9
42	5.6	36.8	51.5	6.0	. .	. .	. .	. .	15 20.13	9.27	0.00	IV.	7	10.54	34 27.18	9.91	4.10	15 10.86	59 31.2
43	4.5	50.7	5.7	20.0	34.2	. .	. .	. .	19 34.03	9.24	0.00	V.	5	7.44	23 50.22	9.84	2.87	19 24.79	48 52.9
44	8	. .	. .	. .	. .	48.2	. .	. .	20 33.81	9.24	−0.01	V.	1	2.52	1 26.68	9.83	0.36	20 24.56	26 26.9
45	9	. .	. .	. .	. .	. .	27.8	. .	22 59.45	9.22	0.00	VII.	3	6.48	13 23.41	9.77	1.69	21 50.23	28 38 24.9
46	10	. .	. .	. .	48.7	. .	16.8	. .	28 48.44	9.19	0.00	VI.	8	5.15	36 34.75	9.63	4.32	28 39.25	29 1 38.7
47	9	2.6	16.9	31.6	. .	. .	. .	. .	31 45.82	9.17	0.00	IV.	3	8.13	14 6.69	9.54	1.76	31 36.65	28 39 8.0
48	9	20.3	34.9	49.5	. .	. .	. .	. .	33 3.65	9.15	0.00	IV.	8	8.13	38 4.69	9.50	4.51	32 54.50	29 3 8.7
49	10	. .	. .	. .	. .	. .	41.3	. .	33 12.93	9.16	0.00	VI.	4	5.9	17 32.72	9.50	2.14	33 3.77	28 42 34.4
50	9	48.3	. .	. .	. .	. .	. .	. .	46 31.43	9.06	0.00	II.	7	2.34	30 14.87	9.00	3.60	46 22.37	55 17.5
51	5.6	44.2	. .	13.2	27.3	. .	. .	. .	14 48 27.09	− 9.05	−0.01	V.	2	5.48	− 7 54.42	− 8.91	−1.09	14 48 18.03	−28 32 54.4

Zone 117. May 6. K. $D_{\circ}=-28° 24' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	4	. .	. .	. .	. .	. .	. .	15.2	15 53 32.20	− 8.60	−0.01	VII.	4	5.42	−17 49.13	−28.91	−2.19	15 53 23.59	−28 42 40.23
2	8	. .	. .	. .	24.3	38.2	. .	. .	55 23.99	8.58	0.01	VI.	2	1.53	5 55.78	28.69	0.85	55 15.40	30 45.32
3	9	. .	. .	. .	. .	. .	50.1	. .	15 59 21.78	8.55	−0.01	VI.	2	7.55	8 58.32	28.24	1.19	15 59 13.22	33 47.75
4	8	. .	45.5	. .	. .	. .	. .	. .	16 1 14.09	8.54	0.00	II.	6	8.15	28 6.81	28.01	3.35	16 1 5.55	28 52 58.17
5	3.4	. .	. .	38.7	. .	7.2	. .	. .	1 52.99	8.54	+0.01	IV.	8	4.00	35 57.12	27.93	4.26	1 44.46	29 0 49.31
6	7	46.7	1.3	. .	. .	. .	. .	. .	4 29.71	8.52	−0.01	III.	4	0.30	15 12.18	27.60	1.89	4 21.18	28 40 1.67
7	9	. .	52.0	. .	. .	. .	. .	. .	11 20.75	8.47	+0.01	III.	9	10.5	44 0.12	26.73	5.21	11 12.29	29 8 52.06
8	9	. .	. .	. .	26.0	40.1	. .	. .	16 25.86	8.44	+0.01	IV.	8	8.24	38 10.24	26.04	4.50	16 17.43	29 3 0.78
9	8	. .	47.8	2.2	. .	. .	. .	. .	18 16.44	8.42	0.00	IV.	7	5.38	31 47.83	25.79	3.75	18 8.02	28 56 37.37
10	9	. .	59.0	. .	27.6	. .	. .	. .	21 27.60	8.40	+0.01	IV.	9	10.22	44 8.72	25.35	5.22	21 19.21	29 8 59.29
11	9	28.5	. .	57.3	. .	. .	. .	. .	16 23 11.41	− 8.39	0.00	IV.	4	6.16	−18 6.70	−25.10	−2.20	16 23 3.02	−28 42 54.00

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(116) 19. Micrometer reading assumed as $4^r.50$.
(116) 30. Hor. thread assumed as 2 instead of 1.
(116) 45. Minutes assumed as 21 instead of 22.
(117) The time of this zone seems uncertain, and the large stars marked (3.4) and (6) are not found.

ZONE 117. MAY 6. K. $D_0 = -28° 24' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
12	9	. .	. .	. .	9.2	. .	. .	. .	16 26 9.04	− 8.37	+0.01	IV.	10	8.8	−48 2.07	−24.66	−5.70	16 26 0.68	−29 12 52.43
13	6	. .	28.2	42.3	. .	. .	. .	. .	30 56.45	8.34	−0.01	IV.	3	7.3	13 31.39	23.96	1.69	30 48.10	28 38 17.04
14	9	8.4	. .	. .	. .	. .	. .	. .	32 51.46	8.32	0.00	II.	5	9.41	24 49.07	23.66	2.98	32 43.14	49 35.71
15	9	30.4	. .	. .	. .	. .	. .	. .	36 13.45	8.30	0.00	III.	5	6.24	23 9.88	23.15	2.78	36 5.15	47 55.81
16	8	. .	. .	. .	38.9	. .	. .	. .	36 38.74	8.29	0.00	IV.	7	3.22	30 39.25	23.09	3.65	36 30.45	55 25.99
17	8	. .	. .	. .	. .	42.3	. .	. .	37 27.96	8.29	−0.01	VI.	3	6.12	13 5.49	22.96	1.63	37 19.66	37 50.08
18	7	. .	. .	. .	40.2	. .	. .	. .	38 40.04	8.28	−0.01	IV.	4	2.28	16 11.72	22.77	1.98	38 31.75	40 56.47
19	8	. .	30.7	. .	. .	. .	. .	. .	39 59.27	8.27	0.00	II.	6	4.42	26 19.41	22.57	3.15	39 51.00	28 51 5.13
20	9	. .	. .	1.0	. .	. .	. .	. .	42 15.43	8.25	+0.01	IV.	9	10.17	44 6.22	22.22	5.22	42 7.19	29 8 53.66
21	8	44.4	. .	. .	. .	. .	. .	. .	44 27.65	8.24	0.01	II.	9	6.38	42 15.60	21.87	5.01	44 19.42	7 2.48
22	9	. .	. .	36.4	. .	. .	. .	. .	44 50.81	8.24	0.01	IV.	9	8.43	43 18.82	21.81	5.15	44 42.58	8 5.78
23	9	. .	. .	. .	. .	28.0	. .	. .	46 13.77	8.23	0.01	VI.	8	5.52	36 53.40	21.59	4.38	46 5.55	1 39.37
24	9	. .	. .	. .	8.3	. .	. .	. .	49 8.14	8.21	+0.02	IV.	9	12.42	45 19.33	21.13	5.39	48 59.95	29 10 5.85
25	9	. .	. .	. .	9.5	. .	. .	. .	53 9.34	8.18	−0.01	IV.	4	11.3	20 31.41	20.47	2.48	53 1.15	28 45 14.36
26	9	. .	. .	24.6	. .	. .	. .	. .	56 38.57	8.15	−0.01	IV.	3	9.50	14 55.60	19.90	1.84	56 30.41	28 39 37.34
27	9	. .	31.2	. .	. .	. .	. .	. .	16 58 59.96	8.14	+0.02	III.	9	11.17	44 36.42	19.51	5.35	16 58 51.84	29 9 21.28
28	10	. .	53.4	. .	. .	. .	. .	. .	17 8 21.91	8.07	−0.01	IV.	4	12.29	21 14.77	17.95	2.58	17 8 13.83	28 45 55.30
29	7	. .	. .	. .	5.5	. .	. .	. .	11 5.34	8.05	+0.02	IV.	10	7.13	47 34.33	17.48	5.66	10 57.31	29 12 17.47
30	9	. .	. .	. .	. .	. .	. .	53.2	11 10.51	8.05	+0.02	VII.	9	7.44	42 48.65	17.46	5.09	11 2.48	29 7 31.20
31	9	. .	. .	49.8	. .	. .	. .	. .	15 3.62	8.03	−0.02	III.	1	11.25	5 45.35	16.67	0.80	14 55.57	28 30 22.82
32	8	. .	27.7	. .	. .	. .	. .	. .	17 56.13	8.01	−0.01	III.	3	6.45	13 22.27	16.30	1.67	17 48.11	38 0.24
33	8	. .	37.3	. .	. .	. .	. .	. .	19 5.92	8.00	+0.01	III.	7	3.55	30 55.84	16.10	3.69	18 57.93	55 35.63
34	9	. .	. .	. .	. .	28.2	. .	. .	19 13.96	8.00	+0.01	VI.	8	2.21	35 7.00	16.07	4.18	19 5.97	59 47.25
35	8	. .	. .	. .	45.0	. .	. .	. .	22 44.84	7.98	−0.01	IV.	4	6.26	18 11.74	15.45	2.22	22 36.85	28 42 49.41
36	9	. .	. .	17.0	. .	. .	. .	. .	17 24 31.40	− 7.97	+0.02	IV.	9	6.11	−42 2.17	−15.14	−5.01	17 24 23.45	−29 6 42.32

ZONE 118. MAY 18. K. BELT, −28° 8′. $D_0 = -27° 46' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	27.2	41.6	55.5	. .	. .	13 41 41.38	− 4.02	0.00	V.	7	8.3	−33 0.90	−40.20	−3.86	13 41 37.36	−28 19 54.96
2	9	. .	. .	. .	. .	. .	31.8	. .	45 3.55	4.00	0.00	VI.	6	10.47	29 23.47	40.24	3.46	45 59.55	16 17.17
3	8	. .	. .	. .	. .	. .	. .	32.2	45 49.41	4.00	0.00	VII.	3	6.25	13 11.82	40.25	1.75	45 45.41	0 3.82
4	9	. .	. .	6.2	. .	34.6	. .	. .	49 20.40	3.97	0.00	V.	7	7.17	32 37.70	40.30	3.83	49 16.43	19 31.83
5	10	. .	56.8	. .	. .	. .	. .	. .	52 25.29	3.96	0.00	II.	8	2.31	35 12.06	40.31	4.10	52 21.33	22 6.47
6	8	. .	26.5	40.8	. .	. .	. .	. .	55 54.97	3.94	0.00	IV.	7	8.55	33 27.17	40.32	3.92	55 51.03	20 21.41
7	9	. .	. .	. .	. .	33.5	. .	1.7	56 19.28	3.94	0.00	VII.	8	7.15	37 35.03	40.32	4.38	56 15.34	24 29.73
8	9	. .	. .	12.9	. .	41.6	. .	. .	13 58 27.33	3.93	0.00	V.	9	4.31	41 11.70	40.33	4.75	13 58 23.40	28 6.78
9	8	19.3	33.4	47.9	. .	. .	. .	. .	14 3 1.86	3.90	0.00	II.	4	6.2	17 59.46	40.33	2.25	14 2 57.96	4 52.04
10	9	. .	. .	. .	. .	43.5	. .	. .	3 29.30	3.90	0.00	V.	5	8.9	24 2.83	40.33	2.89	3 25.40	10 56.05
11	6.7	. .	. .	. .	. .	39.0	. .	. .	6 24.89	3.89	+0.01	V.	10	7.46	47 50.93	40.32	5.47	6 21.01	34 46.72
12	10	. .	. .	. .	. .	. .	43.0	. .	9 14.71	3.87	0.00	VII.	8	6.37	37 15.88	40.30	4.33	9 10.84	24 10.51
13	9	. .	. .	. .	. .	53.3	. .	21.4	10 39.02	3.87	0.00	VII.	7	11.33	34 46.43	40.30	4.05	10 35.15	21 40.78
14	8	. .	. .	48.3	. .	16.6	. .	. .	13 2.30	3.85	0.00	IV.	3	13.31	16 47.03	40.27	2.11	12 58.45	3 39.41
15	9	. .	. .	17.8	. .	. .	. .	. .	14 31.99	3.85	0.00	IV.	7	10.34	34 17.10	40.25	4.00	14 28.14	21 11.35
16	7	. .	. .	32.8	47.3	. .	. .	. .	16 47.00	3.84	0.00	V.	5	11.29	25 43.67	40.23	3.08	16 43.16	12 36.98
17	7	44.8	59.0	13.6	. .	. .	. .	. .	20 27.72	3.82	0.00	IV.	8	11.8	39 32.93	40.18	4.57	20 23.90	28 26 27.68
18	10	. .	. .	38.3	. .	. .	. .	. .	22 52.13	3.81	0.00	IV.	2	11.0	10 31.80	40.15	1.47	22 48.32	27 57 23.42
19	10	. .	34.5	3.0	. .	. .	. .	. .	28 2.94	3.78	0.00	IV.	8	11.11	39 34.44	40.05	4.57	27 59.16	28 26 29.06
20	9	. .	. .	. .	. .	. .	. .	0.0	14 28 17.25	− 3.78	0.00	VII.	3	14.3	−17 2.75	−40.05	−2.14	14 28 13.47	−28 3 54.94

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h. May 18, 14	s. f 10.97	s. l 0.035	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
Zone 118	1847. h. m. May 18, 13 41	in. 29.59	° 65.5	° 56.1

REMARKS.

(118) 17. Transit over T. III assumed as at $13^s.6$ instead of $18^s.6$.

ZONE 118. MAY 18. K. BELT, −28° 8′. D₀=−27° 46′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9	. .	44.8	. .	14.4	. .	. .	. .	14 33 13.71	− 3.75	0.00	IV.	5	7.4	−23 30.10	−39.93	−2.84	14 33 9.96	−28 10 22.87
22	7	. .	. .	6.7	. .	35.2	. .	. .	48 21.08	3.67	+0.01	IV.	10	4.6	46 0.05	39.47	5.27	48 17.42	32 54.79
23	8	. .	. .	. .	40.3	. .	8.0	. .	49 39.97	3.66	0.00	VI.	4	8.14	19 6.02	39.43	2.36	49 36.31	5 57.81
24	9	. .	. .	. .	. .	. .	. .	54.3	14 58 11.69	3.62	0.00	VII.	6	6.54	27 25.75	39.09	3.27	14 58 8.07	14 18.11
25	9	. .	. .	29.3	. .	57.5	. .	. .	15 5 43.51	3.58	+0.01	V.	9	9.34	43 44.49	38.75	5.01	15 5 39.94	30 38.25
26	9	. .	51.3	. .	20.2	. .	. .	. .	10 19.86	3.55	+0.01	V.	8	9.1	38 28.84	38.53	4.46	10 16.32	25 21.83
27	9	13.7	28.0	42.3	. .	. .	. .	. .	19 56.35	3.49	0.00	IV.	7	9.7	33 33.22	38.01	3.92	19 52.86	20 25.15
28	10	. .	. .	. .	. .	39.3	. .	. .	20 25.09	3.49	0.00	V.	7	7.3	32 30.64	37.99	3.81	20 21.60	28 19 22.44
29	9	. .	. .	. .	. .	56.8	10.7	. .	22 42.54	3.48	−0.01	VI.	2	3.10	6 30.08	37.85	1.05	22 39.05	27 53 18.98
30	9	. .	. .	56.8	. .	24.9	. .	. .	26 10.78	3.46	−0.01	V.	2	12.4	11 4.02	37.64	1.52	26 7.31	27 57 53.18
31	8	. .	. .	. .	. .	22.0	35.8	. .	27 7.68	3.45	+0.01	VI.	9	7.48	42 50.90	37.58	4.95	27 4.24	28 29 43.43
32	10	32.3	. .	0.8	. .	. .	. .	. .	39 15.02	3.39	0.00	VI.	7	6.57	32 27.49	36.81	3.81	39 11.63	19 18.11
33	9	. .	49.2	. .	18.1	. .	. .	. .	15 55 17.74	− 3.29	+0.01	IV.	9	10.4	−43 59.67	−35.68	−5.08	15 55 14.46	−28 30 50.43

ZONE 119. MAY 28. K. BELT, −30° 38′. D₀=−30° 15′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	. .	4.9	13 40 21.13	+ 5.78	0.00	VII.	4	12.2	−21 0.71	−47.81	−3.49	13 40 26.91	−30 37 32.01
2	8	. .	. .	. .	. .	15.6	. .	. .	42 0.98	5.79	0.00	VI.	2	11.58	11 0.84	47.79	2.22	42 6.77	27 30.85
3	9	. .	. .	. .	. .	. .	. .	56.5	42 12.64	5.79	0.00	VII.	2	15.0	12.32.35	47.79	2.42	42 18.43	29 2.56
4	8	. .	. .	. .	. .	. .	. .	45.8	43 2.00	5.79	0.00	VII.	3	15.38	17 50.61	47.78	3.08	43 7.79	34 21.47
5	9	. .	. .	. .	. .	. .	55.3	10.8	44 26.78	5.80	0.00	VII.	9	6.31	42 11.81	47.77	6.24	44 32.58	58 45.82
6	7	19.0	33.9	. .	. .	. .	. .	. .	47 2.83	5.81	0.00	III.	4	2.40	16 17.73	47.74	2.89	47 8.64	32 48.36
7	9	. .	. .	. .	. .	26.2	. .	. .	47 11.70	5.81	0.00	VI.	8	3.33	35 43.30	47.74	5.40	47 17.51	52 16.44
8	10	. .	. .	. .	51.3	. .	. .	. .	48 51.14	5.82	0.00	IV.	8	9.00	38 28.39	· 47.72	5.76	48 56.96	55 1.87
9	10	. .	. .	. .	56.8	. .	. .	. .	49 56.64	5.82	0.00	IV.	1	6.58	3 30.77	47.71	1.25	50 2.46	30 19 59.73
10	9	. .	. .	. .	. .	52.9	. .	. .	50 38.43	5.82	0.00	VI.	9	10.22	44 8.54	47.70	6.51	50 44.25	31 0 42.75
11	11	. .	. .	56.8	. .	. .	. .	. .	52 11.11	5.83	0.00	III.	4	9.15	19 36.90	47.67	3.31	52 16.94	30 36 7.88
12	· 8	. .	. .	. .	38.2	. .	. .	. .	52 38.04	5.83	0.00	IV.	4	10.47	20 23.35	47.66	3.38	52 43.87	36 54.39
13	10	. .	. .	. .	. .	. .	3.2	. .	53 34.22	5.84	0.00	VI.	7	5.30	31 43.60	47.65	4.86	53 40.06	48 16.11
14	6	. .	. .	. .	. .	. .	. .	58.5	54 14.98	5.84	0.00	VII.	9	4.32	41 11.81	47.63	6.12	54 20.82	57 45.56
15	8	36.8	51.1	. .	. .	. .	. .	. .	58 20.42	5.86	0.00	IV.	5	8.52	24 24.56	47.56	3.92	58 26.28	40 56.04
16	9	. .	. .	. .	. .	49.3	. .	. .	13 58 34.80	5.86	0.00	V.	8	3.36	35 44.97	47.56	5.40	13 58 40.66	52 17.93
17	9	. .	. .	4.9	. .	. .	. .	. .	14 0 19.00	5.87	−0.01	III.	2	1.25?	5 41.80	47.52	1.54	14 0 24.86	22 10.86
18	10	. .	24.4	. .	. .	. .	. .	. .	1 53.34	5.88	0.00	III.	3	2.8	11 2.59	47.48	2.20	1 59.22	27 32.27
19	7	. .	42.5	. .	. .	. .	. .	. .	4 11.48	5.89	0.00	III.	4	0.40	15 17.22	47.43	2.75	4 17.37	31 47.40
20	8	. .	. .	. .	. .	7.9	. .	. .	5 53.25	5.90	−0.01	V.	1	8.34	4 19.14	47.38	1.36	5 59.13	20 47.88
21	9	. .	. .	. .	. .	. .	. .	43.9	6 0.02	5.90	0.00	VII.	2	11.47	10 55.05	47.38	2.21	6 5.92	27 24.64
22	11	. .	9.2	. .	. .	. .	. .	. .	8 38.25	5.91	0.00	III.	5	4.4	21 59.29	47.31	3.60	8 44.16	38 30.20
23	9	. .	. .	. .	. .	13.5	. .	. .	9 58.85	5.92	−0.01	V.	1	7.15	3 39.29	47.28	1.28	10 4.76	30 20 7.85
24	9	. .	. .	. .	. .	14.4	. .	. .	10 59.93	5.92	+0.01	VI.	9	10.18	44 6.52	47.25	6.51	11 5.86	31 0 40.28
25	9	. .	8.8	. .	. .	. .	. .	. .	12 38.13	5.93	0.01	II.	9	12.53	45 24.67	47.20	6.69	12 44.07	1 58.56
26	8	. .	. .	21.7	. .	. .	. .	. .	13 36.41	5.94	0.01	III.	9	11.55	44 55.58	47.17	6.62	13 42.36	1 29.37
27	10	. .	. .	. .	. .	25.0	. .	. .	14 10.53	5.94	+0.01	V.	9	11.24	44 39.95	47.15	6.58	14 16.48	31 1 13.68
28	10	. .	. .	36.0	. .	. .	. .	. .	15 50.26	5.95	0.00	IV.	3	12.34	16 18.30	47.09	2.88	15 56.21	30 32 48.27
29	8	. .	. .	38.3	. .	. .	. .	. .	16 52.83	5.95	0.00	III.	7	7.13	32 35.68	47.06	4.99	16 58.78	49 7.73
30	10	. .	. .	. .	. .	32.3	. .	. .	19 17.69	5.97	0.00	V.	3	6.46	13 22.78	46.98	2.50	19 23.66	29 52.26
31	9	. .	. .	. .	. .	. .	. .	25.8	19 41.93	5.97	0.00	VII.	2	13.56	12 0.09	46.97	2.35	19 47.90	28 29.41
32	10	. .	. .	. .	. .	8.9	. .	. .	14 22 54.40	+ 5.98	0.00	VI.	8	4.52	−36 23.14	−46.84	−5.49	14 23 0.38	−30 52 55.47

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s.
May 28, 14	*f* 1.32	*l* 0.042			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 119	May 28, 13 40	29.88	75.2	71.7

REMARKS.

(119) 23. Minutes assumed as 8 instead of 9.

ZONE 119. MAY 28. K. BELT, −30° 38′. D_0 = −30° 15′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	9	. .	. .	7.8	. .	. .	. .	. .	14 24 21.83	+ 5.99	−0.01	IV.	1	3.51	− 1 56.47	−46.77	−1.06	14 24 27.81	−30 18 24.30
34	8	. .	10.2	. .	. .	. .	. .	. .	27 39.09	6.01	−0.01	III.	1	12.23	6 14.59	46.63	1.61	27 45.09	30 22 42.83
35	9.10	. .	. .	. .	. .	40.0	. .	. .	30 25.53	6.02	+0.01	VI.	9	10.5	43 59.97	46.51	6.50	30 31.56	31 0 32.98
36	7	. .	. .	. .	. .	4.2	. .	. .	32 49.53	6.03	−0.01	V.	1	1.30	0 45.33	46.40	0.89	32 55.55	30 17 12.62
37	10	. .	. .	. .	. .	. .	. .	3.2	33 19.55	6.04	0.00	VII.	7	2.42	30 18.64	46.37	4.69	33 25.59	46 49.70
38	10	. .	. .	. .	. .	14.9	. .	. .	35 0.38	6.05	0.00	V.	7	5.16	31 36.69	46.28	4.86	35 6.43	30 48 7.83
39	9	. .	. .	7.3	. .	. .	. .	. .	37 22.03	6.06	+0.01	III.	10	4.53	46 23.69	46.17	6.82	37 28.10	31 2 56.68
40	9	. .	47.6	. .	16.7	. .	. .	. .	39 16.65	6.07	0.00	IV.	6	11.25	29 42.82	46.08	4.62	39 22.72	30 46 13.52
41	10	. .	12.3	. .	. .	. .	. .	. .	40 41.43	6.07	0.00	III.	6	7.12	27 35.19	46.00	4.33	40 47.50	44 5.52
42	9	. .	15.6	. .	. .	. .	. .	. .	43 44.52	6.09	−0.01	III.	2	7.41	8 51.40	45.83	1.93	43 50.60	30 25 19.16
43	8	. .	. .	39.0	. .	. .	. .	. .	44 53.70	6.09	0.00	III.	9	10.29	44 12.22	45.77	6.55	44 59.79	31 0 44.54
44	9	34.4	49.3	. .	. .	. .	. .	. .	46 18.42	6.10	0.00	III.	7	5.43	31 50.30	45.69	4.87	46 24.52	30 48 20.86
45	10	. .	. .	. .	. .	. .	49.3	. .	46 20.29	6.10	0.00	VII.	8	9.6	38 30.97	45.69	5.78	46 26.39	55 2.44
46	9	. .	32.8	. .	. .	. .	. .	. .	49 2.02	6.12	0.00	II.	8	4.8	36 0.95	45.53	5.45	49 8.14	52 31.93
47	9	21.1	. .	. .	. .	. .	. .	. .	51 4.91	6.13	0.00	II.	4	9.29	19 43.81	45.41	3.32	51 11.04	36 12.54
48	8	. .	. .	. .	. .	53.5	. .	. .	51 39.01	6.13	0.00	II.	8	12.23	40 10.54	45.38	6.00	52 45.14	56 41.92
49	8	. .	. .	. .	3.4	. .	. .	. .	53 3.24	6.14	0.00	V.	9	8.26	43 10.20	45.29	6.39	53 9.38	59 41.88
50	7	. .	51.4	. .	. .	. .	. .	. .	54 20.55	6.14	0.00	IV.	6	12.54	30 27.68	45.21	4.72	54 26.69	46 57.61
51	9	. .	. .	. .	41.0	55.4	. .	. .	55 40.84	6.15	0.00	VII.	5	9.45	24 50.83	45.12	3.98	55 46.99	41 19.93
52	6	. .	. .	8.2	. .	. .	. .	. .	14 57 22.26	6.16	0.00	IV.	1	6.52	3 27.75	45.02	1.23	14 57 28.42	19 54.00
53	10	. .	. .	20.3	. .	. .	. .	. .	15 2 34.88	6.19	+0.01	IV.	8	4.55	36 24.85	44.67	5.52	15 2 41.08	52 55.04
54	7	. .	. .	. .	. .	. .	24.6	. .	2 55.78	6.19	−0.01	VI.	1	4.30	2 15.95	44.64	1.07	3 1.96	18 41.66
55	4.5	. .	52.0	6.8	. .	. .	. .	. .	5 21.36	6.20	+0.01	III.	9	3.42	40 46.99	44.47	6.07	5 27.57	57 17.53
56	11	. .	. .	. .	. .	14.5	. .	. .	5 59.87	6.21	−0.01	V.	2	6.49	8 25.19	44.35	1.86	6 6.07	24 51.40
57	9	37.6	. .	. .	. .	. .	. .	. .	8 21.63	6.22	+0.01	II.	8	7.26	37 40.79	44.26	5.68	8 27.86	54 10.73
58	7.6	41.0	55.6	. .	. .	. .	. .	. .	9 24.75	6.23	0.00	III.	5	5.49	22 52.23	44.19	3.72	9 30.98	39 20.14
59	10	. .	. .	. .	44.4	. .	. .	. .	12 44.24	6.24	+0.01	IV.	9	8.2	42 58.15	43.93	6.39	12 50.49	59 28.45
60	7	. .	38.3	53.1	. .	. .	. .	. .	17 7.53	6.27	0.00	III.	7	3.35	30 45.76	43.59	4.75	17 13.80	47 14.10
61	6	41.0	55.7	. .	. .	. .	. .	. .	19 25.02	6.28	+0.01	III.	9	3.11	40 31.35	43.41	6.06	19 31.31	57 0.82
62	10	. .	. .	. .	. .	. .	52.0	. .	19 23.04	6.28	0.00	VI.	7	1.42	29 48.63	43.41	4.64	19 29.32	46 16.68
63	9	. .	30.2	. .	59.6	. .	. .	. .	22 59.34	6.29	0.00	IV.	5	2.33	21 13.45	43.11	3.49	23 5.63	37 40.05
64	9	. .	5.9	20.6	. .	. .	. .	. .	24 34.85	6.30	−0.01	III.	3	7.59	13 59.58	42.99	2.56	24 41.14	30 25.13
65	8	. .	. .	. .	23.6	. .	. .	. .	53 23.44	6.46	−0.01	IV.	3	9.21	14 40.97	40.29	2.65	53 29.89	30 31 3.91
66	9	. .	11.3	. .	. .	. .	. .	. .	55 40.64	6.47	+0.02	III.	10	4.5	45 59.49	40.05	6.80	55 47.13	31 2 26.34
67	8	. .	. .	. .	. .	6.3	. .	. .	55 51.84	6.47	0.02	VII.	10	4.10	46 1.61	40.03	6.80	55 58.33	31 2 28.44
68	10	. .	. .	. .	. .	10.6	. .	. .	56 56.11	6.47	+0.01	VI	9	0.50	·39 20.11	39.91	5.92	57 2.59	30 55 45.94
69	9	. .	. .	. .	. .	35.3	. .	. .	58 20.64	6.48	−0.02	V.	1	3.57	1 59.45	39.76	1.02	15 58 27.10	18 20.23
70	7	. .	26.8	41.5	. .	. .	. .	. .	59 55.85	6.49	0.00	IV.	5	4.58	22 26.56	39.61	3.66	16 0 2.34	38 49.83
71	10	. .	. .	. .	. .	. .	. .	4.8	15 59 21.20	6.49	+0.01	VII.	8	0.3	33 57.16	39.66	5.20	15 59 27.70	50 22.02
72	9	. .	. .	. .	. .	. .	. .	37.6	16 1 53.64	6.50	−0.02	VII.	1	8.18	4 10.66	39.38	1.30	16 2 0.12	20 31.34
73	9	. .	. .	. .	. .	. .	. .	41.7	2 57.90	6.51	0.01	VII.	4	6.51	18 23.89	39.15	3.14	3 4.40	34 46.18
74	9	. .	43.8	. .	. .	. .	. .	. .	7 12.74	6.53	−0.01	III.	3	7.35	13 47.48	38.78	2.52	7 19.26	30 8.78
75	10	. .	. .	48.6	. .	. .	. .	. .	9 3.06	6.54	0.00	IV.	6	9.31	28 45.32	38.58	4.50	9 9.60	45 8.40
76	10	. .	. .	. .	. .	. .	50.4	. .	9 21.50	6.55	−0.01	VI.	4	7.29	18 43.30	38.54	3.18	9 28.04	35 5.02
77	7	. .	. .	. .	. .	. .	. .	40.8	10 57.03	6.55	0.00	VII.	4	11.17	20 38.02	38.36	3.42	11 3.58	36 59.80
78	8	. .	. .	31.2	. .	. .	. .	. .	12 45.79	6.56	+0.01	IV.	8	6.7	37 1.16	38.15	5.59	12 52.36	53 24.90
79	8	. .	. .	. .	. .	6.3	. .	. .	12 51.78	6.56	0.01	VI.	7	7.58	32 58.22	38.14	5.07	12 58.35	30 49 21 43
80	7	. .	58.3	. .	. .	. .	. .	. .	15 27.66	6.58	0.02	III.	10	7.43	47 49.41	37.83	7.04	15 34.26	31 4 14.28
81	8	. .	54.9	. .	. .	. .	. .	. .	16 16 24.13	+ 6.58	+0.01	III.	8	5.7	−36 30.85	−37.72	−5.53	16 16 30.72	−30 52 54.10

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(119) 48. Minutes assumed as 52 instead of 51.

ZONE 119. MAY 28. K. BELT, −30° 38′. D₀=−30° 15′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
82	10	. .	. .	59.0	. .	. .	. .	. .	16 17 13.59	+ 6.59	+0.01	IV.	8	5.40	−36 47.54	−37.62	−5.56	16 17 20.19	−30 53 10.72
83	9	. .	16.0	. .	. .	. .	. .	. .	18 45.16	6.59	0.00	III.	7	3.20	30 38.19	37.52	4.74	18 51.75	47 0.45
84	10	. .	. .	6.5	. .	. .	. .	. .	20 20.88	6.60	0.00	III.	5	8.45	24 20.98	37.25	3.92	20 27.48	40 42.15
85	9	. .	32.8	. .	2.3	. .	. .	. .	24 2.22	6.62	+0.01	III.	9	5.7	41 29.85	36.78	6.19	24 8.85	57 52.82
86	9	. .	. .	. .	. .	46.8	. .	. .	24 32.32	6.62	+0.01	V.	9	4.53	41 22.79	36.72	6.18	24 38.95	57 55.69
87	10	. .	13.5	. .	. .	. .	. .	. .	26 42.65	6.63	0.00	II.	7	2.5	30 0.23	36.45	4.66	26 49.28	30 46 21.34
88	11	. .	. .	. .	2.3	. .	. .	. .	29 2.14	6.65	+0.02	VI.	10	3.23	45 38.15	36.15	6.75	29 8.81	31 2 1.05
89	9	21.3	. .	. .	. .	. .	. .	. .	31 5.07	6.66	−0.01	II.	4	1.8	15 31.18	35.89	2.76	31 11.72	30 31 49.83
90	9	. .	. .	. .	28.2	. .	. .	. .	33 28.04	6.67	+0.02	IV.	10	5.54	46 54.50	35.58	6.92	33 34.73	31 3 17.00
91	8	. .	. .	. .	. .	21.9	. .	. .	34 52.89	6.67	+0.01	VII.	9	1.53	39 51.62	35.49	5.98	33 59.56	30 56 13.09
92	7	. .	. .	. .	. .	. .	. .	14.6	34 30.91	6.68	0.00	VII.	6	5.48	26 52.42	35.44	4.24	34 37.59	43 12.10
93	6	. .	. .	. .	. .	54.9	. .	24.0	35 40.24	6.68	−0.01	VII.	3	10.12	15 6.25	35.29	2.70	35 46.91	31 24.24
94	8	. .	. .	. .	. .	33.0	. .	. .	37 18.46	6.69	0.00	VI.	6	5.37	26 47.13	35.07	4.22	37 25.15	43 6.42
95	7	. .	. .	29.0	. .	. .	. .	. .	38 43.61	6.70	+0.01	IV.	8	9.53	39 25.26	34.89	5.93	38 50.32	55 46.18
96	10	. .	. .	. .	31.9	. .	. .	. .	39 31.74	6.71	−0.01	IV.	3	8.36	14 18.30	34.78	2.60	39 38.44	30 35.68
97	8	48.3	. .	. .	. .	. .	. .	. .	41 31.98	6.72	−0.01	II.	2	6.24	8 12.43	34.51	1.82	41 38.69	24 28.76
98	9	. .	. .	7.4	. .	. .	. .	. .	42 22.03	6.72	+0.01	IV.	8	11.36	39 47.06	34.40	5.97	42 28.76	56 7.43
99	9	. .	. .	. .	4.6	. .	. .	. .	43 4.44	6.73	−0.01	IV.	2	9.44	9 53.48	34.30	2.04	43 11.16	26 9.82
100	10	. .	57.2	. .	. .	. .	. .	. .	44 26.17	6.73	0.01	III.	3	7.19	13 39.41	34.11	2.53	44 32.89	29 56.05
101	9	. .	. .	. .	. .	1.5	. .	. .	44 46.89	6.73	−0.01	V.	3	3.34	11 45.96	34.07	2.27	44 53.61	28 2.30
102	8	. .	. .	. .	. .	. .	. .	49.1	45 5.42	6.74	0.00	VII.	6	6.45	27 21.17	34.02	1.30	45 12.16	30 43 39.49
103	7	. .	. .	. .	34.4	. .	. .	. .	46 34.24	6.74	+0.02	VI.	10	6.42	47 18.51	33.82	6.97	46 41.00	31 3 39.30
104	9	. .	. .	. .	. .	. .	. .	41.9	47 57.93	6.75	−0.02	VII.	1	7.53	3 58.05	33.63	1.27	47 4.66	30 20 12.95
105	8	. .	. .	39.8	. .	. .	. .	. .	48 54.12	6.75	0.00	IV.	4	10.15	20 7.21	33.50	3.35	49 0.87	36 24 06
106	9	. .	. .	. .	33.6	. .	. .	. .	49 33.44	6.76	+0.02	IV.	9	4.15	41 3.68	33.41	6.15	49 40.22	57 23.24
107	9	7.8	. .	. .	. .	. .	. .	. .	51 51.55	6.77	−0.01	II.	3	9.31	14 45.82	33.08	2.66	51 58.31	31 1.56
108	7	. .	. .	53.2	. .	. .	. .	. .	52 7.46	6.77	0.01	III.	4	3.43	16 49.49	33.05	2.93	52 14.22	33 5.47
109	8	. .	. .	. .	. .	42.0	. .	. .	52 27.38	6.77	−0.01	VI.	2	8.41	9 21.51	33.00	1.94	52 34.14	25 36.45
110	9	. .	. .	. .	. .	. .	35.6	. .	53 6.61	6.78	+0.01	VI.	7	9.54	33 56.72	32.91	5.20	53 13.40	50 14.83
111	11	. .	. .	. .	. .	. .	. .	23.0	53 39.09	6.78	−0.01	VII.	2	7.58	8 59.57	32.83	1.90	53 45.86	25 14.30
112	10	. .	. .	. .	. .	. .	28.3	. .	55 59.28	6.78	+0.01	VII.	9	4.14	41 2.73	32.51	6.15	55 6.07	57 21.39
113	9	2.5	. .	. .	. .	. .	. .	. .	57 46.15	6.80	−0.02	II.	2	1.17	5 37.62	32.26	1.46	57 52.93	21 51.34
114	6	. .	. .	. .	0.2	. .	. .	. .	16 58 0.04	6.80	+0.01	V.	8	4.1	35 57.57	32.22	5.46	16 58 6.85	52 15.25
115	8	39.0	. .	. .	. .	. .	. .	. .	17 0 22.83	6.81	0.00	II.	5	4.18	22 6.19	31.89	3.60	17 0 29.64	38 21.68
116	10	. .	. .	23.8	. .	. .	. .	. .	0 38.29	6.81	+0.01	IV.	7	2.20	30 7.97	31.85	4.67	0 45.11	46 24.49
117	9	42.3	. .	. .	. .	. .	. .	. .	2 26.10	6.82	−0.01	III.	4	7.23	18 40.42	31.59	3.17	2 32.91	34 55.18
118	10	. .	. .	. .	48.3	. .	. .	. .	2 48.14	6.83	+0.01	V.	7	12.0	35 0.40	31.53	5.33	2 54.98	51 17.26
119	9	. .	. .	. .	17.8	. .	. .	. .	17 5 17.64	+ 6.84	+0.01	IV.	7	12.37	−35 19.11	−31.17	−5.37	17 5 24.49	−30 51 35.65

ZONE 120.* MAY 28. K. BELT, −30° 38′. D₀=−30° 33′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	25.8	. .	. .	. .	. .	. .	. .	17 17 9.65	+ 6.91	0.00	II.	5	7.24	−23 39.98	−28.37	−3.83	17 17 16.56	−30 57 12.18
2	7	40.9	55.8	. .	. .	. .	. .	. .	18 24.91	6.91	+0.01	III.	7	3.51	30 53.82	28.19	4.78	18 31.83	31 4 26.79
3	10	. .	. .	. .	. .	48.5	. .	. .	18 33.87	6.91	−0.02	VII.	2	4.48	7 23.77	28.18	1.70	18 40.76	30 40 53.65
4	8	. .	. .	. .	. .	. .	. .	43.8	18 59.96	6.91	−0.01	VII.	3	9.5	14 32.46	28.11	2.62	19 6.86	48 3.19
5	10	. .	. .	56.8	. .	. .	. .	. .	23 11.23	6.94	0.00	IV.	6	4.30	26 13.55	27.54	4.17	23 18.17	59 45.26
6	8	. .	. .	. .	. .	5.0	. .	. .	22 50.45	6.93	0.00	V.	5	10.41	25 19.47	27.59	4.04	22 57.38	58 51.10
7	9	. .	. .	. .	. .	. .	49.5	. .	17 24 20.57	+ 6.94	0.00	VII.	5	7.33	−23 44.27	−27.39	−3.84	17 24 27.51	−30 57 15.50

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

*The stars during the first and last parts of the night's work evidently differ by about 16′ in declination. A jar or change of some kind evidently occurred between 17ʰ 0ᵐ and 17ʰ 18ᵐ, and the new zone is assumed to begin previous to the observation of 17ʰ 17ᵐ.

REMARKS.

(119) 91. Transit over T. VI assumed as recorded over T. V, and minutes as 33.
(119) 95. Micrometer reading assumed as 10ʳ.53 instead of 9ʳ.53.
[Found that the instrument had been moved 20′ by accident at 17ʰ 5ᵐ.—Observer.]

ZONE 120. MAY 28. K. BELT, −30° 38′. D_0=−30° 33′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
8	9	20.8	. .	. .	. .	. .	. .	. .	17 28 4.56	+ 6.96	−0.01	II.	3	10.17	−15 9.02	−26.89	−2.70	17 28 11.51	−30 48 38.61
9	9	. .	23.5	. .	. .	. .	. .	. .	32 52.37	6.98	−0.02	III.	1	9.22	4 43.33	26.22	1.36	32 59.33	30 38 10.91
10	8	32.2	. .	. .	. .	. .	. .	. .	34 16.23	6.99	+0.01	II.	8	8.58	38 27.18	26.03	5.79	34 23.23	31 11 59.00
11	10	. .	. .	. .	. .	. .	32.3	. .	34 3.25	6.99	+0.02	VI.	10	5.21	46 37.65	26.06	6.90	34 10.26	20 10.61
12	9	. .	. .	. .	32.5	. .	. .	. .	35 32.34	7.00	0.00	IV.	6	9.49	28 54.40	25.85	4.52	35 39.34	31 2 24.77
13	9	. .	. .	. .	. .	. .	11.2	. .	35 42.26	7.00	0.00	VI.	5	11.22	25 39.99	25.83	4.09	35 49.26	30 59 9.91
14	9	. .	18.9	33.4	. .	. .	. .	. .	37 48.03	7.01	+0.01	IV.	7	10.17	34 8.52	25.54	5.21	37 55.05	31 7 39.27
15	9	. .	. .	. .	. .	23.8	. .	. .	38 9.21	7.01	−0.01	V.	3	13.23	16 42.94	25.49	2.90	38 16.21	30 50 11.33
16	8	. .	. .	. .	28.2	. .	. .	. .	39 28.04	7.02	+0.01	V.	8	8.51	38 23.80	25.31	5.80	39 35.07	31 11 54.91
17	9	. .	. .	. .	. .	17.4	. .	. .	40 2.80	7.02	−0.01	VI.	3	12.29	16 15.57	25.24	2.84	40 9.81	30 49 43.65
18	8	. .	. .	. .	. .	. .	50.4	. .	40 21.49	7.02	0.01	VI.	4	11.53	20 56.42	25.18	3.46	40 28.50	54 25.66
19	9	. .	. .	. .	. .	. .	32.0	. .	41 3.09	7.03	0.01	VI.	4	11.29	20 44.32	25.09	3.43	41 10.11	54 12.84
20	8	. .	. .	. .	. .	. .	. .	1.1	41 17.34	7.03	−0.01	VII.	4	13.32	21 46.09	25.06	3.55	41 24.36	30 55 14.70
21	6	. .	. .	. .	. .	. .	. .	11.6	42 28.11	7.03	+0.02	VII.	9	9.0	43 26.94	24.89	6.49	42 35.16	31 16 58.32
22	10	. .	. .	. .	. .	. .	. .	0.3	43 16.82	7.04	0.02	VII.	9	10.40	44 17.37	24.78	6.62	43 23.88	17 48.77
23	10	. .	. .	. .	. .	41.3	. .	. .	44 26.81	7.04	+0.01	VI.	8	11.49	39 53.41	24.63	6.02	44 33.86	31 13 24.06
24	10	. .	. .	32.8	. .	. .	. .	. .	45 46.89	7.05	−0.02	III.	1	11.4	5 34.77	24.43	1.44	45 53.92	30 39 0.64
25	9	. .	. .	. .	17.8	. .	. .	. .	46 17.64	7.05	+0.01	IV.	8	11.17	39 37.47	24.36	5.98	46 24.70	31 13 7.81
26	8	. .	15.0	. .	. .	. .	. .	. .	47 44.10	7.06	0.00	III.	5	11.40	25 49.22	24.17	4.11	47 51.16	30 59 17.50
27	9	. .	27.5	. .	. .	. .	. .	. .	48 56.69	7.06	+0.01	III.	7	8.16	33 7.46	24.00	5.09	49 3.76	31 6 36.55
28	9	. .	. .	. .	0.3	. .	. .	. .	49 0.14	7.07	−0.01	VI.	3	2.29	11 13.03	23.99	2.18	49 7.20	30 44 39.20
29	9	. .	. .	33.5	. .	. .	. .	. .	50 48.00	7.07	+0.01	III.	7	4.22	31 9.46	23.74	4.82	50 55.08	31 4 38.02
30	10	. .	. .	. .	25.6	. .	. .	. .	51 25.44	7.08	0.00	IV.	5	8.56	24 26.58	23.65	3.93	51 32.52	30 57 54.16
31	9	14.4	. .	. .	. .	. .	. .	. .	52 58.26	7.08	0.00	III.	5	8.33	24 14.93	23.43	3.91	53 5.34	57 42.27
32	10	. .	. .	. .	11.0	. .	. .	. .	53 10.84	7.09	0.00	IV.	5	8.26	24 11.45	23.40	3.91	53 17.93	57 38.76
33	10	. .	. .	. .	. .	. .	48.0	. .	53 19.12	7.09	−0.01	VI.	3	6.22	13 10.52	23.39	2.42	53 26.20	30 46 36.33
34	10	. .	. .	. .	30.8	. .	. .	. .	55 30.64	7.10	0.00	IV.	6	11.40	29 50.37	23.08	4.64	55 37.74	31 3 18.09
35	9	. .	. .	. .	20.0	. .	. .	. .	56 19.84	7.10	+0.02	IV.	8	14.41	41 20.32	22.97	6.19	56 26.96	31 14 49.48
36	10	. .	. .	. .	5.0	. .	. .	. .	57 4.84	7.11	−0.02	V.	2	11.41	10 52.42	22.86	2.12	57 11.93	30 44 17.40
37	8	. .	45.6	. .	. .	. .	. .	. .	58 14.75	7.11	0.00	III.	6	6.48	27 23.08	22.70	4.31	58 21.86	31 0 50.09
38	9	. .	. .	. .	31.0	. .	. .	. .	58 30.84	7.11	0.00	V.	6	7.26	27 42.24	22.66	4.35	58 37.95	1 9.25
39	9	. .	. .	. .	. .	24.8	. .	. .	17 59 10.30	7.12	+0.01	VI.	8	6.13	37 3.98	22.56	5.62	17 59 17.43	31 10 32.16
40	5	. .	. .	. .	19.1	33.7	. .	. .	18 0 19.02	7.12	−0.01	VI.	3	2.52	11 24.63	22.41	1.21	18 0 26.13	30 44 49.25
41	9	. .	. .	. .	2.3	. .	. .	. .	3 2.14	7.13	0.00	IV.	5	10.22	25 9.94	22.02	4.02	3 9.27	30 58 35.98
42	8	37.8	52.6	. .	. .	. .	. .	. .	6 21.85	7.15	+0.01	III.	8	9.11	38 33.88	21.53	5.81	6 29.01	31 12 1.22
43	8	. .	. .	. .	29.1	43.3	. .	. .	6 28.89	7.15	0.02	V.	10	8.47	48 21.69	21.52	7.15	6 36.06	21 50.36
44	8	. .	. .	. .	26.8	. .	. .	. .	7 26.64	7.15	+0.02	IV.	10	6.24	47 9.63	21.39	6.99	7 33.81	31 20 38.01
45	10	. .	. .	. .	. .	12.6	. .	. .	7 57.95	7.15	−0.02	V.	1	7.3	3 33.24	21.31	1.18	8 5.08	30 36 55.73
46	10	. .	. .	. .	. .	50.8	. .	. .	8 36.19	7.15	−0.01	VI.	3	4.35	12 16.57	21.22	2.31	8 43.33	30 45 40.10
47	9	. .	7.7	. .	. .	. .	. .	. .	10 37.04	7.16	+0.02	II.	10	10.11	49 3.89	20.93	7.26	10 44.22	31 22 32.08
48	6.7	44.8	59.3	. .	. .	. .	. .	. .	11 28.59	7.17	0.00	III.	6	5.16	26 36.69	20.80	4.20	11 35.76	31 0 1.69
49	10	. .	. .	. .	. .	. .	50.3	. .	11 21.45	7.17	−0.02	VII.	2	7.19	8 39.91	20.81	1.84	11 28.60	30 42 2.57
50	9	36.5	. .	. .	. .	. .	. .	. .	14 20.58	7.18	+0.02	II.	9	7.57	42 55.42	20.39	6.44	14 27.78	31 16 22.25
51	8	. .	. .	23.9	. .	. .	. .	. .	14 38.09	7.18	−0.01	IV.	3	4.28	12 13.23	20.36	2.30	14 45.26	30 45 35.89
52	5	. .	. .	2.1	. .	31.0	. .	. .	15 16.33	7.19	−0.02	V.	3	2.35	16 15.21	20.26	2.85	15 23.50	30 49 38.32
53	10	. .	. .	. .	. .	. .	. .	12.4	15 28.71	7.19	0.00	VII.	6	5.40	26 48.39	20.23	4.22	15 35.90	31 0 12.84
54	8	53.2	. .	. .	. .	. .	. .	. .	18 37.25	7.20	+0.02	II.	8	11.8	39 32.73	19.78	5.97	18 44.47	12 58.48
55	9	48.2	. .	. .	. .	. .	. .	. .	20 32.14	7.21	0.00	II.	6	11.41	29 50.67	19.51	4.64	20 39.35	31 3 14.82
56	9	. .	. .	33.6	. .	. .	. .	. .	18 20 47.94	+ 7.21	0.00	III.	4	13.30	−21 45.48	−19.46	−3.56	18 20 55.15	−30 55 8.50

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(120) 52. Hor. thread assumed as 4 instead of 5.

Zone 120. May 28. K. Belt, −30° 38′. D$_{\circ}$=−30° 33′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
57	10	. .	. .	40.6	. .	. .	. .	. .	18 21 55.04	+ 7.22	0.00	IV.	6	5.59	−26 58.42	−19.30	−4.26	18 22 2.26	−31 0 21.98
58	9	. .	. .	. .	28.5	. .	. .	. .	22 28.34	7.22	+0.02	IV.	9	3.9	40 30.40	19.21	6.10	22 35.58	31 13 55.71
59	9	. .	. .	. .	. .	. .	. .	52.8	25 8.99	7.23	−0.01	VII.	4	4.17	17 6.24	18.84	2.93	25 16.21	30 50 28.01
60	8	55.7	. .	. .	. .	. .	. .	. .	27 39.51	7.24	−0.01	II.	4	9.51	19 54.90	18.46	3.30	27 46.74	53 16.66
61	9	. .	. .	17.3	. .	. .	. .	. .	28 31.71	7.24	0.00	IV.	5	11.58	25 58.34	18.34	4.13	28 38.95	59 20.81
62	7	. .	. .	. .	. .	21.8	. .	. .	29 7.16	7.25	−0.02	VI.	1	10.24	5 14.45	18.25	1.39	29 14.39	30 38 34.09
63	10	13.9	. .	. .	. .	. .	. .	. .	30 57.84	7.25	0.00	II.	6	11.14	29 37.06	17.97	4.62	31 5.09	31 2 59.65
64	8	. .	. .	1.7	. .	. .	. .	. .	31 15.80	7.26	−0.02	IV.	1	12.18	6 12.12	17.93	1.51	31 23.04	30 39 31.56
65	9	. .	. .	. .	59.1	. .	. .	. .	31 58.94	7.26	+0.02	IV.	9	11.39	44 47.57	17.81	6.69	32 6.22	31 18 12.07
66	9	. .	. .	. .	. .	. .	58.2	. .	32 29.32	7.26	−0.02	VII.	3	5.1	12 29.42	17.75	2.33	32 36.56	30 45 49.50
67	8	47.8	. .	. .	. .	. .	. .	. .	37 31.71	7.29	0.00	II.	6	7.10	27 34.02	17.02	4.33	37 39.00	31 0 55.37
68	8	. .	. .	0.3	. .	. .	. .	. .	39 14.52	7.30	−0.01	III.	3	8.1	14 0.59	16.78	2.52	39 21.81	30 47 19.89
69	8	. .	. .	. .	. .	. .	52.6	. .	39 37.96	7.30	−0.02	V.	1	9.21	4 42.82	16.75	1.32	39 45.24	30 38 0.89
70	8	. .	. .	. .	. .	57.2	. .	. .	40 42.69	7.30	+0.01	V.	7	10.49	34 24.61	16.56	5.28	40 50.00	31 7 46.45
71	9	. .	. .	. .	. .	. .	42.8	. .	41 13.86	7.30	0.00	VI.	5	9.2	24 29.40	16.48	3.94	41 21.16	30 57 49.82
72	8	. .	. .	. .	39.8	. .	. .	. .	42 39.64	7.31	+0.01	VI.	8	4.34	36 14.07	16.26	5.52	42 46.96	31 9 35.85
73	6.7	. .	. .	. .	. .	. .	25.8	. .	42 56.88	7.31	0.00	VI.	5	2.19	21 6.19	16.24	3.49	43 4.19	30 54 25.92
74	9	. .	24.3	. .	. .	. .	. .	. .	44 53.63	7.32	+0.02	II.	10	2.32	45 12.45	15.92	6.74	45 0.97	31 18 35.11
75	9	. .	15.7	. .	. .	. .	. .	. .	46 44.87	7.33	0.01	III.	7	5.21	31 39.20	15.68	4.90	46 52.21	4 59.78
76	10	3.0	. .	. .	. .	. .	. .	. .	47 46.96	7.33	+0.01	II.	7	5.41	31 49.14	15.52	4.92	47 54.30	5 9.58
77	8	. .	52.8	. .	. .	. .	. .	. .	48 21.93	7.33	0.00	III.	6	7.25	27 41.73	15.43	4.35	48 29.26	1 1.51
78	7.8	. .	. .	. .	36.5	. .	. .	. .	48 36.34	7.33	+0.02	V.	8	12.41	40 19.77	15.40	6.09	48 43.69	31 13 41.26
79	9	. .	. .	. .	. .	. .	23.9	. .	48 54.96	7.34	0.00	VI.	5	11.53	25 55.62	15.36	4.12	49 2.30	30 59 15.10
80	8	53.5	. .	. .	. .	. .	. .	. .	52 37.50	7.35	+0.01	II.	7	12.46	35 23.45	14.82	5.40	52 44.86	31 8 43.67
81	9	2.6	. .	. .	. .	. .	. .	. .	53 46.46	7.36	0.00	II.	5	8.57	24 26.88	14.65	3.93	53 53.82	30 57 45.46
82	6.5	55.8	10.8	. .	. .	. .	. .	. .	54 39.99	7.36	+0.02	III.	9	6.49	42 21.29	14.51	6.37	54 47.37	31 15 42.17
83	9	. .	. .	. .	0.9	. .	. .	. .	55 0.74	7.36	+0.01	IV.	8	5.15	36 34.93	14.47	5.57	55 8.11	9 54.97
84	9	. .	. .	. .	45.3	. .	. .	. .	57 45.14	7.37	0.00	IV.	6	6.47	27 22.63	14.06	4.31	57 52.51	0 41.00
85	8	. .	. .	32.8	. .	. .	. .	. .	58 47.41	7.38	+0.02	IV.	8	9.25	38 40.99	13.92	5.87	58 54.81	31 12 0.78
88	8	. .	. .	. .	25.8	. .	. .	. .	59 25.64	7.38	−0.01	IV.	4	6.26	18 11.74	13.87	3.08	18 59 33.01	30 51 28.69
87	9	. .	. .	. .	. .	. .	10.8	. .	18 59 56.22	+ 7.38	−0.01	VII.	4	8.45	−19 21.38	−13.75	−3.22	19 0 3.59	−30 52 38.35

Zone 121. June 11. K. Belt, −26° 53′. D$_{\circ}$=−26° 30′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	42.9	57.4	. .	. .	. .	. .	. .	15 12 25.44	+15.46	0.00	III.	7	10.43	−34 21.59	−33.67	−3.88	15 12 40.90	−27 5 19.14
2	9	. .	. .	19.8	. .	47.6	. .	. .	13 33.59	15.46	0.00	V.	5	3.47	21 50.72	33.59	2.70	13 49.05	26 52 47.01
3	10	. .	. .	. .	. .	. .	50.2	. .	14 22.36	15.46	−0.01	VI.	2	4.7	12 5.93	33.52	1.86	14 37.81	43 1.31
4	8	. .	. .	. .	. .	. .	. .	30.1	14 47.81	15.46	−0.01	VII.	4	0.5	14 59.23	33.49	2.09	15 3.26	45 54.81
5	9	. .	25.8	. .	54.4	. .	. .	. .	18 54.02	15.47	0.00	IV.	4	3.44	16 50.05	33.17	2.26	19 9.49	26 47 45.48
6	9	. .	. .	. .	. .	. .	. .	36.2	18 54.17	15.47	+0.01	VII.	8	2.9	35 0.76	33.17	3.93	19 9.65	27 5 57.86
7	9	. .	. .	22.7	. .	. .	. .	. .	25 36.23	15.49	−0.01	IV.	2	5.31	7 45.90	32.63	1.43	25 51.81	26 38 39.96
8	8	. .	47.8	. .	. .	. .	. .	. .	30 15.98	15.50	+0.01	III.	8	8.7	38 1.63	32.23	4.23	30 31.49	27 8 58.09
9	9	. .	42.0	. .	0.2	. .	. .	. .	37 59.97	15.52	−0.01	IV.	1	12.5	6 5.57	31.52	1.27	38 15.48	26 36 58.36
10	9	. .	52.0	6.6	. .	. .	. .	. .	39 20.41	15.53	+0.01	IV.	8	4.12	36 3.17	31.40	4.02	39 35.95	27 6 58.59
11	9	. .	. .	. .	. .	0.0	. .	. .	39 45.98	15.53	0.00	V.	7	1.52	29 53.83	31.36	3.46	40 1.51	27 0 48.65
12	9	. .	53.7	7.8	. .	. .	. .	. .	43 21.51	15.54	−0.01	IV.	2	4 28	7 14.13	31.00	1.36	43 37.04	26 38 6.49
13	9	. .	. .	. .	. .	18.2	. .	. .	44 4.24	15.54	+0.01	V.	9	8.54	43 24.33	30.93	4.74	44 19.79	27 14 20.00
14	7.8	. .	. .	. .	7.0	. .	34.8	. .	15 45 6.88	+15.54	0.00	V.	5	4.58	−22 26.52	−30.82	−2.75	15 45 22.42	−26 53 20.09

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.
June 11,	15	*s* 8.24	*l* 0.002			

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 121	June 11,	9	5	29.718	77.5	71.

REMARKS.

(120) 61. Differs from Transit, 1846, June 3, $14^s.05$ (1 transit T.) in right ascension.
(120) 69. Transit over T. VII assumed as recorded over T. VI.
(121) 3. Micrometer reading assumed as $14^r.7$ instead of $4^r.7$.
(121) 9. Transit over T. II assumed to have been at $32^s.0$ instead of $42^s.0$.

ZONE 121. JUNE 11. K. BELT, −26° 53′. D_0=−26° 30′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	8	6.8	. .	35.3	. .	. .	. .	. .	15 47 49.36	+15.55	+0.01	III.	9	4.12	−41 2.13	−30.55	−4.52	15 48 4.92	−27 11 57.20
16	7	. .	. .	51.2	4.8	. .	. .	. .	50 4.72	15.55	−0.01	IV.	1	8.5	4 4.56	30.32	1.06	50 20.26	26 34 55.94
17	10	. .	. .	40.8	. .	. .	. .	. .	50 54.67	15.55	0.00	IV.	5	8.20	24 8.42	30.23	2.92	51 10.22	55 1.57
18	8	. .	. .	. .	. .	55.5	. .	23.7	51 41.34	15.56	−0.01	VII.	1	12.18	6 11.73	30.15	1.26	51 56.89	37 3.14
19	9	. .	16.3	. .	. .	. .	. .	. .	55 44.17	15.57	0.01	III.	1	10.53	5 29.23	29.70	1.19	55 59.73	36 20.12
20	9	. .	. .	. .	5.2	. .	. .	. .	56 5.05	15.57	0.01	IV.	1	3.32	1 46.90	29.67	0.86	56 20.61	32 37.43
21	10	5.5	. .	34.3	. .	. .	. .	. .	15 57 47 82	15.57	0.01	IV.	3	1.3	10 29.86	29.48	1.65	15 58 3.38	41 20.99
22	7.8	25.2	. .	54.0	. .	. .	. .	. .	16 2 7.57	15.58	0.01	IV.	3	8.50	14 25.35	28.99	2.02	16 2 23.14	45 16.36
23	9	. .	. .	. .	. .	. .	37.8	. .	2 9.93	15.58	−0.01	VI.	3	10.20	15 10.56	28.99	2.08	2 25.50	26 46 1.63
24	10	. .	. .	. .	0.4	. .	. .	. .	4 0.25	15.59	0.00	IV.	6	11.51	29 55.91	28.77	3.46	4 15.84	27 0 48.14
25	8	10.2	. .	38.9	. .	. .	. .	. .	5 52.51	15.59	−0.01	IV.	3	6.47	18 22.33	28.56	2.37	6 8.09	26 49 13.26
26	8	. .	33.8	47.7	. .	. .	. .	. .	15 1.62	15.62	0.01	IV.	4	3.53	16 54.58	27.43	2.24	15 17.23	47 44.25
27	9	. .	14.8	. .	. .	. .	. .	. .	17 42.81	15.62	0.01	IV.	4	9.30	19 44.52	27.10	2.51	17 58.42	50 34.13
28	9	32.8	. .	1.5	. .	. .	. .	. .	25 15.15	15.64	0.01	IV.	3	13.6	16 34.43	26.11	2.21	25 30.78	47 22.75
29	10	23.2	. .	. .	. .	. .	. .	. .	29 5.37	15.65	−0.01	III.	2	10.13	10 8.06	25.59	1.62	29 21.01	40 55.27
30	10	. .	30.8	. .	58.	. .	. .	. .	29 58.37?	15.65	0.00	II.	6	8.9	28 3.81	25.47	3.27	30 14.02	58 52.55
31	8	. .	46.8	. .	14.8	. .	. .	. .	33 14.74	15.66	0.00	IV.	5	5.42	22 48.75	25.03	2.80	33 30.40	26 53 36.58
32	.6	. .	15.4	. .	43.6	. .	. .	. .	34 43.52	15.66	+0.01	IV.	8	10.44	39 20.84	24.83	4.35	34 59.19	27 10 10.02
33	8	. .	. .	. .	. .	. .	43.8	. .	35 15.83	15.67	0.01	VI.	8	10.57	39 27.22	24.76	4.36	35 31.51	10 16.34
34	9	. .	. .	. .	. .	. .	29.4	. .	37 1.42	15.67	+0.01	VI.	9	4.47	41 19.65	24.52	4.55	37 17.10	27 12 8.72
35	8	. .	. .	4.9	. .	. .	. .	. .	42 18.50	15.68	−0.01	III.	2	1.56	5 57.45	23.79	1.22	42 34.17	26 36 42.46
36	9	. .	. .	. .	. .	54.8	. .	. .	42 40.69	15.69	−0.01	V.	2	7.30	8 45.87	23.74	1.49	42 56.37	26 39 31.10
37	9	. .	. .	37.0	. .	. .	. .	. .	44 51.24	15.69	+0.01	IV.	10	8.34	48 15.19	23.43	5.24	45 6.94	27 19 3.86
38	10	. .	. .	. .	24.7	. .	. .	. .	47 24.55	15.69	−0.01	IV.	3	3.31	11 44.49	23.07	1.77	47 40.23	26 42 29.33
39	9	. .	42.7	56.7	. .	. .	. .	. .	49 10.63	15.70	0.00	III.	5	3.12	21 33.07	22.83	2.67	49 26.33	52 18.57
40	9	. .	. .	. .	. .	34.0	. .	. .	49 19.92	15.70	−0.01	V.	4	1.58	15 56.55	22.81	2.15	49 35.61	46 41.51
41	8	. .	. .	. .	. .	16.8	. .	. .	50 48.91	15.70	0.00	V.	6	3.47	25 51.82	22.70	3.07	50 4.61	26 56 37.59
42	8	. .	. .	29.8	. .	57.8	. .	. .	51 43.78	15.71	0.00	V.	7	3.16	30 36.19	22.47	3.52	51 59.49	27 1 22.18
43	7	. .	. .	15.4	29.6	. .	. .	. .	53 29.34	15.71	0.00	IV.	5	3.41	21 47.73	22.22	2.68	53 45.05	26 52 32.63
44	7.8	. .	. .	12.2	. .	40.3	. .	. .	54 26.21	15.71	0.00	VI.	6	9.56	28 57.76	22.09	3.38	54 41.92	26 59 43.23
45	9	. .	. .	. .	. .	. .	44.7	. .	55 16.73	15.72	+0.01	VI.	8	10.36	39 16.64	21.97	4.37	55 32.46	27 10 2.98
46	9	. .	. .	. .	. .	48.9	. .	. .	56 34.81	15.72	−0.01	IV.	3	6.29	13 14.25	21.79	1.88	56 50.52	26 43 57.92
47	9	. .	34.1	. .	. .	. .	. .	. .	16 59 1.99	15.73	0.01	IV.	2	4.36	7 18.18	21.45	1.33	16 59 17.71	38 0.96
48	9	. .	34.0	48.2	. .	. .	. .	. .	17 2 1.99	15.73	0.01	IV.	4	5.38	17 47.53	21.03	2.31	17 1 17.71	48 30.87
49	6	53.2	. .	21.8	. .	. .	. .	. .	2 35.54	15.74	0.01	IV.	4	10.22	20 10.74	20.95	2.54	2 51.27	50 54.23
50	8	. .	. .	. .	. .	. .	28.5	. .	3 0.61	15.74	0.01	VI.	4	8.17	19 7.54	20.89	2.44	3 16.34	49 50.87
51	7	. .	. .	. .	. .	52.4	. .	. .	4 38.33	15.74	−0.01	IV.	4	4.32	17 14.26	20.66	2.36	4 54.06	26 47 57.28
52	9	. .	48.3	2.7	. .	. .	. .	. .	11 16.66	15.75	+0.02	IV.	9	2.44	40 17.80	19.73	4.47	11 32.43	27 11 2.00
53	6	. .	. .	. .	. .	. .	54.3	. .	11 26.32	15.75	+0.02	VI.	10	2.2	44 57.35	19.71	4.93	11 42.09	27 15 41.99
54	9	. .	. .	. .	. .	12.4	. .	. .	14 58.32	15.76	−0.01	VI.	3	12.4	16 3.01	19.21	2.14	15 14.07	26 46 44.36
55	9	. .	. .	. .	6.8	. .	. .	. .	16 6.64	15.77	0.01	VI.	4	10.41	20 20.15	19.05	2.56	16 22.40	51 1.76
56	9	. .	45.8	59.9	. .	. .	. .	. .	17 19 13.58	+15.78	−0.02	III.	1	10.15	− 5 10.07	−18.61	−1.13	17 19 29.34	−26 35 49.81

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(121) 25. Hor. thread assumed as 4 instead of 5.
(121) 41. Minutes assumed as 49 instead of 50.
(121) 48. Minutes assumed as 1 instead of 2.

ZONE 122. JUNE 17. K. BELT, −30° 1'. $D_0 = -29° 38' 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a^2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
1	9	. .	36.8	. .	. .	. .	. .	. .	15 13 5.56	+15.45	−0.01	II.	2	12.36	−11 20.01	−47.57	−2.34	15 13 21.00	29 50 9.92
2	10	. .	. .	. .	. .	. .	49.5	. .	13 20.80	15.45	−0.01	VI.	3	5.46	12 52.37	47.56	2.55	13 36.24	29 51 42.47
3	9	. .	. .	58.3	. .	. .	. .	. .	30 12.96	15.48	+0.01	III.	10	7.33	47 44.37	46.35	6.84	30 28.45	30 26 37.56
4	10	. .	. .	. .	. .	53.9	. .	. .	30 39.49	15.48	+0.01	V.	7	13.21	35 41.23	46.31	5.36	30 54.98	30 14 32.90
5	6.7	. .	. .	. .	. .	38.8	. .	. .	32 24.23	15.48	−0.01	V.	1	1.28	0 44.31	46.18	1.08	32 39.70	29 39 31.57
6	6	. .	. .	. .	. .	8.8	22.8	. .	33 54.19	15.49	0.00	VI.	5	8.43	24 19.82	46.06	3.91	34 9.68	30 3 9.79
7	7	. .	. .	. .	. .	. .	2.8	. .	34 34.00	15.49	+0.01	VI.	7	11.58	34 59.24	46.00	5.24	34 49.50	13 50.48
8	7	. .	. .	. .	. .	. .	. .	56.8	35 13.47	15.49	0.01	VII.	7	9.17	33 37.81	45.95	5.07	35 28.97	12 28.83
9	9	. .	. .	54.2	. .	. .	. .	. .	37 8.84	15.49	+0.01	IV.	10	4.44	45 48.95	44.80	6.66	37 24.34	30 24 40.41
10	9	. .	12.7	. .	. .	. .	. .	. .	39 41.41	15.50	−0.01	IV.	1	11.36	5 50.96	44.59	1.69	39 56.90	29 44 37.24
11	10	. .	39.9	. .	. .	. .	. .	. .	41 8.86	15.50	0.00	IV.	6	12.54	30 27.68	45.47	4.66	41 24.36	30 9 17.81
12	9	. .	. .	. .	58.2	. .	. .	. .	41 58.04	15.50	+0.01	IV.	8	3.46	35 50.06	45.40	5.35	42 13.55	14 40.81
13	8.7	53.7	8.3	. .	. .	. .	. .	. .	43 37.42	15.51	+0.01	II.	9	3.19	40 35.24	45.26	5.94	43 52.94	30 19 26.44
14	9	. .	23.5	. .	. .	. .	. .	. .	44 52.35	15.51	0.00	III.	4	9.7	19 32.87	45.14	3.31	45 7.86	29 58 21.32
15	9	. .	12.3	. .	. .	. .	. .	. .	47 41.38	15.52	+0.01	III.	9	5.47	41 50.02	44.90	6.11	47 56.91	30 20 41.03
16	8	19.8	34.3	. .	. .	. .	. .	. .	49 3.34	15.52	0.00	II.	6	8.48	28 23.44	44.78	4.43	49 18.86	7 12.65
17	9	. .	. .	27.8	. .	. .	. .	. .	49 42.10	15.52	0.00	IV.	5	9.8	24 32.62	44.73	3.93	49 57.62	30 3 21.28
18	9	. .	. .	. .	. .	. .	. .	9.8	53 26.20	15.52	−0.01	VII.	2	13.15	11 39.42	44.28	2.37	53 41.71	29 50 26.17
19	8	16.5	30.9	. .	. .	. .	. .	. .	57 0.01	15.53	0.00	III.	6	12 51	30 26.11	44.04	4.67	57 15.54	30 9 14.82
20	8	. .	. .	. .	10.2	. .	. .	. .	58 10.04	15.53	+0.01	IV.	7	8.40	33 19.61	43.93	5.03	58 25.58	30 12 8.57
21	9	. .	. .	11.0	. .	. .	. .	. .	15 59 25.12	15.53	−0.01	IV.	3	5.4	12 31.39	43.82	2.47	15 59 40.64	29 51 17.68
22	10	. .	15.1	. .	. .	. .	. .	. .	16 0 44.05	15.53	0.00	IV.	6	9.58	28 58.93	43.69	4.50	16 0 59.58	30 7 47.12
23	9	. .	15.1	. .	. .	. .	. .	. .	1 44.18	15.53	+0.01	III.	9	5.24	41 38.42	43.59	6.08	1 59.72	30 20 28.09
24	8.9	17.5	. .	46.6	. .	. .	. .	. .	3 0.89	15.54	−0.01	IV.	2	3.35	6 47.40	43.45	1.79	3 16.42	29 45 32.64
25	7.8	. .	43.0	57.3	. .	. .	. .	. .	4 11.58	15.54	−0.01	IV.	3	1.10	10 33.39	43.33	2.25	4 27.11	29 49 18.97
26	8	38.6	53.2	. .	. .	. .	. .	. .	6 22.28	15.54	+0.01	II.	8	3.7	35 30.19	43.11	5.31	6 37.83	30 14 18.61
27	8	. .	. .	. .	9.8	. .	. .	. .	14 9.64	15.56	−0.01	IV.	2	11.31	10 47.43	42.29	2.27	14 25.19	29 49 31.99
28	9	. .	. .	. .	. .	. .	. .	9.2	14 25.57	15.56	−0.01	VII.	2	8.56	9 28.84	42.27	2.12	14 41.12	29 48 13.23
29	7	51.2	. .	20.8	. .	. .	. .	. .	29 35.04	15.59	0.00	IV.	7	3.55	30 55.89	40.59	4.74	29 50.63	30 9 41.22
30	8	. .	49.8	. .	. .	. .	. .	. .	32 18.81	15.59	+0.01	IV.	8	2.35	35 14.26	40.27	5.28	32 34.41	13 59.81
31	9	. .	. .	. .	. .	. .	50.3	. .	41 21.44	15.61	+0.01	VII.	9	13.42	45 49.14	39.21	6.63	41 37.06	24 34.98
32	7	. .	. .	4.5	18.8	. .	. .	. .	43 18.78	15.62	0.00	IV.	7	5.17	31 37.24	38.98	4.81	43 34.40	10 21.03
33	8	. .	. .	. .	54.8	. .	. .	. .	44 54.64	15.62	0.00	IV.	7	2.45	30 20.60	. .	4.65	45 10.26	
34	5	. .	. .	. .	. .	0.4	14.6	. .	44 45.89	15.62	+0.01	VI.	9	4.54	41 23.15	38.80	6.05	45 1.52	30 20 8.00
35	9	. .	49.8	. .	. .	. .	. .	. .	55 18.55	15.64	−0.01	IV.	2	10.5	10 4.07	37.51	2.17	55 34.18	29 48 43.75
36	8	. .	11.5	. .	40.9	. .	. .	. .	56 40.54	15.64	0.01	IV.	4	5.21	17 38.95	37.33	3.11	56 56.17	56 19.39
37	7	. .	59.7	14.1	. .	. .	. .	. .	58 28.34	15.64	0.01	III.	3	4.25	12 11.67	37.11	2.41	58 43.97	50 51.19
38	8	. .	. .	. .	. .	. .	10.5	. .	58 41.83	15.64	−0.01	VI.	2	6.31	8 15.96	37.08	1.95	58 57.46	29 46 54.99
39	5	. .	. .	. .	. .	. .	. .	40.1?	16 58 56.77	15.64	+0.01	VII.	7	8.27	33 12.61	37.06	5.02	16 59 12.42	30 11 54.69
40	9.10	. .	. .	49.3	. .	. .	. .	. .	17 2 3.78	15.64	0.01	IV.	8	3.39	35 46.53	36.65	5.35	17 1 19.43	14 28.53
41	10.11	. .	. .	. .	. .	43.2	. .	. .	2 28.80	15.64	0.01	V.	9	0.52	39 21.27	36.60	5.80	2 44.45	18 3.67
42	8	39.6	54.4	. .	. .	. .	. .	. .	5 23.45	15.65	+0.02	II.	9	7.34	42 43.83	36.23	6.25	5 39.12	21 26.31
43	9	. .	. .	. .	38.2	. .	. .	. .	5 38.04	15.65	0.00	IV.	6	5.11	26 34.21	36.20	4.20	5 53.69	5 14.61
44	5	. .	. .	. .	. .	15.2	. .	. .	6 0.73	15.65	0.00	V.	5	6.34	23 14.93	36.15	3.77	6 16.38	1 54.85
45	7	. .	. .	. .	3.2	. .	. .	. .	7 3.04	13.65	+0.01	IV.	7	6.3	32 0.44	36.01	4.89	7 18.70	30 10 41.34
46	7	. .	. .	. .	. .	44.7	. .	. .	7 30.20	15.66	0.00	V.	4	1.51	20 52.21	35.96	3.48	7 45.86	29 59 31.65
47	8	. .	. .	. .	. .	48.2	. .	. .	8 33.65	15.66	−0.02	V.	1	7.24	3 43.83	35.82	1.40	8 49.29	29 42 21.05
48	7	32.6	47.6	. .	. .	. .	. .	. .	12 16.54	15.66	+0.02	II.	9	6.16	42 4.50	35.34	6.15	12 32.22	30 20 45.99
49	10.9	. .	. .	. .	33.2	. .	. .	. .	17 12 33.04	+15.67	0.00	IV.	5	8.15	−24 5.90	−35.30	−3.88	17 12 48.71	30 2 45.08

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.
June 17,	15	*s* 8.17	*g* 0.034			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°
Zone 122	June 17,	15 13	29.95	73.5	65.3

REMARKS.

(122) 9. Micrometer reading assumed as $3^r.44$ instead of $4^r.44$.
(122) 29. One of the transit observations erroneous by 5^s, or transit over T. I should be $51^s.2$ instead of $57^s.2$. The latter assumed as most probable.
(122) 40. Minute of transit assumed as 1 instead of 2.
(122) 46. Micrometer thread 5 assumed to have been used instead of 4.

ZONE 122. JUNE 17. K. BELT, 30° 1′. $D_0 = -29° 38′ 0″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	′	″	h. m. s.	° ′ ″
50	9	. .	. .	50.2	. .	. .	. .	. .	17 14 4.15	+15.67	−0.02	IV.	1	3.12	− 1 36.81	−35.10	−1.14	17 14 19.80	−29 40 13.05
51	8	. .	. .	. .	. .	. .	. .	13.6	14 29.92	15.67	0.02	VII.	2	−0.27	4 45.47	35.05	1.49	14 45.57	43 22.01
52	2	. .	. .	16.8	30.8	45.3	. .	. .	17 30.73	15.68	−0.02	IV.	1	9.41	4 52.96	34.66	1.53	17 46.39	29 43 29.15
53	9	. .	. .	. .	. .	. .	35.3	. .	23 6.49	15.69	+0.01	VI.	8	6.7	37 0.96	33.91	5.53	23 22.19	30 15 40.40
54	8	. .	. .	. .	. .	22.6	. .	51.8	24 8.37	15.69	+0.01	VII.	8	10.40	39 18.38	33.78	5.82	24 24.07	30 17 57.98
55	8	. .	6.5	. .	35.0	. .	. .	. .	29 35.06	15.70	−0.01	IV.	3	6.43	13 21.31	33.03	2.55	29 50.75	29 51 56.89
56	10	. .	. .	. .	28.8	. .	. .	. .	30 28.64	15.70	0.00	IV.	6	10.28	29 14.06	32.91	4.53	30 44.34	30 7 51.50
57	8	. .	. .	. .	. .	. .	. .	20.7	33 37.30	15.70	0.00	VII.	6	6.41	27 19.16	32.48	4.30	33 53.00	30 5 55.94
58	8	. .	. .	. .	. .	40.2	. .	. .	35 25.67	15.71	−0.01	VI.	2	6.24	8 12.43	32.23	1.90	35 41.37	29 46 46.55
59	9	49.8	. .	18.6	. .	. .	. .	. .	38 33.30	15.71	−0.01	IV.	8	3.38	35 46.02	31.78	5.36	38 49.02	30 14 23.16
60	10	. .	. .	. .	. .	. .	11.5	. .	38 42.64	15.71	+0.02	VI.	10	5.9	46 31.61	31.77	6.75	38 58.37	25 10.13
61	10	. .	49.9	. .	. .	. .	. .	. .	42 18.84	15.71	0.00	IV.	6	7.32	27 45.32	31.26	4.35	42 34.55	6 20.93
62	9	. .	. .	. .	. .	49.3	. .	. .	42 34.87	15.72	+0.01	V.	7	5.44	31 50.81	31.22	4.87	42 50.60	30 10 26.90
63	9	. .	. .	3.3	. .	. .	. .	. .	45 17.35	15.72	−0.02	IV.	2	6.3	8 2.04	30.84	1.89	45 33.05	29 46 34.77
64	8	. .	. .	. .	. .	. .	4.5	. .	45 35.77	15.72	0.00	VI.	5	1.35	20 44.00	30.79	3.46	45 51.49	29 59 18.25
65	8.7	. .	. .	. .	. .	47.2	. .	. .	46 32.77	15.72	+0.01	V.	7	4.57	31 27.11	30.67	4.82	46 48.50	30 10 2.60
66	8	. .	. .	53.3	. .	. .	. .	. .	48 7.59	15.73	0.00	IV.	5	7.44	23 50.27	30.44	3.85	48 23.32	2 24.56
67	4.5	. .	. .	57.0	11.3	. .	. .	. .	49 11.30	15.73	+0.01	V.	7	12.40	35 20.57	30.28	5.31	49 27.04	13 56.16
68	9	. .	. .	. .	56.0	. .	. .	. .	49 55.84	15.73	+0.01	IV.	8	11.26	39 47.06	30.18	5.88	50 11.58	30 18 23.12
69	8	. .	. .	. .	. .	. .	46.3	. .	50 17.62	15.73	−0.01	VI.	2	11.9	10 36.14	30.13	2.20	50 33.34	29 49 8.47
70	8	. .	. .	. .	. .	. .	. .	19.3	50 35.67	15.73	0.01	VII.	2	9.56	9 59.09	30.08	2.13	50 51.39	48 31.30
71	7.8	0.7	15.4	. .	. .	. .	. .	. .	53 44.17	15.73	−0.01	III.	3	5.42	12 50.50	29.63	2.49	53 59.89	29 51 22.62
72	2.3	. .	. .	39.8	. .	8.6	. .	. .	54 54.34	15.73	+0.02	IV.	10	5.29	46 41.89	29.45	6.78	56 10.09	30 25 18.12
73	8	. .	33.2	. .	. .	. .	. .	. .	17 58 2.07	15.74	0.00	IV.	5	3.49	21 51.77	29.00	3.59	17 59 17.81	30 0 24.36
74	9	. .	. .	. .	11.8	. .	. .	. .	18 1 11.64	15.74	−0.02	IV.	2	5.40	7 50.44	28.53	1.87	18 1 27.36	29 46 20.84
75	9	50.0	. .	. .	. .	. .	. .	. .	18 2 33.59	15.75	0.00	III.	5	8.3	23 59.80	28.37	3.87	18 2 49.34	30 2 32.04
76	8	24.6′	9.2	. .	. .	. .	. .	. .	19 0 38.28	15.82	+0.01	III.	8	4.5	35 59.59	19.31	5.41	19 0 54.11	14 24.31
77	9	. .	. .	. .	55.5	. .	. .	. .	0 55.34	15.82	0.00	IV.	5	8.50	24 23.55	19.26	3.92	1 11.16	30 2 46.73
78	5.6	. .	. .	. .	. .	46.8	. .	16.0	2 32.30	15.82	−0.02	VII.	1	12.9	6 7.14	19.00	1.62	1 48.10	29 44 27.76
79	8	4.8	20.0	. .	. .	. .	. .	. .	4 48.66	15.82	0.00	IV.	5	12.59	26 29.10	18.64	4.19	5 4.48	30 4 51.93
80	8	9.2	23.8	. .	. .	. .	. .	. .	11 52.64	15.82	−0.01	III.	3	8.55	14 27.82	17.52	2.67	12 8.45	29 52 48.01
81	7.8	. .	. .	3.3	17.5	. .	. .	. .	12 17.36	15.82	0.02	IV.	2	9.5	9 33.81	17.46	2.05	12 33.16	47 53.32
82	9	. .	. .	53.6	. .	. .	. .	. .	21 7.58	15.83	0.02	IV.	1	6.0	3 1.53	16.09	1.25	21 23.39	41 18.87
83	8	. .	. .	. .	. .	38.0	52.1	. .	21 23.45	15.83	0.02	VI.	2	9.26	9 44.20	16.04	2.08	21 39.26	48 2.32
84	8	. .	. .	. .	19.2	. .	. .	. .	57 19.04	15.86	−0.01	IV.	2	14.4	12 4.57	10.57	2.33	57 34.89	29 50 17.47
85	7	. .	. .	. .	. .	. .	15.8	30.3	19 57 46.98	15.86	+0.01	VII.	6	13.21	30 40.84	10.50	4.73	19 58 2.85	30 8 56.07
86	9.10	. .	. .	23.5	. .	. .	. .	. .	20 2 37.75	15.86	0.00	III.	5	2.51	21 22.47	9.79	3.52	20 2 53.61	29 59 35.78
87	4.5	. .	. .	0.0	. .	. .	. .	. .	6 14.68	15.86	+0.02	III.	10	10.48	49 22.70	9.27	7.08	6 30.56	30 27 39.05
88	10	. .	. .	. .	4.0	. .	. .	. .	8 3.84	15.86	−0.01	IV.	3	6.2	13 0.64	9.00	2.48	8 19.69	29 51 12.12
89	8	6.8	. .	36.0	. .	. .	. .	. .	9 50.39	15.86	0.00	IV.	6	6.13	27 5.48	8.75	4.27	10 6.25	30 5 18.50
90	8	. .	. .	42.8	. .	. .	. .	. .	10 56.75	15.86	−0.02	IV.	1	3.25	1 43.36	8.59	1.07	11 12.59	29 39 53.02
91	9	. .	. .	. .	. .	29.2	. .	. .	21 14.78	15.87	+0.01	V.	7	8.15	33 6.95	7.12	5.05	21 30.66	30 11 19.12
92	7.8	. .	22.7	7.2	. .	. .	. .	. .	24 21.36	15.87	−0.02	IV.	2	9.33	9 47.93	6.67	2.06	24 37.21	29 47 56.66
93	9	. .	31.3	. .	0.2	. .	. .	. .	31 0.02	15.87	0.02	IV.	1	10.41	5 23.22	5.75	1.50	31 15.87	43 30.47
94	5.6	. .	. .	36.8	51.3	. .	. .	. .	33 51.08	15.87	0.01	IV.	4	7.30	18 44.01	5.37	3.22	34 6.94	56 52.60
95	9	. .	. .	. .	. .	38.0	. .	. .	37 23.50	15.87	−0.01	V.	3	10.50	15 25.81	4.88	2.78	37 39.36	53 33.47
96	7	34.0	. .	3.2	. .	. .	. .	. .	42 17.51	15.87	0.00	IV.	4	13.5	21 32.92	4.21	3.55	42 33.38	29 59 40.68
97	7	. .	. .	. .	. .	. .	. .	59.7	42 16.48	15.87	+0.02	VII.	9	6.19	42 5.77	4.21	6.23	42 32.37	30 20 16.21
98	9	39.9	. .	. .	. .	. .	. .	. .	20 45 23.44	+15.87	−0.01	III.	4	10.40	−20 19.77	− 3.80	−3.39	20 45 39.30	−29 58 26.96

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(122) 51. Hor. thread assumed as 1 instead of 2, and micrometer readings as $9^{r}.27$ instead of $0^{r}.27$.
(122) 72. Minutes assumed as 55 instead of 54.
(122) 73. Minutes assumed as 59 instead of 58.
(122) 76. One of the transit observations, supposed the former, erroneous by 30^{s}.
(122) 78. Minutes assumed as 1 instead of 2.
(122) 92. Transit over. II assumed as $52^{s}.7$ instead of $22^{s}.7$.

ZONE 122. JUNE 17. K. BELT, −30° 1′. $D_\circ = -29° 38' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.	h. m. s.	s.	s.			r.	′ ″	″	″	° ′ ″	h. m. s.
99	10	. .	. .	. .	. .	58.3	. .	. .	20 50 43.84	+15.87	0.00	VI.	5	10.31	−25 14.28	− 3.09	−4.03	20 50 59.71	−30 3 21.40
100	7	. .	. .	. .	. .	. .	11.0	. .	51 42.17	15.87	+0.02	V.	8	12.53	40 25.82	2.96	6.02	51 58.06	30 18 34.80
101	6.7	. .	. .	24.4	. .	. .	. .	. .	53 38.39	15.87	−0.02	V.	1	7.28	3 45.84	2.71	1.30	53 54.24	29 41 49.85
102	9	. .	. .	. .	. .	. .	23.2	. .	54 54.54	15.87	−0.02	VI.	1	11.58	6 1.84	2.54	1.58	55 10.39	29 44 5.96
103	10	. .	11.8	. .	. .	. .	. .	. .	20 57 40.79	15.87	+0.01	III.	7	7.40	32 49.30	2.17	5.01	20 57 56.67	30 10 56.48
104	4.5	4.8	. .	. .	. .	. .	. .	. .	21 0 48.59	+15.87	+0.02	II.	9	5.3	−41 27.68	− 1.77	−6.15	21 1 4.48	−30 19 35.60

ZONE 123. JUNE 21. B. BELT, −30° 1′. $D_\circ = -29° 38' 40''$.

1	8	. .	. .	. .	32.	. .	0.0	. .	15 8 31.55	+16.44	−0.01	VII.	3	12.8	−16 4.73	−33.75	−1.91	15 8 47.98	−29 55 20.39
2	9	. .	. .	. .	. .	11.5	25.5	. .	11 56.64	16.44	+0.01	VII.	7	11.32	34 45.90	33.47	4.21	12 13.09	30 14 3.58
3	10	. .	. .	. .	. .	. .	. .	50.5	14 7.06	16.45	0.00	VII.	5	12.22	26 10.00	33.31	3.14	14 23.51	30 5 26.45
4	10	. .	. .	. .	. .	49.	. .	18.	16 34.49	16.45	−0.01	VII.	3	13.15	16 38.52	33.11	1.98	16 50.93	29 55 53.61
5	10	. .	. .	. .	. .	. .	17.	. .	24 48.19	16.47	+0.01	VII.	8	6.12	37 3.24	32.41	4.49	25 4.67	30 16 20.14
6	8	. .	. .	. .	12.	. .	. .	. .	30 11.84	16.48	−0.01	V.	2	6.41	8 21.15	31.94	0.97	30 28.31	29 47 34.06
7	10	. .	. .	. .	. .	41.	. .	9.	?32 26.14	16.48	+0.01	VII.	7	12.3	35 1.52	31.74	4.23	?32 42.63	30 14 17.49
8	8	. .	. .	. .	. .	48.	2.	. .	34 33.39	16.49	+0.01	VI.	7	11.6	34 33.03	31.54	4.17	34 49.89	13 48.74
9	10	. .	. .	. .	. .	. .	9.5	24.	?40.58	16.	−0.01	VII.	2	0.4	5 0.58	. .	0.59	57.1	
10	7	. .	. .	. .	. .	11.	25.4	. .	?56.59	16.5	+0.01	VII.	8	3.28	35 40.53	. .	4.33	13.1	
11	7	. .	. .	. .	. .	. .	. .	19.	48 35.75	16.53	+0.01	VII.	9	2.32	40 11.31	30.18	4.88	48 52.29	19 26.37
12	10	. .	. .	. .	. .	. .	. .	41.5	46 58.15	16.52	0.00	VII.	7	5.55	31 55.96	30.34	3.87	47 14.67	11 10.17
13	8	. .	. .	. .	. .	55.5	. .	24.5	49 41.09	16.53	0.00	VII.	6	8.21	28 9.58	30.07	3.40	49 57.62	7 23.05
14	8	. .	. .	. .	. .	40.5	. .	9.0	51 25.84	16.53	0.00	VII.	6	10.58	29 28.75	29.89	3.57	51 42.37	8 42.21
15	9	. .	. .	. .	. .	. .	33.5	. .	15 53 4.70	16.54	+0.01	VII.	7	12.34	35 17.16	29.71	4.27	15 53 21.25	14 31.14
16	9	. .	. .	. .	. .	. .	. .	27.	16 0 43.61	16.55	0.00	VII.	6	9.19	28 38.83	28.90	3.46	16 1 0.16	30 7 51.19
17	8	. .	. .	. .	. .	14.	28.4	. .	2 59.60	16.56	−0.01	VII.	2	11.38	10 50.52	28.64	1.28	3 16.15	29 50 0.44
18	8	37.5	52.8	. .	. .	. .	. .	. .	6 21.52	16.56	+0.01	III.	7	12.15	35 7.96	28.27	4.26	6 38.09	30 14 20.49
19	8	28.5	43.	. .	. .	. .	. .	. .	9 12.04	16.57	0.00	III.	6	8.35	28 17.04	27.94	3.41	9 28.61	7 28.39
20	8	. .	. .	. .	. .	. .	51.	5.5	9 22.15	16.57	0.00	VII.	5	8.2	23 58.91	27.93	2.88	9 38.72	30 3 9.72
21	10	. .	. .	. .	. .	. .	3.	17.	11 33.85	16.57	−0.01	VII.	2	10.01	5 2.61	27.68	0.54	11 50.41	29 44 10.83
22	9	. .	. .	. .	. .	23.5	. .	. .	14 9.00	16.58	−0.01	VI.	3	10.42	10 22.53	27.37	1.18	14 25.57	29 49 31.08
23	8	. .	. .	. .	. .	. .	. .	53.5	16 10.08	16.58	0.00	VII.	6	4.54	26 25.21	27.13	3.17	16 26.66	30 5 35.51
24	10	8.	. .	37.5	. .	. .	. .	. .	22 51.54	16.60	−0.01	IV.	3	5.8	12 33.40	26.32	1.46	23 8.13	29 51 41.18
25	.	0.5	15.	. .	. .	. .	. .	. .	25 43.93	16.60	−0.01	IV.	4	5.38	17 47.53	25.96	2.13	26 0.52	29 56 55.62
26	10	50.5	5.	19.3	. .	. .	. .	. .	29 33.95	16.61	0.00	IV.	7	3.5	30 30.68	25.49	3.70	29 50.56	30 9 39.87
27	10	44.4	. .	13.2	. .	. .	. .	. .	34 13.14	16.62	0.00	IV.	4	8.14	19 6.20	24.85	2.26	34 29.76	29 58 13.31
28	9	56.4	11.	. .	. .	. .	. .	. .	38 39.97	16.63	0.00	III.	6	4.51	26 24.08	24.30	3.17	38 56.60	30 5 31.55
29	11	. .	. .	28.	43.	. .	. .	. .	40 42.54	16.63	0.00	V.	4	10.22	20 10.69	24.03	2.40	40 59.17	29 59 17.12
30	8	34.4	49.	. .	. .	. .	. .	. .	43 18.02	16.64	0.00	III.	7	4.33	31 15.01	23.68	3.79	43 34.66	30 10 22.48
31	8	. .	. .	. .	. .	8.	22.	37.	43 53.47	16.64	0.00	VII.	7	2.04	29 59.49	23.60	3.63	44 10.11	9 6.72
32	10	. .	. .	. .	. .	. .	47.5	2.	46 18.67	16.64	0.00	VII.	6	10.26	29 12.62	23.27	3.53	46 35.31	30 8 19.42
33	9	. .	. .	18.	32.	. .	. .	. .	48 32.03	16.65	0.00	V.	4	8.50	19 24.30	22.97	2.31	48 48.68	29 58 29.58
34	9	. .	. .	19.2	34.	. .	. .	. .	50 33.65	16.65	0.00	V.	4	12.30	21 15.23	22.69	2.53	50 50.30	30 0 20.45
35	10	. .	11.	25.	. .	. .	. .	. .	53 39.49	16.66	−0.01	IV.	4	1.53	15 54.07	22.26	1.87	53 56.14	29 54 58.20
36	10	. .	. .	. .	. .	. .	46.	1.	55 17.36	16.66	−0.01	VII.	3	9.32	9 46.99	22.03	1.11	55 34.01	29 48 50.13
37	7	12.4	27.	. .	. .	. .	. .	. .	16 58 56.04	16.67	+0.01	IV.	7	7.45	32 51.87	21.52	3.98	16 59 12.72	30 11 57.37
38	10	. .	33.	. .	2.2	. .	. .	. .	17 3 2.00	16.67	0.01	IV.	7	12.50	35 25.66	20.95	4.32	17 1 18.68	14 30.93
39	9	39.	53.5	8.	. .	. .	. .	. .	17 5 22.65	+16.68	+0.02	IV.	9	6.55	−42 24.36	−20.62	−5.22	17 5 39.35	−30 21 30.20

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
June 21,	15	*s* 9.15	*l* 0.004			

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 123	June 21,	9	5	29.982	75.	68.

REMARKS.

(123) 21. Hor. thread assumed as 1 instead of 2.
(123) 22. Hor. thread assumed as 2 instead of 3.
(123) 27. Transits over T.'s II and IV assumed as recorded over T.'s I and III.
(123) 36. Hor. thread assumed as 2 instead of 3.
(123) 38. Minutes assumed as 1 instead of 3.

ZONE 123. JUNE 21. B. BELT, −30° 1′. D$_0$=−29° 38′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
40	7	. .	. .	. .	. .	. .	29.2	43.	17 6 0.00	+16.68	0.00	VII.	5	5.50	−22 52.34	−20.5	−2.74	17 6 16.68	−30 1 55.61
41	7	. .	. .	23.	37.	. .	. .	. .	8 36.99	16.69	−0.01	IV.	3	7.32	18 46.92	20.16	0.99	8 53.67	29 47 48.07
42	9	48.	. .	17.	. .	. .	. .	. .	12 31.44	16.70	0.00	IV.	5	7.37	23 46.74	19.59	2.85	12 48.14	30 2 49.18
43	9	. .	5.	19.4	34.	. .	. .	. .	14 33.98	16.70	+0.02	IV.	9	9.45	43 50.08	19.29	5.39	14 50.70	30 22 54.76
44	9	. .	34.	48.5	. .	. .	. .	. .	17 2.77	16.70	−0.01	IV.	4	6.25	18 11.23	18.93	2.16	17 19.46	29 57 12.32
45	8	. .	. .	51.4	. .	. .	. .	. .	23 5.90	16.72	+0.01	IV.	8	5.20	36 37.45	18.05	4.47	23 22.63	30 15 39.97
46	8	. .	. .	. .	33.	. .	. .	. .	25 32.84	16.72	0.00	VI.	6	5.02	26 29.48	17.70	3.18	25 49.56	30 5 30.36
47	10	. .	. .	49.	. .	. .	. .	. .	29 3.20	16.73	−0.01	IV.	4	5.38	17 47.53	17.18	2.11	29 19.92	29 56 46.82
48	10	. .	. .	. .	49.	3.	. .	. .	29 34.40	16.73	−0.01	V.	3	5.59	12 59.07	17.07	1.52	29 51.12	29 51 57.66
49	9	53.4	. .	22.	. .	. .	. .	. .	? 36.69	. .	. .	IV.	6	5.52	26 54.89	. .	3.23		
50	10	44.	. .	59.	. .	. .	. .	. .	17 25 27.84	16.72	+0.01	IV.	7	7.22	32 40.27	17.71	3.99	25 44.57	30 11 41.97
51	11	28.6	43.	. .	. .	. .	. .	. .	12 11.	. .	0.00	IV.	6	12.12	30 6.50	. .	3.64		
52	8	. .	. .	. .	. .	46.5	. .	15.2	38 32.07	16.75	+0.02	VII.	9	11.49	35 20.88	15.76	4.30	38 48.84	14 20.94
53	10	. .	10.	. .	. .	. .	. .	. .	41 39.06	16.75	0.01	III.	8	12.46	40 22.30	15.29	4.94	41 55.82	19 22.53
54	9	. .	. .	. .	. .	48.	2.	. .	42 33.40	16.75	+0.01	VI.	7	4.50	31 23.43	15.15	3.81	42 50.16	30 10 22.39
55	8	52.	. .	. .	. .	. .	. .	. .	45 35.54	16.76	0.00	II.	4	10.32	20 15.59	14.68	2.41	45 52.30	29 59 12.68
56	8	. .	. .	. .	. .	. .	12.	27.	17 45 43.38	16.76	−0.01	VII.	4	5.15	17 35.49	14.67	2.08	17 46 0.13	29 56 32.24
57	8	. .	. .	34.5	49.	. .	. .	. .	18 28 48.87	16.83	+0.01	IV.	6	12.17	30 9.02	7.91	3.65	18 29 5.71	30 9 0.58
58	8	6.5	21.	. .	50.	. .	. .	. .	34 49.98	16.83	0.00	IV.	6	9.16	28 37.76	6.94	3.45	35 6.81	30 7 28.15
59	7	. .	. .	43.	57.	. .	. .	. .	36 56.95	16.84	−0.02	IV.	2	6.13	8 7.08	6.62	0.89	37 13.77	29 46 54.59
60	9	. .	2.	. .	30.	. .	. .	. .	41 30.44	16.84	+0.01	IV.	8	8.42	38 19.32	5.89	4.71	41 47.29	30 17 9.92
61	10	. .	26.	40.5	. .	. .	. .	. .	46 54.98	16.85	0.01	IV.	7	10.14	34 7.01	5.03	4.16	47 11.84	12 56.20
62	3	3.	17.4	32.	46.5	. .	. .	. .	52 46.45	16.86	+0.01	IV.	7	5.07	?26 32.20	4.08	3.19	53 3.32	30 5 19.47
63	10	. .	. .	. .	. .	. .	30.	44.5	55 1.12	16.86	−0.01	VII.	4	5.16	17 36.00	3.72	2.06	55 17.97	29 56 21.78
64	8	. .	. .	. .	. .	. .	50.5	5.8	18 57 22.08	16.86	+0.01	VII.	7	5.00	31 28.23	3.33	3.83	18 57 38.95	30 10 15.39
65	8	. .	8.	22.	. .	. .	. .	. .	19 0 36.75	16.87	+0.01	IV.	8	3.30	35 41.99	2.81	4.37	19 0 53.63	30 14 29.17
66	9	. .	. .	5.2	. .	. .	. .	. .	3 19.34	16.87	−0.01	IV.	3	8.12	14 6.19	2.41	1.63	3 36.20	29 52 50.23
67	8	. .	. .	. .	. .	. .	16.2	31.3	19 4 47.76	+16.87	0.00	VII.	6	4.26	−21 11.09	− 2.14	−2.52	19 5 4.63	−29 59 55.75

ZONE 124. JUNE 24. K. BELT, −30° 23′. D$_0$=−30° 1′ 40″.

1	7	. .	. .	. .	. .	4.5	. .	. .	15 45 50.18	+17.90	+0.01	VI.	8	4.21	−36 7.51	−29.46	−4.28	15 46 8.09	−30 38 21.25
2	10	. .	. .	. .	56.8	. .	. .	. .	46 56.64	17.90	−0.01	IV.	2	7.51	8 56.49	29.43	1.19	47 14.53	11 7.11
3	8	. .	. .	. .	. .	53.4	. .	. .	47 39.00	17.90	0.01	V.	4	6.57	18 27.32	29.42	2.28	47 56.89	20 39.02
4	8	. .	32.0	46.4	. .	. .	. .	. .	?48 0.55	17.90	−0.01	IV.	3	10.4	15 2.67	29.41	1.87	49 18.44	17 13.95
5	7.8	. .	41.8	. .	. .	. .	. .	. .	50 10.70	17.90	+0.01	II.	9	5.40	41 46.35	29.37	4.95	50 28.61	44 0.67
6	10	. .	. .	. .	. .	39.3	. .	. .	50 24.88	17.90	−0.01	V.	3	3.54	11 56.04	29.36	1.52	50 42.77	14 6.92
7	9	. .	. .	. .	. .	39.0	. .	. .	51 24.56	17.90	0.01	V.	2	3.5	6 32.23	29.34	0.90	51 42.45	8 42.47
8	10	. .	. .	. .	. .	. .	48.2	. .	52 19.67	17.90	−0.01	V.	3	9.13	14 36.89	29.31	1.82	52 37.56	16 48.02
9	7	. .	. .	. .	. .	25.8	39.8	. .	53 11.33	17.91	0.00	VI.	6	9.42	28 50.68	29.29	3.45	53 29.24	31 3.42
10	9	. .	. .	. .	. .	12.3	. .	. .	57 57.86	17.92	0.00	V.	2	4.15	7 7.53	29.17	0.96	58 15.77	9 17.66
11	9	. .	. .	. .	. .	. .	. .	51.2	58 7.92	17.92	−0.01	VII.	4	0.0	14 56.67	29.17	1 87	15 58 25.83	17 7.71
12	7.8	. .	. .	. .	. .	. .	12.3	. .	15 59 43.67	17.92	+0.01	VI.	8	5.27	36 40.79	29.13	35	16 0 1.60	38 54.27
13	9	. .	. .	. .	. .	. .	10.7	. .	16 0 42.22	17.92	−0.02	VI.	1	11.16	5 40.68	29.10	0.82	1 0.12	7 50.60
14	8	. .	. .	. .	. .	56.3	. .	. .	1 41.90	17.92	0.00	VI.	4	6.39	18 18.11	29.07	2.26	1 59.82	20 29.44
15	10	. .	. .	. .	. .	. .	14.4	. .	2 45.82	17.93	0.00	VI.	6	4.8	26 2.26	29.04	3.11	2 3.75	28 14.41
16	9	. .	. .	. .	. .	. .	28.3	. .	4 59.83	17.93	−0.02	VII.	1	6.33	3 17.74	28.97	0.55	4 17.74	5 27.26
17	7	36.3	50.8	. .	. .	. .	. .	. .	16 6 19.43	+17.93	−0.01	III.	3	4.29	−12 13.69	−28.92	−1.55	16 6 37.35	−30 14 24.16

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
June 24, 15	*s* 10.54	*l* 0.013			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 124	June 24, 15 46	29.94	78.0	70.7

REMARKS.

(123) 41. Hor. thread assumed as 2 instead of 3.
(123) 48. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.
(123) 50. Transit over T. II assumed to have been recorded as over T. III.
(123) 52. Hor. thread assumed as 8 instead of 9, and micrometer reading as 2^r.49 instead of 11^r.49, to agree with Arg. Z. 221, 35.
(123) 62. Micrometer thread assumed as 6 instead of 7.
(124) 4. Minutes assumed as 49 instead of 48.
(124) 16. Minutes assumed as 3 instead of 4.

ZONE 124. JUNE 24. K. BELT, −30° 23′. D_0=−30° 1′ 40″.—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	9	. .	31.4	. .	. .	. .	. .	. .	16 6 0.17	+17.93	0.00	IV.	6	9.56	−28 57.93	−28.93	−3.46	16 6 18.10	−30 31 10.32
19	9	. .	40.4	. .	. .	. .	. .	. .	9 9.21	17.94	+0.01	IV.	7	7.50	32 54.39	28.84	3.90	9 27.16	35 7.13
20	8	. .	. .	. .	44.9	. .	. .	. .	9 44.74	17.94	0.00	IV.	6	11.31	29 55.91	28.82	3.57	10 2.68	32 9.30
21	8	. .	. .	. .	40.1	. .	. .	. .	12 39.94	17.95	+0.02	IV.	10	6.26	47 10.64	28.72	5.58	12 57.91	49 24.94
22	9	. .	. .	. .	. .	. .	34.2	. .	13 5.64	17.95	0.00	VI.	5	4.12	22 3.18	28.70	2.66	13 23.59	24 14.54
23	10	. .	. .	. .	. .	40.8	. .	. .	14 26.40	17.95	−0.01	VI.	4	7.52	18 54.91	28.65	2.32	14 44.34	21 5.88
24	9	. .	. .	. .	. .	. .	52.3	. .	15 23.73	17.95	0.00	VI.	5	9.15	24 35.96	28.64	2.94	15 41.68	26 47.54
25	8	. .	. .	. .	. .	. .	37.5	. .	16 9.03	17.95	−0.02	VI.	1	6.56	3 29.58	28.62	0.58	16 26.06	5 38.78
26	9	. .	. .	54.0	. .	. .	. .	. .	20 8.42	17.96	+0.01	IV.	8	9.2	38 29.40	28.45	4.56	20 26.39	40 42.41
27	9	. .	. .	15.5	. .	. .	. .	. .	26 30.01	17.97	+0.02	IV.	9	10.25	44 10.25	28.20	5.22	26 47.00	46 23.67
28	7	. .	3.8	. .	32.7	. .	. .	. .	29 32.44	17.98	−0.01	IV.	1	14.55	7 31.28	28.08	1.01	29 50.41	9 40.37
29	8	. .	. .	. .	53.2	. .	. .	. .	30 53.04	17.98	0.00	V.	6	11.21	29 40.73	28.02	3.53	31 11.02	31 52.28
30	7	. .	. .	2.3	. .	. .	. .	. .	32 16.31	17.98	−0.01	IV.	2	13.42	11 53.48	27.96	1.51	32 34.28	14 2.95
31	9	. .	49.3	. .	. .	. .	. .	. .	34 18.19	17.99	+0.01	IV.	8	13.55	40 57.13	27.87	4.86	34 36.19	43 9.86
32	7	. .	58.9	. .	. .	. .	. .	. .	35 27.67	17.99	0.00	III.	6	10.25	29 12.50	27.81	3.48	35 45.66	31 23.79
33	7	. .	. .	. .	16.7	. .	. .	. .	43 16.54	18.01	−0.01	IV.	2	6.18	8 9.60	27.45	1.08	43 34.54	10 18.13
34	9	. .	. .	. .	. .	. .	21.0	. .	43 52.51	18.01	−0.01	VI.	2	3.51	6 55.28	27.42	0.96	44 10.51	9 3.66
35	6	. .	. .	. .	. .	. .	12.7	. .	44 44.12	18.01	0.00	IV.	6	5.54	17 55.87	27.38	2.23	45 2.13	20 5.48
36	8	. .	12.8	. .	. .	. .	. .	. .	48 41.62	18.02	+0.01	III.	7	10.26	34 13.01	27.19	4.06	48 59.65	36 24.26
37	9	. .	. .	39.4	. .	. .	. .	. .	50 53.46	18.02	−0.01	III.	3	9.9	14 34.88	27.07	1.82	51 11.47	16 43.77
38	8	. .	. .	. .	55.5	. .	. .	. .	51 55.34	18.02	0.00	IV.	7	4.0	30 58.42	27.02	3.68	52 13.36	33 9.12
39	9	. .	. .	. .	. .	. .	43.8	. .	52 15.24	18.02	0.00	VI.	5	6.59	23 27.39	27.00	2.84	52 33.26	25 37.23
40	9	. .	. .	. .	. .	. .	2.7	. .	57 34.13	18.03	0.00	VI.	5	9.31	24 44.03	26.72	2.97	57 52.16	26 53.72
41	4.5	. .	. .	. .	54.7	9.3	. .	. .	16 58 54.70	18.03	−0.01	IV.	2	9.36	9 49.45	26.65	1.28	16 59 12.72	11 57.38
42	8	. .	. .	. .	10.3	. .	. .	. .	17 0 10.14	+18.03	+0.01	V.	8	4.33	−36 13.71	−26.58	−4.29	17 0 28.18	−30 38 24.58

ZONE 125. JUNE 25. B. BELT, −29° 23½′. D_0=−29° 10′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	47.	0.	15.	17 29 32.03	+19.15	+0.01	VII.	9	3.21	−40 36.01	−40.93	−4.83	17 29 51.19	−29 52 1.77
2	8	. .	. .	. .	. .	. .	3.	18.	32 34.58	19.16	−0.01	VII.	2	10.4	10 3.14	40.47	1.27	32 53.73	21 24.88
3	8	. .	53.5	8.	22.5	. .	. .	. .	35 36.64	19.16	−0.01	III.	3	11.40	15 51.02	39.99	1.94	35 55.79	26 12.95
4	9	. .	. .	. .	44.	58.	12.	. .	36 43.63	19.16	0.00	VII.	5	9.7	24 31.69	39.81	2.94	37 2.79	35 54.44
5	8	. .	4.5	19.	. .	. .	. .	. .	39 33.05	19.17	−0.01	IV.	3	3.2	11 29.87	39.37	1.45	39 52.21	22 50.69
6	9	29.	44.	. .	. .	. .	. .	. .	42 12.51	19.17	0.00	IV.	5	7.27	23 41.69	38.95	2.95	42 31.68	35 3.49
7	8	. .	. .	. .	. .	. .	2.	17.	42 33.61	19.17	0.00	VII.	4	8.14	19 5.77	38.90	2.30	42 52.78	30 26.97
8	8	. .	0.5	14.5	. .	. .	. .	. .	45 28.92	19.18	0.00	VII.	4	12.22	21 10.81	38.43	2.56	45 48.10	32 31.80
9	8	9.5	24.	. .	. .	. .	. .	. .	47 52.73	19.18	0.00	III.	4	12.54	21 27.33	38.05	2.59	48 11.91	32 47.97
10	7	. .	. .	8.6	22.	. .	. .	. .	49 22.22	19.18	−0.01	VII.	2	11.48	10 55.57	37.82	1.38	49 41.39	22 14.77
11	7	. .	. .	18.	. .	. .	. .	. .	51 32.18	19.18	0.00	V.	5	6.18	23 6.85	37.48	2.79	51 51.36	34 27.12
12	8	. .	. .	. .	. .	. .	. .	33.	52 49.78	19.19	0.00	VII.	4	10.40	20 19.39	37.27	2.46	53 8.97	31 39.12
13	5.6	. .	. .	53.	. .	. .	36.	51.	55 7.48	19.19	0.00	VII.	5	7.1	23 28.15	36.90	2.82	55 26.67	34 47.87
14	8	. .	4.	19.	. .	. .	. .	. .	57 32.88	19.20	−0.01	IV.	4	5.50	17 53.58	36.51	2.17	57 52.07	29 12.26
15	7	. .	. .	. .	. .	. .	16.	31.	17 57 47.62	19.20	0.00	VII.	5	1.09	20 30.66	36.47	2.48	17 58 6.82	31 49.61
16	7	. .	41.0	. .	. .	. .	27.	42.	18 2 9.05	19.20	+0.01	VII.	7	12.12	35 6.07	35.80	4.19	18 1 28.26	46 26.06
17	9	. .	. .	. .	. .	57.	11.	26.	4 42.62	19.20	0.00	VII.	5	5.57	22 55.88	35.36	2.76	5 1.82	34 14.00
18	8	. .	. .	. .	. .	. .	14.	29.	6 45.68	19.21	+0.01	VII.	8	5.25	36 39.54	35.03	4.38	7 4.90	47 58.95
19	8	4.5	19.	. .	. .	. .	. .	. .	9 47.82	19.21	0.00	III.	6	10.7	29 3.43	34.53	3.47	10 7.03	40 21.43
20	9	49.	4.	. .	. .	. .	. .	. .	18 11 32.51	+19.21	0.00	IV.	5	9.6	−24 31.62	−34.25	−2.94	18 11 51.72	−29 35 48.81

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
June 25,	15	*s* 11.46	*l* 0.024	+ 0.103	+ 0.271	0.000

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 125	June 25,	9	5	30.122	78.	73.5

REMARKS.

(124) 20. Micrometer reading assumed as $11^{\text{r}}.51$ instead of $11^{\text{r}}.31$.
(124) 35. Hor. thread assumed as 4 instead of 6.
(125) 16. Minutes assumed as 1 instead of 2, and transits over T.'s VI and VII as recorded 10^{s} too early.

ZONE 125. JUNE 25. B. BELT, −29° 23½′. D₀=−29° 10′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	8	. .	2.	17.	. .	. .	. .	. .	18 14 30.97	+19.22	0.00	IV.	5	10.35	−25 16.50	−33.77	−3.03	18 14 50.19	−29 36 33.30
22	8	28.5	43.	. .	. .	. .	. .	14.	14 11.76	19.22	0.00	VII.	5	8.45	24 20.60	33.82	2.92	14	35 37.34
23	8	28.5	43.	. .	. .	. .	. .	. .	17 11.76	19.22	0.00	III.	5	8.5	24 0.81	33.33	2.88	17 30.98	35 17.02
24	7	. .	. .	. .	. .	. .	23.	28.	17 54.70	19.23	+0.02	VII.	9	7.44	42 48.64	33.21	5.12	18 13.95	54 6.97
25	9	. .	45.	59.5	. .	. .	. .	. .	21 13.83	19.23	0.01	V.	7	4.8	31 2.40	32.67	3.71	21 33.07	42 18.78
26	10	. .	1.5	16.	. .	. .	. .	. .	23 30.31	19.23	0.01	IV.	7	5.43	31 50.35	32.29	3.81	23 49.55	43 6.45
27	6	. .	37.	51.	. .	. .	. .	. .	26 5.63	19.24	+0.01	IV.	8	6.58	37 26.87	31.87	4.48	26 24.88	48 43.22
28	7	. .	. .	. .	. .	. .	53.4	8.	27 24.83	19.24	0.00	V.	5	8.37	24 16.95	31.65	2.91	27 44.07	35 31.51
29	7	. .	. .	. .	. .	. .	. .	38.	28 54.97	19.24	+0.01	VII.	7	12.24	35 12.12	31.40	4.21	29 14.22	46 27.73
30	9	. .	. .	56.	. .	. .	38.4	. .	31 9.97	19.24	−0.01	VII.	3	10.3	15 31.98	31.03	1.84	31 29.20	26 44.85
31	8	. .	. .	. .	. .	. .	17.	32.	32 48.64	19.25	0.00	VII.	5	11.26	25 41.78	30.76	3.08	33 7.89	36 55.62
32	8	. .	. .	42.	56.3	. .	. .	. .	34 56.20	19.25	0.00	V.	6	6.40	27 19.05	30.41	3.28	35 15.45	38 32.74
33	7	. .	26.	41.	. .	. .	. .	. .	36 55.11	19.25	+0.01	IV.	8	3.30	35 41.99	30.08	4.26	37 14.37	46 56.33
34	7	. .	. .	. .	18.	. .	46.	. .	49 17.63	19.26	0.00	VII.	6	9.4	28 31.28	28.03	3.41	46 36.89	39 42.72
35	10	13.	27.5	. .	. .	. .	. .	. .	48 56.34	19.26	+0.01	III.	6	13.31	30 46.28	28.09	3.67	49 15.61	41 58.04
36	7	47.	1.	15.4	. .	. .	. .	. .	? 29.84	19.27	0.00	IV.	5	3.38	21 46.22	. .	2.63	49.11	
37	8	. .	. .	. .	. .	57.	. .	25.5	53 42.60	19.27	+0.01	VII.	8	8.45	38 20.40	27.30	4.58	54 1.88	49 32.28
38	7	. .	. .	. .	59.	. .	27.	. .	18 55 58.68	19.28	−0.02	VII.	2	3.44	6 51.52	26.92	0.89	18 56 17.94	17 59.33
39	7	44.5	00.	14.7	29.	. .	. .	. .	19 1 28.65	19.28	+0.01	V.	7	8.34	33 16.54	26.02	3.98	19 1 47.94	44 26.54
40	7	. .	. .	3.	. .	31.5	46.	. .	3 17.34	19.28	+0.02	VII.	9	5.40	41 46.11	25.72	5.00	3 36.64	52 56.83
41	8	. .	. .	. .	. .	. .	. .	35.5	4 52.24	19.28	−0.01	VII.	4	4.55	18 25.92	25.46	2.14	5 11.51	29 33.52
42	9	. .	. .	. .	. .	32.	46.	. .	7 17.53	19.29	0.00	VII.	5	9.29	24 42.78	25.07	2.97	7 36.82	35 50.82
43	10	. .	51.	6.	. .	. .	. .	. .	10 19.90	19.29	−0.01	IV.	4	9.3	19 30.90	24.56	2.36	10 39.18	30 37.82
44	7	. .	. .	. .	50.	4.	. .	. .	11 49.77	19.29	+0.02	VI.	9	5.21	40 36.24	24.31	4.85	12 9.08	51 45.40
45	9	. .	. .	. .	. .	. .	. .	54.	13 10.65	19.29	−0.02	VII.	2	8.58	9 29.85	24.09	1.19	13 29.92	20 35.13
46	8	. .	. .	. .	. .	32.	46.	1.	15 17.63	19.30	0.00	VII.	5	9.3	24 29.67	23.74	2.94	15 36.93	35 36.35
47	9	. .	. .	21.	35.	. .	. .	. .	17 20.74	19.30	0.00	VI.	5	9.45	24 51.09	23.37	2.99	17 40.04	35 57.45
48	8	. .	. .	. .	. .	. .	38.	53.	19 9.56	19.30	−0.02	VII.	1	10.2	5 3.13	23.11	0.67	19 28.84	16 6.91
49	8	. .	. .	. .	. .	. .	49.	4.	21 20.70	19.30	+0.02	VII.	9	5.47	41 53.63	22.75	5.00	21 40.02	53 1.38
50	9	. .	. .	9.	23.	. .	. .	. .	24 22.98	19.30	−0.01	V.	4	5.12	17 34.37	22.25	2.14	24 42.27	28 38.76
51	9	33.	47.	. .	. .	. .	. .	. .	32 16.05	19.31	0.00	III.	6	6.59	27 28.63	20.97	3.30	32 35.36	38 32.90
52	8	38.	. .	. .	11.	. .	39.	54.	38 10.83	19.32	−0.01	VII.	4	10.40	20 19.39	20.01	2.46	38 30.14	31 21.86
53	9	7.4	22.	. .	. .	. .	. .	. .	45 50.65	19.33	−0.01	III.	4	5.56	17 53.53	18.79	2.18	46 9.97	28 54.50
54	9	. .	. .	. .	. .	. .	. .	47.5	46 4.33	19.33	0.00	VII.	5	9.35	24 45.81	18.75	2.97	46 23.66	35 47.53
55	9	. .	. .	. .	. .	16.	30.	45.	48 1.60	19.33	−0.01	VII.	4	5.12	17 33.99	18.44	2.14	48 20.92	28 34.57
56	9	. .	. .	. .	. .	. .	3.	18.3	49 34.71	19.33	0.02	VII.	1	8.28	4 15.72	18.19	0.56	49 54.02	15 14.47
57	8	. .	13.	. .	42.	56.	10.	25.	55 41.66	19.34	−0.01	VII.	4	7.38	18 47.61	17.23	2.27	56 0.99	29 47.11
58	8	. .	. .	. .	. .	. .	. .	24.	56 40.82	19.34	0.00	VII.	5	6.6	?23 0.43	17.07	2.78	57 0.16	34 0.28
59	9	. .	. .	. .	. .	3.	17.	32.	19 58 48.57	19.34	−0.02	VII.	2	7.2	8 31.36	16.74	1.05	19 59 7.89	19 29.15
60	10	. .	. .	. .	. .	. .	49.2	4.2	20 2 20.58	19.34	−0.01	VII.	3	2.14	11 5.24	16.19	1.36	20 2 39.91	22 2.79
61	10	. .	. .	. .	. .	1.	. .	29.5	4 46.53	19.34	0.00	VII.	6	10.42	29 20.70	15.81	3.51	5 5.87	40 20.02
62	9	. .	. .	46.3	0.5	. .	29.	43.3	8 0.44	19.35	+0.01	VII.	8	11.22	40 9.81	15.31	4.80	8 19.80	51 9.92
63	8	58.	12.2	. .	. .	. .	. .	. .	10 41.11	19.35	0.00	II.	5	9.49	24 53.25	14.90	2.99	11 0.46	35 51.14
64	8	. .	. .	. .	. .	8.2	22.	37.	10 53.72	19.35	0.00	VII.	6	9.42	28 50.44	14.86	3.45	11 13.07	39 48.75
65	9	. .	. .	. .	23.4	38.	. .	6.2	13 23.32	19.35	0.00	VII.	6	5.14	26 35.30	14.48	3.19	13 42.67	37 32.97
66	7	. .	. .	. .	. .	24.4	38.4	53.	15 9.89	19.36	0.00	VII.	5	4.53	22 23.61	14.21	2.70	15 29.25	33 20.52
67	7	. .	. .	. .	1.2	15.	29.2	44.1	17 0.80	19.36	0.00	VII.	5	5.4	22 29.16	13.93	2.71	17 20.16	33 25.80
68	8	. .	. .	. .	. .	. .	1.4	16.1	18 32.95	19.36	+0.02	VII.	9	3.44	40 47.62	14.01	4.88	18 52.33	51 46.51
69	8	. .	. .	. .	. .	. .	40.2	. .	20 20 11.65	+19.36	−0.01	VII.	4	10.26	−20 9.30	−13.44	−2.43	20 20 31.00	−29 31 5.17

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(125) 22. Transits discordant, and apparently belong to the preceding and following stars.
(125) 30. Micrometer reading assumed as 11ʳ.3 instead of 10ʳ.3.
(125) 34. Minutes assumed as 46 instead of 49.
(125) 41. Micrometer reading assumed as 6ʳ.55 instead of 4ʳ.55.
(125) 44. Micrometer reading assumed as 3ʳ.21 instead of 5ʳ.21.
(125) 62. Micrometer reading assumed as 12ʳ.22 instead of 11ʳ.22.
(125) 67. Minutes assumed as 17, to correspond with ———.
(125) 68. Minutes of transit assumed as 18 instead of 16.

ZONE 125. JUNE 25. B. BELT, −29° 23½′. D$_\circ$=−29° 10′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	7	. .	. .	. .	. .	. .	54.2	9.1	20 21 25.79	+19.36	0.00	VII.	5	11.24	−25 40.77	−13.26	−3.09	20 21 45.15	−29 36 37.12
71	7	. .	. .	. .	18.	32.	46.4	1.2	24 17.87	19.36	+0.01	VII.	8	6.9	37 1.74	12.83	4.44	24 37.24	47 59.01
72	10	. .	. .	2.	16.2	. .	. .	. .	29 16.22	19.36	0.01	VI.	8	4.17	36 5.50	12.08	4.32	29 35.59	47 1.90
73	9	. .	. .	. .	. .	. .	25.3	40.	31 56.82	19.36	+0.01	VII.	7	7.3	32 30.26	11.68	3.89	32 16.19	43 25.83
74	9	. .	. .	. .	21.	35.2	49.	4.	33 20.75	19.36	0.00	VII.	6	9.40	28 49.43	11.48	3.47	33 40.11	39 44.38
75	10	. .	. .	. .	35.2	. .	4.	. .	35 35.24	19.37	0.00	VII.	5	8.47	24 21.61	11.15	2.92	35 54.61	35 15.68
76	10	. .	. .	. .	. .	34.5	. .	3.3	37 20.28	19.37	+0.02	VII.	9	7.22	42 37.54	10.89	5.06	37 39.67	53 33.49
77	10	. .	. .	. .	. .	. .	. .	19.3	39 36.13	19.37	0.00	VII.	5	8.6	24 0.94	10.56	2.88	39 55.50	34 54.38
78	10	. .	. .	. .	. .	. .	35.	50.	18 41 6.63	+19.37	0.00	VII.	5	6.47	−23 21.10	−10.34	−2.80	20 41 26.00	−29 34 14.24

ZONE 126. AUGUST 30. K. BELT, −29° 23′. D$_\circ$=−29° 0′ 0″.

1	10	. .	. .	. .	. .	39.4	. .	. .	18 41 25.07	+18.26	+0.01	V.	7	11.33	−34 46.79	−28.61	−4.10	18 41 43.34	−29 35 19.50
2	5	. .	. .	. .	47.0	1.2	. .	. .	42 46.85	18.26	+0.01	V.	7	7.6	32 32.16	28.42	3.84	43 5.12	33 4.42
3	8	. .	. .	4.7	. .	33.3	. .	. .	44 18.83	18.25	−0.01	V.	3	10.20	15 10.68	28.21	1.90	44 37.07	15 40.79
4	6	. .	. .	22.7	36.6	. .	. .	. .	45 36.66	18.24	0.00	IV.	5	6.33	23 14.47	28.03	2.79	45 54.90	23 45.29
5	6	. .	. .	. .	. .	32.5	. .	. .	46 18.19	18.24	+0.01	V.	8	10.33	39 15.24	27.94	4.62	46 36.44	39 47.80
6	10	. .	. .	. .	. .	. .	. .	30.8	46 47.77	18.24	0.01	IX.	7	11.15	34 36.57	27.87	4.08	47 6.02	35 8.52
7	10	. .	28.5	. .	. .	. .	. .	. .	48 57.40	18.23	+0.02	II.	9	5.2	41 27.19	27.57	4.88	49 15.65	41 59.64
8	10	. .	. .	. .	. .	56.2	. .	. .	51 41.81	18.21	−0.01	V.	4	8.52	19 25.31	27.20	2.38	52 0.01	19 54.89
9	7	. .	. .	. .	. .	45.1	. .	13.8	52 30.75	18.20	+0.01	IX.	7	6.51	32 23.45	27.09	3.82	52 48.96	32 54.36
10	10	. .	15.0	. .	. .	. .	. .	. .	54 43.78	18.19	0.00	III.	6	11.32	29 46.29	26.79	3.53	55 1.97	30 16.61
11	10	. .	6.0	20.7	. .	. .	. .	. .	55 34.82	18.19	0.00	III.	5	10.13	25 5.35	26.67	3.01	55 53.01	25 35.03
12	7	. .	. .	. .	. .	. .	28.0	42.5	55 59.36	18.18	−0.01	VI.	4	5.11	17 33.73	26.61	2.16	56 17.53	18 2.50
13	9	. .	. .	. .	. .	33.4	. .	. .	18 57 19.02	18.18	0.00	V.	5	5.18	22 36.59	26.43	2.73	18 57 37.20	23 5.75
14	9	. .	2.0	. .	. .	. .	. .	. .	19 0 30.53	18.16	−0.02	II.	2	1.58	5 58.30	26.00	0.89	19 0 48.67	6 25.19
15	5	. .	. .	. .	30.4	. .	58.5	. .	1 30.04	18.15	+0.02	IV.	9	9.56	43 55.63	25.87	5.16	1 48.21	44 26.66
16	9	. .	. .	24.9	. .	. .	. .	. .	4 39.20	18.14	+0.01	III.	7	3.58	30 57.35	25.44	3.67	4 57.35	31 26.46
17	7	. .	. .	. .	. .	7.3	. .	. .	4 52.95	18.14	0.00	VI.	6	10.10	29 4.80	25.42	3.45	5 11.09	29 33.67
18	8	58.8	13.3	27.8	. .	. .	. .	. .	9 41.95	18.11	−0.01	IV.	4	3.45	16 50.55	24.76	2.08	10 0.05	17 17.39
19	10	28.2	. .	. .	. .	. .	. .	. .	11 11.51	18.10	0.00	II.	5	9.27	24 42.01	24.57	2.97	11 29.61	25 9.55
20	6.7	. .	. .	57.4	11.7	. .	. .	. .	13 11.54	18.09	−0.01	IV.	4	10.21	20 10.23	24.30	2.46	13 29.62	20 36.99
21	5.6	35.2	49.8	4.4	18.8	. .	. .	. .	15 18.67	18.08	+0.01	IV.	7	12.21	35 11.03	24.02	4.15	15 36.76	35 29.20
22	9	38.3	53.2	. .	. .	. .	. .	. .	17 21.90	18.07	0.01	IV.	7	13.10	35 35.74	23.75	4.20	17 39.98	36 3.69
23	8	. .	7.9	22.3	. .	. .	. .	. .	18 36.77	18.06	+0.01	IV.	8	13.22	40 40.49	23.58	4.80	18 54.84	41 8.87
24	7.8	. .	. .	. .	. .	24.8	. .	. .	19 10.39	18.05	−0.01	VI.	3	11.33	15 47.35	23.51	1.96	19 28.43	16 12.82
25	9	. .	37.0	51.6	. .	. .	. .	. .	21 5.98	18.04	+0.02	IV.	8	14.35	40 47.05	23.26	4.86	21 24.04	41 15.17
26	9	. .	. .	. .	. .	. .	23.1	. .	28 54.62	18.00	−0.02	VI.	1	8.0	4 1.85	22.23	0.67	29 12.60	4 24.75
27	8	27.4	. .	56.5	. .	. .	. .	. .	32 10.54	17.98	−0.01	IV.	3	2.45	11 21.30	21.81	1.48	32 28.51	11 44.59
28	9	. .	. .	. .	. .	. .	. .	0.0	32 17.01	17.98	+0.01	IX.	8	8.37	38 15.61	21.80	4.51	32 35.00	38 41.92
29	10	. .	3.3	. .	. .	. .	. .	. .	35 32.06	17.96	0.00	II.	6	7.24	27 41.09	21.38	3.31	35 50.02	28 5.78
30	9	. .	. .	. .	19.9	. .	. .	. .	37 19.74	17.95	−0.01	IV.	2	11.59	11 1.55	21.15	1.44	37 37.68	11 24.14
31	7	. .	. .	. .	11.8	26.1	. .	. .	38 11.70	17.94	+0.01	IV.	7	4.6	31 1.45	21.04	3.67	38 29.65	31 26.16
32	8	. .	. .	. .	. .	. .	20.2	. .	38 51.73	17.94	−0.02	VI.	1	6.36	3 19.50	20.96	0.60	39 9.65	3 41.06
33	5	. .	. .	. .	. .	. .	0.0	14.8	39 31.48	17.93	−0.02	VI.	2	7.34	8 47.74	20.87	1.19	39 49.39	9 9.80
34	8	. .	. .	37.9	. .	. .	. .	. .	45 52.17	17.89	0.00	III.	6	9.24	28 41.75	20.06	3.42	46 10.06	29 5.23
35	8	. .	. .	. .	. .	19.8	. .	. .	46 5.48	17.89	+0.01	V.	7	13.4	35 32.67	20.04	4.19	46 23.38	35 56.90
36	6.7	. .	. .	. .	. .	. .	. .	0.8	19 46 17.76	+17.89	+0.01	VII.	7	10.52	−34 25.74	−20.01	−4.08	19 46 35.66	−29 34 49.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Aug. 30,	18	*s* 10.40	*g* 0.010			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°
Zone 126	Aug. 30,	18 41	29.88	78.5	73.5

REMARKS.

(125) 73. Minutes assumed as 30 instead of 31.
(126) 25. Micrometer reading assumed as 13$^{\rm r}$.35 instead of 14$^{\rm r}$.35.

Zone 126. August 30. K. Belt, −29° 23′. D₀=−29° 0′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
37	10	. .	. .	48.9	. .	. .	. .	. .	19 48 3.17	+17.88	0.00	IV.	6	8.35	−28 17.09	−19.79	−3.37	19 48 21.05	−29 28 40.25
38	7	. .	44.4	. .	. .	. .	. .	. .	49 12.90	17.87	−0.02	II.	1	5.27	2 44.69	19.64	0.53	49 30.75	3 4.86
39	8	. .	. .	. .	35.8	50.0	. .	. .	49 35.62	17.87	−0.01	V.	3	9.48	14 54.55	19.59	1.87	49 53.48	15 16.01
40	5.6	. .	. .	28.8	43.1	. .	. .	. .	55 43.01	17.84	0.00	IV.	6	10.37	29 18.61	18.84	3.48	56 0.85	29 40.93
41	8	. .	. .	27.8	42.3	. .	. .	. .	19 56 42.15	17.83	+0.01	IV.	7	9.23	33 41.28	18.72	3.99	19 56 59.99	34 3.99
42	7	. .	. .	39.8	53.8	. .	. .	. .	20 1 53.70	17.80	−0.02	IV.	2	5.9	7 34.81	18.10	1.07	20 2 11.48	7 53.98
43	6	. .	. .	. .	42.3	. .	. .	. .	10 42.14	17.74	+0.01	IV.	8	3.4	35 28.88	17.07	4.18	10 59.89	35 50.13
44	6	. .	. .	. .	. .	. .	22.0	. .	10 53.36	17.74	0.01	VII.	8	10.25	39 10.82	17.05	4.61	11 11.11	39 32.48
45	6	. .	. .	. .	. .	. .	. .	38.2	10 55.23	17.74	0.01	VII.	8	11.30?	39 43.00	17.05	4.68	11 12.98	39 51.73
46	8	. .	. .	. .	. .	. .	. .	7.5	13 24.50	17.72	0.01	VII.	8	6.37	37 15.86	16.77	4.38	13 42.23	37 37.01
47	6	. .	. .	. .	11.7	25.8	. .	. .	15 11.51	17.71	+0.01	IV.	7	8.00	32 59.44	16.57	3.89	15 29.23	33 19.90
48	8	. .	. .	. .	. .	. .	. .	21.3	15 38.08	17.71	−0.01	VII.	4	10.39	20 18.89	16.52	2.48	15 55.78	20 37.89
49	9	. .	. .	. .	. .	. .	. .	15.5	16 32.42	17.71	+0.01	VII.	7	4.13	31 4.54	16.42	3.68	16 50.14	31 24.64
50	6	. .	. .	. .	. .	. .	. .	45.2	17 2.15	17.70	+0.01	VII.	7	8.17	33 7.58	16.36	3.92	17 19.86	33 27.86
51	7.6	. .	. .	. .	. .	. .	. .	42.4	17 59.15	17.69	−0.01	VII.	4	5.40	17 48.11	16.26	3.20	18 16.83	18 7.57
52	9	. .	44.8	. .	. .	. .	. .	. .	20 13.59	17.68	+0.01	II.	7	3.50	30 53.18	16.01	3.65	20 31.28	31 12.84
53	5	. .	58.5	12.9	. .	. .	. .	. .	21 27.32	17.67	+0.01	IV.	8	4.43	36 18.80	15.88	4.28	21 45.00	36 38.96
54	9	. .	. .	40.9	. .	. .	. .	. .	22 54.84	17.66	−0.02	III.	2	2.0	5 59.46	15.72	0.87	22 12.48	6 16.05
55	7	. .	. .	. .	. .	29.6	. .	. .	23 15.15	17.66	0.02	V.	2	1.19	5 38.78	15.69	0.83	23 32.79	5 55.30
56	10	. .	. .	. .	27.8	. .	. .	. .	25 27.64	17.65	0.02	IV.	2	1.37	5 47.91	15.45	0.85	25 45.27	6 4.21
57	8	. .	. .	. .	49.8	. .	17.8	. .	27 49.47	17.63	−0.01	V.	3	6.56	13 27.82	15.20	1.72	28 7.09	13 44.74
58	9	. .	14.5	. .	. .	. .	. .	. .	30 43.20	17.62	0.00	III.	5	6.56	23 26.02	14.90	1.84	31 0.82	23 42.76
59	7	. .	. .	. .	58.8	12.9	. .	. .	30 58.62	17.62	+0.02	V.	9	8.25	43 9.69	14.87	5.09	31 16.26	43 29.65
60	5	. .	. .	. .	. .	. .	56.6	. .	31 28.12	17.61	−0.02	VI.	1	8.35	4 19.50	14.82	0.69	31 45.71	4 35.01
61	6	. .	. .	. .	. .	36.0	. .	. .	32 21.60	17.60	0.01	VII.	4	4.38	17 16.85	14.73	2.13	32 39.19	17 33.71
62	7	. .	. .	. .	. .	. .	6.2	21.1	33 37.76	17.59	0.01	VII.	4	5.50	17 53.15	14.61	2.20	33 55.34	18 9.96
63	10	. .	48.4	. .	. .	. .	. .	. .	36 16.96	17.58	−0.01	II.	2	8.40	9 21.02	14.34	1.23	36 34.53	9 36.59
64	9	54.6	9.0	. .	. .	. .	. .	. .	39 37.94	17.55	+0.01	II.	7	11.13	34 36.56	14.01	4.09	39 55.50	34 54.66
65	9	25.2	39.4	. .	. .	. .	. .	. .	41 8.42	17.54	0.01	III.	7	9.52	33 55.86	13.86	3.97	41 25.97	34 13.69
66	10	. .	. .	37.2	. .	. .	. .	. .	20 46 51.62	+17.50	+0.01	IV.	8	8.8	−38 2.17	−13.32	−4.48	20 47 9.13	−29 38 19.97

Zone 127. September 3. B. Belt, −27° 31′. D₀=−27° 8′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	40.	54.4	9.	. .	. .	. .	. .	20 9 22.69	+17.10	0.00	IV.	5	6.20	−23 7.91	−18.84	−2.80	20 9 39.79	−27 32 9.55
2	10	. .	5.	19.	. .	. .	. .	. .	11 33.04	17.08	0.00	III.	4	11.41	20 50.53	18.57	2.60	11 50.12	29 51.70
3	9	27.	41.	55.2	. .	. .	. .	. .	15 9.19	17.07	−0.01	IV.	3	7.13	13 36.43	18.15	1.92	15 26.25	22 36.50
4	9	20.2	34.3	49.	. .	. .	. .	. .	18 2.67	17.05	−0.01	IV.	4	5.30	17 43.50	17.81	2.33	18 19.71	26 43.64
5	7	34.	48.	2.5	. .	. .	. .	. .	20 16.65	17.04	+0.02	IV.	9	10.40	44 17.82	17.55	4.87	20 33.71	53 20.24
6	10	49.	3.	. .	. .	. .	. .	. .	24 31.47	17.01	+0.01	III.	7	4.43	31 20.06	17.07	3.62	24 48.49	40 20.75
7	8	. .	. .	. .	24.3	38.5	. .	. .	25 24.29	17.00	+0.01	VI.	8	3.43	38 48.36	16.97	4.33	25 41.30	47 49.66
8	6	. .	. .	. .	18.4	32.	. .	. .	31 18.01	16.96	−0.02	VI.	1	2.35	1 17.98	16.31	0.74	31 34.95	10 15.03
9	10	28.	42.2	. .	. .	. .	. .	. .	35 10.52	16.94	0.00	III.	6	4.28	26 12.49	15.89	3.12	35 27.46	35 11.50
10	7	. .	. .	. .	. .	. .	. .	51.	35 8.74	16.94	+0.01	VII.	8	3.49	35 51.17	15.89	4.04	35 25.69	44 51.10
11	7	. .	. .	. .	. .	25.	39.	51.4	37 10.90	16.93	−0.01	VII.	3	10.57	15 28.99	15.67	2.09	37 27.82	24 26.75
12	9	. .	. .	55.5	9.4	. .	. .	. .	40 9.31	16.91	0.01	VII.	4	9.50	19 54.20	15.35	2.52	40 26.21	28 52.07
13	4	52.	6.2	21.	35.	. .	. .	. .	42 34.65	16.89	−0.01	V.	4	9.8	19 33.38	15.10	2.48	42 51.53	28 30.96
14	9	. .	. .	. .	. .	. .	14.	28.4	43 46.03	16.89	+0.01	VII.	8	11.38	34 45.10	14.98	4.10	44 2.93	43 44.18
15	10	15.	. .	44.	. .	. .	. .	. .	20 47 57.92	+16.86	+0.01	IV.	8	4.00	−35 57.12	−14.53	−4.08	20 48 14.79	−27 44 55.73

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s.
Sept. 3, 18	*s* 9.83	*g* 0.010	+ 0.114	+ 0.102	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1847. h. m.	in.	°	°
Zone 127	Sept. 3, 9 5	30.030	81.	77.

REMARKS.

(126) 45. Micrometer reading assumed as 11ʳ.3 instead of 11ʳ.30.
(127) 14. Micrometer reading assumed as 1ʳ.38 instead of 11ʳ.38.

ZONE 127. SEPTEMBER 3. B. BELT, −27° 31′. D_0=−27° 8′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
16	9	37.	51.	. .	. .	. .	. .	. .	20 50 19.93	16.84	0.00	VII.	6	5.11	−26 33.81	−14.29	−3.15	20 50 36.77	−27 35 31.25
17	8	. .	. .	20.	. .	48.	. .	. .	20 52 33.86	16.82	−0.01	VI.	4	7.51	18 54.41	14.06	2.40	20 52 50.67	27 50.87
18	8	59.	13.2	27.5	. .	. .	. .	. .	21 9 41.25	16.71	0.02	IV.	1	10.56	5 30.79	12.35	1.15	21 9 57.94	14 24.29
19	8	. .	. .	. .	. .	. .	1.	15.5	11 32.95	16.70	−0.01	VII.	2	7.32	8 46.52	12.18	1.46	11 49.64	17 40.16
20	10	. .	. .	. .	8.	. .	. .	50.	14 7.85	16.68	+0.02	VII.	9	12.56	45 25.99	11.94	5.00	14 24.55	54 22.93
21	10	. .	. .	. .	. .	27.2	. .	55.	17 12.97	16.66	−0.01	VII.	8	11.28	39 42.61	11.65	4.44	17 29.62	48 38.70
22	7	. .	. .	. .	. .	31.	45.	. .	19 16.90	16.65	−0.02	VII.	1	4.00	2 15.75	11.46	0.69	19 33.53	11 7.90
23	9	. .	30.6	44.5	58.6	. .	. .	. .	21 58.69	16.63	+0.01	IV.	8	9.24	38 40.49	11.22	4.33	22 15.33	47 36.04
24	9	20.	34.3	48.5	. .	. .	. .	. .	24 2.57	16.62	0.00	IV.	6	10.24	29 12.05	11.03	3.41	24 19.19	38 6.49
25	8	. .	20.3	34.2	48.5	. .	. .	. .	34 34.07	16.55	−0.01	V.	3	10.00	15 0.61	10.11	2.04	34 50.61	23 52.76
26	9	. .	. .	59.	13.	. .	. .	. .	36 12.90	16.54	0.00	V.	5	10.37	25 17.47	9.99	3.03	36 29.44	34 10.49
27	7	. .	. .	. .	. .	. .	. .	2.	36 19.66	10.54	0.00	VII.	6	10.00	28 59.55	9.98	3.39	36 36.20	37 52.92
28	10	. .	. .	. .	. .	47.	1.	. .	38 32.91	16.52	0.00	VII.	5	7.39	23 47.35	9.80	2.87	38 49.43	32 40.02
29	9	. .	. .	28.6	42.5	56.7	. .	. .	43 42.52	16.49	+0.01	VI.	8	10.46	39 21.67	8.64	4.41	43 59.02	48 14.72
30	10	. .	25.2	40.2	54.5	. .	. .	. .	21 47 8.33	16.46	0.01	VI.	7	11.14	34 37.08	8.32	3.95	21 48 24.80	43 29.35
31	8	. .	. .	56.	10.	24.	. .	. .	22 37 9.97	16.15	+0.01	VI.	8	5.30	36 42.32	29.70	4.16	22 37 26.11	45 56.18
32	10	. .	. .	9.	23.2	37.4	. .	. .	41 23.00	16.12	0.00	VI.	2	11.16	10 39.69	29.63	1.61	41 39.11	19 50.93
33	10	. .	. .	. .	30.	44.	57.8	. .	42 29.72	16.12	−0.01	VII.	2	10.00	10 1.15	29.62	1.54	42 45.83	18 12.31
34	9	28.5	42.7	57.	. .	. .	. .	. .	46 11.11	16.09	0.00	IV.	8	2.10	35 1.65	29.58	3.99	46 27.20	44 15.22
35	8	. .	. .	. .	. .	38.	52.	6.5	48 23.92	16.08	0.00	VII.	3	5.9	12 33.51	29.55	1.79	48 40.00	21 44.85
36	10	3.4	17.4	32.	. .	. .	. .	. .	51 45.88	16.06	0.00	IV.	6	6.50	27 24.14	29.52	3.24	52 1.94	36 36.90
37	7	31.2	45.5	0.0	. .	. .	. .	. .	56 13.86	16.03	0.00	IV.	6	7.55	27 56.91	29.51	3.30	55 29.89	37 9.72
38	6	. .	. .	. .	26.3	40.5	. .	. .	22 56 26.30	16.03	+0.01	VI.	10	6.53	47 24.07	29.51	5.23	22 56 42.34	56 38.81
39	7	9.	23.2	37.5	. .	. .	. .	. .	23 2 51.63	16.00	0.00	VI.	7	10.42	34 20.95	29.51	3.92	23 3 7.63	43 34.38
40	9	. .	45.	58.	12.	26.	. .	. .	5 11.81	15.98	0.00	VII.	3	4.21	12 9.30	29.52	1.74	5 27.79	21 20.56
41	11	. .	. .	. .	. .	8.	22.	36.4	8 53.91	15.97	0.00	VII.	4	7.22	18 39.57	29.53	2.39	9 9.88	27 51.49
42	10	. .	46.5	. .	14.5	. .	. .	. .	11 14.45	15.95	0.00	V.	2	4.15	7 7.54	29.56	1.27	11 30.40	16 18.37
43	5	. .	. .	. .	. .	13.7	27.	41.5	12 59.93	15.94	0.00	VII.	8	10.26	39 11.36	29.58	4.41	13 15.87	48 25.35
44	10	. .	. .	. .	. .	. .	35.	49.5	15 6.93	15.93	−0.01	VII.	1	7.23	3 42.97	29.61	0.93	15 21.95	12 53.51
45	9	49.	3.	17.2	. .	. .	. .	. .	19 31.27	15.90	0.00	IV.	4	11.52	20 56.12	29.66	2.60	19 47.17	30 8.38
46	10	. .	. .	. .	3.	. .	30.5	45.	21 2.68	15.89	0.00	VII.	10	4.13	46 3.17	29.69	5.10	21 18.57	55 17.96
47	10	. .	14.3	28.5	. .	. .	. .	. .	26 42.57	15.87	0.00	IV.	7	3.36	30 46.32	29.80	3.57	26 58.44	39 59.69
48	7	. .	. .	. .	. .	15.	. .	42.5	28 0.56	15.86	0.00	VII.	7	8.22	33 10.13	29.82	3.81	28 16.42	42 23.76
49	9	. .	44.	58.	. .	26.	. .	. .	32 12.11	15.84	0.00	VII.	7	9.59	33 59.04	29.92	3.89	32 27.95	43 12.85
50	9	. .	. .	. .	57.7	12.	. .	39.5	37 57.54	15.80	0.00	VII.	6	11.35	29 47.45	30.08	3.46	38 13.34	39 0.99
51	7	. .	51.	5.1	19.2	33.5	. .	. .	46 19.31	15.76	0.00	VI.	9	8.52	43 23.18	30.37	4.84	46 35.07	52 38.39
52	6	. .	. .	54.	8.	22.	. .	. .	49 7.85	15.74	0.00	VI.	4	6.44	18 20.64	30.47	2.34	49 23.59	27 33.45
53	9	. .	2.3	17.	31.	. .	. .	. .	51 30.67	15.73	0.00	V.	3	4.45	12 21.77	30.56	1.76	51 46.40	21 34.09
54	6	. .	. .	. .	17.	. .	. .	. .	23 54 16.84	15.72	0.00	VI.	10	10.2	48 59.38	30.68	5.41	23 54 32.56	58 15.47
55	10	. .	. .	. .	28.8	. .	56.4	. .	0 3 28.45	15.68	0.00	VII.	9	5.25	41 38.57	31.11	4.67	0 3 44.13	50 54.35
56	8	. .	. .	. .	. .	. .	. .	25.4	4 43.10	15.67	0.00	VII.	7	6.41	32 19.20	31.17	3.73	4 58.77	41 34.10
57	10	. .	. .	. .	. .	. .	39.	53.5	14 11.01	15.63	0.00	VII.	5	7.4	23 29.70	31.69	2.95	14 26.64	32 44.24
58	9	. .	. .	17.	. .	. .	. .	. .	16 31.23	15.62	0.00	IV.	9	6.2	42 27.89	31.82	4.71	16 46.85	51 44.42
59	9	. .	. .	. .	. .	. .	. .	24.	16 41.74	15.62	0.00	VII.	8	3.28	35 40.57	31.83	4.06	16 57.36	44 56.46
60	8	. .	. .	. .	22.3	36.3	50.	. .	21 22.08	15.59	0.00	VII.	9	4.28	41 9.83	32.12	4.61	21 37.67	50 26.56
61	8	. .	. .	. .	30.3	44.5	. .	. .	26 30.27	15.57	0.00	VI.	6	4.2	25 59.25	32.47	3.10	28 45.84	35 14.82
62	7	. .	. .	. .	. .	. .	12.5	27.	36 44.45	15.53	0.00	VII.	2	12.45	11 24.34	33.22	1.66	36 59.98	20 39.22
63	10	. .	. .	. .	. .	16.	. .	45.	40 2.36	15.52	0.00	VII.	8	8.59	38 27.49	33.46	4.36	40 17.88	47 45.31
64	8	. .	. .	. .	. .	. .	. .	25.3	0 44 42.63	+15.50	0.00	VII.	1	7.19	− 3 40.96	−33.85	−0.90	0 44 58.13	−27 12 55.71

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(127) 22. Micrometer assumed as $4^{r}.30$ instead of $4^{r}.00$.
(127) 25. Transits over T.'s III, IV, V assumed as recorded over T.'s II, III, IV.
(127) 29. Transits over T.'s I, II, III assumed as recorded over T.'s III, IV, V, and minutes as 48 instead of 47.
(127) 34. Minutes of transit assumed as 46 instead of 43.
(127) 37. Minutes of transit assumed as 55 instead of 56.
(127) 39. Transit over T. II assumed as $23^{s}.2$ instead of $25^{s}.2$.
(127) 43. Transit observations very discordant.
(127) 58. Micrometer reading assumed as $7^{r}.2$ instead of $6^{r}.2$.
(127) 61. Minutes assumed as 28 instead of 26.

Zone 127. September 3. B. Belt, −27° 31′. D$_\circ$=−27 8° ′ 40″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
65	8	. .	59.	13.5	. .	41.	. .	. .	0 58 27.17	+15.45	0.00	VI.	5	5.35	−22 45.04	−35.06	−2.78	0 58 42.62	−27 32 2.88
66	10	. .	19.	33.2	47.4	. .	. .	. .	1 10 47.25	15.41	0.00	V.	7	1.43	29 49.29	36.27	3.47	1 11 2.66	39 9.03
67	10	. .	. .	. .	10.	24.3	. .	. .	13 10.01	15.40	0.00	VI.	5	5.46	22 50.59	36.53	2.78	13 25.41	32 9.90
68	10	. .	. .	. .	. .	. .	49.	3.5	14 20.98	15.40	0.00	VII.	4	5.53	17 54.69	36.65	2.27	14 36.38	27 13.61
69	7	. .	. .	28.	42.5	. .	. .	. .	20 42.30	15.38	0.00	VII.	9	10.17	44 5.82	37.33	4.93	20 57.68	53 28.08
70	8	. .	. .	. .	. .	. .	. .	25.4	22 43.14	15.37	0.00	VII.	7	13.12	35 36.35	37.62	4.05	22 58.51	44 58.02
71	8	. .	. .	. .	6.5	. .	34.	46.3	42 6.11	15.32	0.00	VII.	8	11.3	39 30.01	39.87	4.45	42 21.43	48 54.33
72	9	. .	. .	23.	. .	51.5	. .	. .	44 51.36	15.31	0.00	VI.	9	6.10	42 1.49	40.20	4.72	45 6.67	51 26.41
73	8	23.	37.2	52.	15.	. .	. .	. .	51 5.51	15.30	0.00	V.	3	6.54	13 26.82	41.04	1.85	51 20.81	22 49.71
74	8	. .	47.2	1.5	16.	. .	. .	. .	1 55 29.71	+15.29	0.00	V.	4	7.27	−18 42.45	−41.60	−2.38	1 55 45.00	−27 28 6.43

Zone 128. September 4. K. Belt, −28° 46′. D$_\circ$=−28° 22′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	50.7	. .	. .	. .	. .	19 36 4.97	+16.70	+0.01	III.	7	9.44	−33 51.83	−13.20	−3.93	19 36 21.68	−28 56 8.96
2	8	28.7	43.2	57.4	. .	. .	. .	. .	38 11.74	16.68	0.00	III.	6	10.2	29 0.91	12.90	3.42	38 28.42	28 51 17.23
3	9	. .	. .	38.8	. .	7.3	. .	. .	38 53.14	16.68	+0.01	V.	9	5.2	41 27.33	12.80	4.73	39 9.83	29 3 44.86
4	8	. .	. .	. .	. .	. .	0.9	. .	39 32.39	16.67	+0.02	VI.	10	6.0	46 57.34	12.70	5.34	39 49.08	29 9 15.38
5	9	7.2	21.8	. .	. .	. .	. .	. .	41 50.35	16.66	0.00	II.	6	7.41	27 49.66	12.39	3.34	42 7.01	28 50 5.39
6	9	. .	. .	0.4	14.8	. .	. .	. .	42 14.66	16.66	+0.01	IV.	7	9.31	33 45.32	12.33	3.90	42 31.33	56 1.55
7	9	. .	. .	. .	. .	. .	. .	5.4	42 22.56	16.66	0.00	VII.	6	12.33	30 16.67	12.31	3.55	42 39.22	52 32.53
8	9	. .	52.5	. .	21.2	. .	. .	. .	48 21.03	16.62	0.00	IV.	4	11.59	20 59.65	11.49	2.58	48 37.65	28 43 13.72
9	8	. .	. .	. .	. .	. .	. .	56.8	49 14.09	16.61	+0.01	VII.	8	13.48	40 53.18	11.37	4.68	49 30.71	29 3 9.23
10	8	. .	. .	. .	. .	. .	. .	44.7	51 1.89	16.60	+0.01	VII.	7	6.39	37 16.89	11.12	4.25	51 18.50	28 59 32.26
11	9	. .	. .	. .	36.2	50.4	. .	. .	52 36.05	16.59	−0.01	VI.	3	8.50	14 25.16	10.92	1.90	52 52.63	36 37.98
12	9	. .	. .	. .	. .	. .	39.8	. .	53 11.40	16.59	0.00	VI.	5	10.13	25 5.21	10.83	3.01	53 27.99	47 19.05
13	9	. .	. .	23.7	. .	52.3	. .	. .	54 37.72	16.58	−0.02	IV.	1	7.45	3 54.47	10.64	0.83	54 54.28	26 5.94
14	9	. .	. .	. .	. .	. .	45.9	. .	55 17.52	16.57	0.00	VI.	4	8.52	19 25.17	10.55	2.42	55 34.09	41 38.14
15	8	. .	39.1	53.4	. .	. .	. .	. .	57 7.59	16.56	0.00	IV.	5	10.57	25 27.59	10.31	3.05	19 57 24.15	47 40.95
16	7.8	. .	. .	32.6	. .	1.0	. .	. .	19 59 46.78	16.54	0.00	IV.	6	12.0	30 0.45	9.95	3.52	20 0 3.32	52 13.92
17	9	. .	. .	. .	. .	. .	51.8	. .	20 0 23.42	16.54	0.00	VI.	4	11.54	20 56.94	9.87	2.58	0 39.96	28 43 9.39
18	8	. .	. .	40.6	. .	8.9	. .	. .	1 54.88	16.53	+0.02	IV.	9	13.27	45 42.01	9.67	5.19	2 11.43	29 7 56.87
19	10	. .	. .	39.9	. .	. .	. .	. .	4 54.31	16.51	+0.01	III.	9	7.37	42 45.49	9.28	4.89	5 10.83	4 59.66
20	10	. .	. .	. .	. .	30.9	. .	. .	5 16.68	16.50	+0.01	V.	8	9.57	38 57.08	9.23	4.47	5 33.19	29 1 10.78
21	9	. .	. .	. .	. .	. .	24.2	38.7	5 55.83	16.50	+0.01	VI.	7	9.25	33 42.10	9.14	3.90	6 12.34	28 55 55.14
22	9	. .	2.2	16.3	. .	. .	. .	. .	8 30.44	16.48	−0.01	III.	3	6.38	13 18.74	8.81	1.79	8 46.91	35 29.34
23	10	. .	. .	. .	5.3	. .	. .	. .	9 5.14	16.48	−0.01	IV.	3	7.33	13 46.52	8.73	1.84	9 21.61	35 57.09
24	10	. .	30.1	. .	. .	. .	. .	. .	13 58.74	16.45	+0.01	II.	7	7.53	32 55.71	8.11	3.81	14 15.20	28 55 7.63
25	9	. .	12.4	. .	41.2	. .	. .	. .	14 41.03	16.44	0.00	IV.	6	11.5	29 32.72	8.02	3.47	14 57.47	29 51 44.21
26	7	. .	. .	44.3	. .	13.0	. .	. .	15 58.79	16.43	+0.02	VI.	10	5.15	46 34.64	7.86	5.28	16 15.24	29 8 47.78
27	9	. .	. .	. .	. .	24.2	. .	. .	17 9.97	16.43	+0.01	V.	8	3.15	35 34.37	7.71	4.11	17 26.41	28 57 46.19
28	7	. .	. .	. .	29.8	43.8	. .	. .	18 29.57	16.42	0.00	V.	5	5.48	22 51.72	7.54	2.78	18 45.99	45 2.04
29	9	8.5	22.8	. .	. .	. .	. .	. .	21 51.55	16.40	+0.01	II.	7	8.30	33 14.38	7.12	3.86	22 7.96	55 25.36
30	10	. .	. .	6.8	. .	. .	. .	. .	22 20.90	16.39	0.00	III.	5	6.45	23 20.33	7.06	2.84	22 37.29	45 30.23
31	9	. .	. .	. .	. .	. .	. .	5.0	22 21.93	16.39	+0.01	VII.	3	4.32	12 14.84	7.06	1.69	22 38.31	28 34 23.59
32	7	. .	. .	. .	. .	. .	. .	58.9	23 16.17	16.39	0.01	IX.	9	−0.15	44 2.29	6.95	5.02	23 32.57	29 6 14.36
33	8	. .	. .	. .	. .	. .	. .	11.5	25 28.82	16.37	0.01	VII.	9	9.56	43 55.21	6.68	5.00	25 45.20	29 6 6.89
34	7	. .	. .	24.6	38.8	. .	. .	. .	29 38.76	16.34	0.01	IV.	7	11.23	34 41.79	6.9	4.01	29 55.11	28 56 51.99
35	7	46.2	. .	14.9	. .	. .	. .	. .	20 31 29.38	+16.33	+0.01	IV.	9	6.51	−42 22.34	− 5.95	−4.84	20 31 45.72	−29 4 33.13

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
Sept. 4, 18	*s* 9.13	*g* 0.012			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°
Zone 128	Sept. 4, 9 5	30.038	82.8	78.

REMARKS.

(127) 71. Transit observations discordant. T. VII rejected.
(127) 72. Transits over T.'s II and IV assumed as recorded over T.'s III and IV.
(127) 74. Transits over T.'s I, II, III assumed as recorded over T.'s II, III, IV.
(128) 10. Hor. thread assumed as 8 instead of 7.
(128) 32, Hor. thread assumed as 10 instead of 9.

ZONE 128. SEPTEMBER 4. K. BELT, −28° 46′. D₀=−28° 22′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	7.8	. .	. .	. .	12.7	26.8	. .	. .	20 32 12.49	+16.32	−0.01	V.	2	8.31	− 9 16.62	− 5.87	−1.39	20 32 28.80	−28 31 23.88
37	9	. .	6.8	20.9	. .	. .	. .	. .	34 34.93	16.31	−0.02	III.	1	9.43	4 53.92	5.59	0.93	34 51.22	27 0.44
38	7	. .	. .	. .	14.2	28.5	. .	. .	35 14.12	16.30	0.00	IV.	5	4.43	22 19.00	5.51	2.72	35 30.42	28 44 27.23
39	9	. .	. .	. .	. .	32.3	. .	. .	36 18.11	16.30	+0.02	V.	10	7.3	47 29.24	5.39	5.40	36 34.43	29 9 40.03
40	9	. .	. .	. .	. .	. .	. .	37.3	36 54.54	16.29	+0.01	VII.	8	5.34	36 44.10	5.32	4.25	37 10.84	28 58 53.67
41	9	. .	51.8	. .	. .	. .	. .	. .	39 20.25	16.27	−0.01	III.	3	9.53	14 57.06	5.03	1.96	39 36.51	37 4.05
42	9	. .	39.8	. .	8.0	. .	. .	. .	40 8.14	16.27	0.00	IV.	7	5.33	31 45.31	4.93	3.70	40 24.41	53 53.94
43	9	. .	. .	55.1	. .	23.3	. .	. .	41 8.99	16.26	−0.01	IV.	3	3.14	11 35.92	4.82	1.62	41 25.24	33 42.36
44	7	. .	. .	. .	18.1	32.7	. .	. .	42 18.15	16.25	−0.01	VI.	2	11.53	10 58.33	4.69	1.56	42 34.39	33 4.58
45	9	. .	. .	. .	. .	. .	. .	46.1	43 3.33	16.25	+0.01	VII.	7	13.45	35 52.97	4.60	4.14	43 19.59	58 1.71
46	9	. .	. .	. .	. .	. .	. .	45.1	44 1.98	16.24	−0.01	VII.	2	5.57	12 57.69	4.49	1.76	44 18.21	35 3.94
47	6.7	. .	. .	. .	. .	. .	. .	33.2	44 50.07	16.24	−0.01	VII.	2	4.20	7 9.68	4.39	1.14	45 6.30	28 29 15.21
48	8	. .	. .	. .	. .	. .	18.2	. .	45 49.72	16.23	+0.01	VII.	9	4.32	41 11.84	4.28	4.71	46 5.96	29 3 20.83
49	9	20.8	35.2	. .	. .	. .	. .	. .	48 3.90	16.21	+0.01	II.	7	7.19	32 38.57	4.02	3.80	48 20.12	28 54 46.39
50	10	43.1	. .	. .	. .	. .	. .	. .	49 26.20	16.20	0.00	I.	6	5.41	26 48.92	3.87	3.17	49 42.40	48 55.96
51	9	47.0	1.6	. .	. .	. .	. .	. .	51 30.19	16.19	0.00	II.	7	5.54	31 55.71	3.63	3.72	51 46.38	54 3.06
52	9	. .	. .	. .	43.5	. .	. .	. .	51 43.34	16.19	0.00	V.	6	4.54	26 25.60	3.61	3.15	51 59.53	48 32.36
53	10	. .	. .	. .	. .	. .	38.7	. .	52 10.31	16.18	0.00	VII.	5	6.15	23 4.97	3.56	2.79	52 26.49	45 11.32
54	9	37.9	52.5	. .	. .	. .	. .	. .	54 20.83	16.17	−0.01	II.	2	5.5	7 32.60	3.31	1.18	54 36.99	28 29 37.09
55	10	. .	. .	34.2	. .	. .	. .	. .	55 48.61	16.16	+0.01	IV.	9	8.7	43 0.67	3.13	4.91	56 4.78	29 5 8.71
56	10	. .	36.9	51.6	. .	. .	. .	. .	57 5.45	16.15	−0.01	IV.	3	8.40	14 20.31	3.01	1.88	57 21.59	28 36 25.20
57	9	. .	. .	. .	. .	55.3	. .	. .	57 41.09	16.14	+0.01	V.	9	3.27	40 39.42	2.94	4.67	20 57 57.24	29 2 47.03
58	6.7	. .	. .	. .	44.8	58.7	. .	. .	20 59 44.56	+16.13	+0.01	VI.	9	6.51	−42 22.15	− 2.71	−4.85	21 0 0.70	−29 4 29.71

ZONE 129. SEPTEMBER 6. B. BELT, −25° 39′. D₀=−25° 15′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	25.5	39.	53.	. .	. .	. .	20 6 52.92	+15.95	0.00	V.	5	4.2	−23 59.30	−24.79	−2.91	20 7 8.87	−25 39 27.00
2	11	. .	. .	. .	. .	6.	19.7	34.	8 52.10	15.94	−0.01	VII.	3	5.56	12 57.25	24.48	2.02	9 8.03	28 23.75
3	8	. .	. .	. .	. .	. .	57.5	11.	10 29.60	15.93	0.00	VII.	6	3.32	25 43.96	24.22	3.06	10 45.53	41 11.24
4	9	. .	14.	28.2	. .	. .	. .	. .	13 41.66	15.91	−0.01	IV.	2	7.28	8 44.89	23.73	1.68	13 57.56	24 10.30
5	9	. .	. .	. .	. .	. .	. .	43.	17 1.10	15.89	−0.01	VII.	2	10.50	10 26.40	23.22	1.81	17 16.98	25 51.43
6	11	. .	. .	. .	. .	. .	21.	35.4	18 53.50	15.88	0.00	VII.	4	8.58	19 28.02	22.93	2.57	19 9.38	34 53.52
7	10	. .	. .	. .	. .	. .	. .	12.3	20 30.36	15.87	−0.02	VII.	2	3.54	6 56.63	22.68	1.52	20 46.21	22 20.83
8	9	. .	. .	. .	. .	. .	40.5	55.	22 13.04	15.85	−0.01	VII.	4	2.00	15 57.25	22.43	2.22	22 28.88	31 21.90
9	6	. .	. .	. .	. .	54.	7.5	22.	23 40.03	15.84	−0.01	VII.	3	2.55	11 25.98	22.21	1.87	23 55.86	26 50.06
10	10	. .	. .	. .	. .	. .	. .	38.5	25 57.03	15.83	+0.02	VII.	9	10.24	44 9.39	21.87	4.59	26 12.88	59 35.85
11	6	58.	12.2	26.2	. .	. .	. .	. .	28 39.89	15.81	0.00	IV.	5	4.31	22 12.95	21.47	2.76	28 55.70	37 37.18
12	8	. .	. .	23.	. .	51.	. .	. .	29 36.95	15.80	0.00	VI.	6	7.31	27 44.65	21.33	3.26	29 52.75	43 9.24
13	7	57.	11.2	. .	. .	. .	. .	. .	31 38.86	15.79	−0.01	IV.	4	8.20	19 9.22	21.03	2.47	31 54.64	34 32.72
14	9	9.	. .	. .	. .	. .	. .	. .	36 50.85	15.76	0.00	II.	5	6.42	23 18.85	20.28	2.87	37 6.61	38 42.00
15	4	. .	. .	. .	. .	10.2	24.	38.	36 56.37	15.76	+0.01	VII.	7	8.5	33 1.60	20.27	3.70	37 12.14	48 25.57
16	6	41.5	55.	9.	. .	. .	. .	. .	41 22.97	15.73	−0.01	IV.	3	13.5	16 33.92	19.63	2.31	41 38.69	31 55.86
17	10	. .	. .	48.	2.2	16.2	. .	. .	47 2.06	15.69	0.00	VI.	7	2.40	30 17.92	18.84	3.46	47 17.75	45 40.22
18	9	. .	. .	. .	. .	50.5	4.	18.2	48 36.43	15.68	−0.01	VII.	3	4.21	12 9.34	18.62	2.00	48 52.10	27 29.96
19	8	. .	. .	13.3	27.3	40.5	. .	. .	53 26.85	15.65	−0.01	VI.	3	6.40	12 18.94	17.95	2.01	53 42.49	27 38.90
20	4	23.3	37.5	51.2	. .	. .	. .	. .	57 5.07	15.62	0.00	IV.	4	11.32	20 46.04	17.46	2.64	20 58 20.69	36 6.14
21	9	. .	. .	54.5	. .	21.5	34.	. .	21 0 7.32	15.60	−0.01	VII.	2	5.49	7 54.62	17.04	1.59	21 0 22.91	23 13.25
22	8	. .	. .	. .	20.	34.	. .	. .	21 1 59.94	+15.59	−0.01	VII.	2	11.37	−10 50.10	−16.75	−1.81	21 2 15.52	−25 26 8.66

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Sept. 6,	18	s 8.71	g 0.015	+ 0.113	+ 0.053	0.000

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1847.	h. m.	in.	°	°
Zone 129	Sept. 6,	9 5	30.100	76.5	69.

REMARKS.

(128) 46. Hor. thread assumed as 3 instead of 2.
(129) 1. Micrometer reading assumed as 8ʳ.2 instead of 4ʳ.2, to agree with Arg. 239, 105.
(129) 19. Micrometer reading assumed as 4ʳ.40 instead of 6ˢ.40.
(129) 20. Minutes assumed as 58 instead of 59.
(129) 22. Transits over T.'s IV and V assumed as 0ˢ and 14ˢ instead of 20ˢ and 34ˢ, and minutes as 1 instead of 2.

ZONE 129. SEPTEMBER 6. B. BELT, −25° 39′. D_0=−25° 15′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	8	. .	. .	4.0	18.	. .	. .	. .	21 4 17.70	+15.57	−0.01	VI.	3	4.30	−12 14.09	−16.50	−1.92	21 4 33.26	−25 27 32.51
24	10	52.	6.5	. .	. .	. .	. .	. .	9 34.04	15.54	0.00	IV.	5	5.40	23 48.24	15.81	2.81	9 49.58	39 6.86
25	9	. .	. .	18.	31.5	45.	. .	. .	12 31.27	15.52	−0.01	VI.	1	10.18	5 11.46	15.43	1.35	12 46.78	20 28.24
26	7	6.	29.	43.2	57.	. .	. .	. .	14 56.93	15.51	+0.01	V.	7	12.12	35 6.46	15.13	3.89	15 12.45	50 25.48
27	8	8.	22.	36.	. .	. .	. .	. .	16 49.94	15.50	+0.01	IV.	8	7.6	37 30.91	14.88	4.08	17 5.45	52 49.87
28	10	. .	. .	12.	26.	. .	. .	. .	19 25.83	15.47	0.00	V.	6	10.48	29 24.11	14.55	3.39	19 41.30	44 42.05
29	8	. .	2.	16.2	30.	. .	. .	. .	21 29.94	15.46	+0.01	V.	8	3.4	35 28.83	14.30	3.92	21 45.41	50 47.05
30	8	. .	. .	. .	44.	. .	. .	. .	22 43.85	15.45	0.01	V.	9	6.18	42 5.66	14.14	4.45	22 59.31	57 24.25
31	11	. .	. .	34.5	48.7	. .	. .	. .	24 48.50	15.44	0.01	V.	8	9.15	38 35.91	13.89	4.15	25 3.95	53 53.95
32	9	. .	. .	. .	. .	36.	49.2	3.	26 21.72	15.43	+0.01	VII.	8	9.35	43 44.66	13.70	4.65	26 37.16	59 3.01
33	11	. .	. .	32.	46.	. .	. .	. .	28 45.80	15.42	0.00	V.	5	11.34	25 46.21	13.40	3.07	29 1.22	41 2.68
34	10	. .	34.	48.	. .	. .	. .	. .	31 1.91	15.40	+0.01	IV.	8	8.58	38 27.38	13.13	4.16	31 17.32	53 44.67
35	7	. .	26.3	40.5	54.5	. .	. .	. .	32 54.27	15.39	0.00	V.	7	5.13	31 35.18	12.91	3.55	33 9.66	46 51.64
36	8	59.7	. .	28.	42.	. .	. .	. .	35 41.68	15.37	0.00	V.	4	10.26	20 12.72	12.58	2.59	35 57.05	35 27.89
37	8	41.3	55.5	. .	23.3	. .	. .	. .	37 23.13	15.36	−0.01	VI.	3	10.5	15 3.17	12.39	2.16	37 38.48	30 17.72
38	9	. .	. .	. .	. .	. .	36.5	50.5	38 8.86	15.35	0.00	VII.	7	1.40	29 47.46	12.30	3.42	38 24.21	45 33.42
39	10	. .	35.5	49.5	4.	. .	. .	. .	41 3.53	15.33	+0.01	VI.	8	2.00	35 26.70	11.96	3.86	41 18.87	25 50 52.52
40	10	. .	. .	. .	. .	48.	0.5	. .	43 34.50	15.32	+0.02	VI.	10	9.58	48 57.37	11.68	5.07	43 49.84	26 4 14.12
41	10	. .	15.	29.	. .	. .	. .	. .	46 42.79	15.30	0.00	IV.	6	8.5	28 1.96	11.32	3.27	46 58.09	25 43 16.55
42	9	45.5	. .	14.	. .	. .	. .	. .	52 27.60	15.26	0.00	IV.	6	8.42	28 20.62	10.69	3.30	52 42.86	43 34.61
43	9	. .	. .	. .	. .	. .	23.5	37.5	52 55.81	15.26	0.00	VII.	4	9.45	19 51.72	10.64	2.56	53 11.07	35 4.92
44	8	. .	. .	. .	6.2	. .	34.	48.	55 6.22	15.24	0.00	VII.	4	7.54	18 55.75	10.40	2.48	55 21.46	34 8.63
45	11	. .	. .	. .	5.	19.2	33.2	. .	21 59 5.24	15.22	−0.01	VII.	2	10.42	10 22.37	9.99	1.77	21 59 20.45	25 34.13
46	9	32.	46.	. .	. .	. .	. .	. .	22 2 13.68	15.20	−0.01	IV.	2	11.15	11 39.86	9.67	1.84	22 2 28.87	26 51.37
47	6	. .	35.	49.	3.	. .	. .	. .	5 2.91	15.18	+0.01	VI.	8	12.8	40 3.02	9.39	4.28	5 18.10	55 16.69
48	10	. .	. .	25.2	39.	53.	. .	. .	6 38.99	15.17	0.00	VI.	6	9.18	28 30.60	9.23	3.23	6 54.16	43 51.06
49	12	. .	. .	. .	3.6	17.5	30.5	45.	11 3.25	15.14	−0.01	VII.	2	6.21	8 10.75	8.79	1.58	11 18.38	23 21.12
50	12	. .	. .	. .	. .	. .	. .	18.7	12 37.15	15.13	+0.01	VII.	8	7.25	37 40.12	8.65	4.09	12 52.29	52 52.86
51	5	. .	. .	. .	. .	7.5	21.	35.2	14 53.45	15.12	0.00	VII.	4	2.4	15 59.27	8.44	2.25	15 8.57	31 9.96
52	12	. .	. .	. .	10.2	. .	37.5	51.5	29 9.96	15.03	+0.01	VII.	9	4.57	41 24.50	7.17	4.42	29 25.00	56 36.09
53	6	. .	. .	. .	3.	16.5	30.	44.	37 2.60	14.98	+0.01	VII.	10	4.41	40 17.33	6.54	4.29	37 17.59	55 28.16
54	9	52.	6.2	20.5	45.7	. .	. .	. .	40 34.06	14.96	0.00	V.	6	7.1	27 29.64	6.27	3.23	40 49.02	42 39.14
55	8	12.	26.	40.	. .	. .	. .	. .	45 53.87	14.92	0.00	IV.	7	5.16	31 36.74	5.89	3.58	46 8.79	46 46.21
56	5	0.8	15.	29.	43.2	. .	. .	. .	51 42.96	14.89	0.00	V.	9	7.20	42 36.92	5.49	4.52	51 57.85	57 46.93
57	10	. .	. .	. .	. .	. .	. .	3.5	52 21.89	14.89	0.00	VII.	7	6.46	32 21.77	5.45	3.65	52 36.78	47 30.87
58	10	. .	. .	. .	. .	. .	. .	33.2	22 53 51.66	14.88	0.00	VII.	8	9.31	38 43.66	5.36	4.19	22 54 6.54	53 53.21
59	9	27.	41.2	55.5	. .	. .	. .	. .	23 13 9.05	14.77	0.00	IV.	6	5.5	26 31.19	4.27	3.13	23 13 23.82	41 38.59
60	8	. .	. .	47.5	1.4	15.	. .	. .	15 0.77	14.76	0.00	VI.	3	0.18	10 7.01	4.18	1.73	15 15.53	25 12.92
61	11	. .	. .	31.	. .	59.	. .	. .	23 44.76	14.71	0.00	VI.	2	6.36	8 18.53	3.80	1.67	23 59.47	23 24.00
62	8	. .	23.3	37.5	51.4	. .	. .	. .	25 51.20	14.70	0.00	V.	6	4.22	26 9.47	3.72	3.10	26 5.90	41 16.29
63	8	3.	17.	31.1	45.2	. .	. .	. .	29 44.95	14.68	0.00	V.	6	6.33	27 18.53	3.56	3.20	29 59.63	42 22.29
64	12	. .	. .	. .	58.5	12.5	26.3	. .	32 58.55	14.67	0.00	VII.	9	7.18	42 35.59	3.45	4.53	33 13.22	57 43.57
65	10	. .	. .	40.	54.2	8.	21.5	. .	35 53.92	14.65	0.00	VII.	4	11.21	20 40.12	3.36	2.62	36 8.57	35 46.10
66	10	. .	. .	9.	23.2	37.	. .	. .	39 22.83	14.63	−0.01	VI.	1	7.14	3 38.68	3.25	1.19	39 37.45	18 43.12
67	6	. .	12.4	26.5	41.	. .	. .	. .	44 40.49	14.61	0.00	V.	7	10.8	34 3.94	3.12	3.79	44 55.10	49 10.85
68	4	49.	3.2	17.3	31.4	. .	. .	. .	48 30.98	14.59	0.00	V.	4	8.27	19 12.71	3.03	2.48	48 45.57	34 18.22
69	9	4.5	. .	33.	47.	0.5	14.	28.2	51 46.50	14.57	0.00	VII.	3	7.31	13 45.15	2.96	2.01	52 1.07	28 50.12
70	8	. .	. .	0.5	14.	28.	. .	. .	55 13.97	14.55	0.00	VI.	2	10.42	10 22.57	2.91	1.75	55 28.52	25 27.23
71	9	. .	. .	31.5	45.5	59.3	. .	. .	23 58 45.25	+14.54	0.00	VI.	2	14.3	−12 3.90	− 2.85	−1.89	23 58 59.79	−25 27 8.64

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(129) 24. Micrometer reading assumed as $7^r.40$ instead of $5^r.40$.
(129) 32. Hor. thread assumed at 9 instead of 8.
(129) 39. Micrometer reading assumed as $3^r.00$ instead of $2^r.00$.
(129) 46. Micrometer reading assumed as $13^r.15$ instead of $11^r.15$.
(129) 56. Transit over T. I assumed as at $0^s.8$ instead of $10^s.8$.

ZONE 129. SEPTEMBER 6. B. BELT, −25° 39′. D₀=−25° 15′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	8	26.8	. .	54.5	9.	. .	. .	. .	0 12 8.73	+14.48	0.00	V.	9	6.1	−41 57.09	− 2.76	−4.48	0 12 23.21	−25 57 4.33
73	9	. .	. .	31.5	45.5	. .	. .	. .	13 45.40	14.46	0.00	VI.	8	10.48	39 22.69	2.76	4.26	13 59.86	54 29.71
74	10	. .	. .	31.3	45.4	59.2	13.2	. .	17 45.33	14.45	0.00	VI.	7	8.6	33 2.31	2.77	3.70	17 59.78	48 8.78
75	10	. .	. .	54.2	7.8	21.6	35.	49.2	20 7.63	14.44	0.00	VII.	5	11.31	25 44.37	2.77	3.07	20 22.07	40 50.21
76	10	. .	. .	. .	. .	. .	. .	12.	21 30.36	14.44	0.00	VII.	6	12.28	30 14.20	2.78	3.46	21 44.80	45 20.44
77	9	0.6	14.5	. .	. .	. .	12.	26.4	23 42.40	14.43	0.00	VII.	7	11.24	34 41.94	2.80	3.85	23 56.83	49 48.59
78	8	. .	. .	. .	. .	. .	. .	. .	26 44.53	14.41	0.00	III.	5	12.45	26 22.00	2.83	3.12	26 58.94	41 27.95
79	8	. .	. .	. .	. .	21.5	35.5	. .	28 7.75	14.41	0.00	VII.	6	6.21	27 9.15	2.84	3.19	28 22.16	42 15.18
80	5	. .	. .	. .	. .	20.	34.	48.4	31 6.46	14.40	0.00	VII.	9	3.46	40 48.72	2.88	4.39	31 20.86	55 55.99
81	10	. .	. .	. .	. .	. .	. .	52.	32 10.43	14.39	0.00	VII.	8	4.16	36 4.83	2.90	3.98	32 24.82	51 11.71
82	9	. .	. .	. .	. .	16.5	30.6	44.2	34 2.76	14.38	0.00	VII.	4	9.52	19 55.25	2.93	2.56	34 17.14	35 0.74
83	9	. .	52.4	. .	20.	34.	. .	. .	36 20.04	14.37	0.00	VI.	5	12.58	26 28.43	2.97	3.13	36 34.41	41 34.53
84	10	. .	. .	10.8	24.5	38.3	52.	. .	40 24.52	14.36	0.00	VII.	8	9.30	38 43.16	3.05	4.20	40 38.88	54 20.41
85	7	54.1	8.3	22.4	36.	. .	. .	. .	45 35.97	14.34	0.00	V.	4	11.9	20 34.40	3.18	2.61	45 50.31	35 40.19
86	9	. .	. .	. .	. .	. .	51.	5.4	46 23.59	14.33	0.00	VII.	8	4.40	36 16.93	3.21	3.99	46 37.92	51 24.13
87	11	. .	. .	. .	. .	49.5	3.	17.3	51 35.56	14.32	0.00	VII.	7	4.39	31 17.73	3.35	3.55	51 49.88	46 24.63
88	11	. .	. .	. .	34.	48.3	1.5	15.4	53 33.93	14.31	0.00	VII.	4	6.35	18 15.92	3.42	2.41	53 48.24	33 21.75
89	11	. .	. .	55.	9.5	23.4	37.	51.2	0 59 9.38	14.29	0.00	VII.	9	4.29	41 10.38	3.60	4.45	0 59 23.67	56 18.43
90	12	. .	. .	. .	. .	11.5	25.	39.5	1 2 57.61	14.29	0.00	VII.	6	6.45	27 21.26	3.75	3.21	1 3 11.89	42 28.22
91	9	22.7	37.	51.	5.	. .	. .	. .	13 4.74	14.25	0.00	V.	6	9.59	28 59.40	4.19	3.35	12 18.99	44 6.94
92	8	. .	. .	. .	23.	36.5	50.	4.	13 22.58	14.25	0.00	VII.	8	8.40	38 17.95	4.20	4.19	13 36.83	53 26.34
93	8	. .	39.4	54.	8.	21.6	. .	. .	18 7.54	14.23	0.00	VI.	3	9.30	15 45.87	4.43	2.18	18 21.77	30 52.48
94	12	. .	. .	. .	. .	. .	24.	38.	19 56.32	14.22	0.00	VII.	4	13.59	21 59.79	4.52	2.74	20 10.54	37 7.05
95	7	. .	. .	. .	. .	. .	54.	8.5	21 26.56	14.22	0.00	VII.	4	8.55	19 26.51	4.60	2.51	21 40.78	34 33.62
96	9	10.	24.3	38.4	52.5	. .	. .	. .	29 52.17	14.20	0.00	V.	7	6.45	31 51.32	5.07	3.60	30 6.37	47 0.99
97	8	. .	. .	19.4	33.	47.	. .	. .	31 33.07	14.20	0.00	VI.	7	6.13	32 5.32	5.18	3.62	31 47.27	47 14.12
98	5	. .	. .	9.	23.	37.	50.	4.2	38 22.76	14.17	0.00	VII.	7	8.18	33 8.15	5.62	3.72	38 36.93	48 17.49
99	10	. .	41.	55.	9.	. .	. .	. .	45 8.84	14.16	0.00	V.	7	6.26	32 12.00	6.09	3.62	45 23.00	47 21.71
100	8	11.	25.6	40.	. .	. .	. .	. .	47 53.30	14.15	0.00	IV.	5	5.16	22 35.64	6.29	2.79	48 7.45	25 37 44.72
101	9	. .	. .	52.5	6.5	20.2	. .	. .	49 6.43	14.15	−0.01	VI.	10	3.40	45 46.77	6.38	4.87	49 20.57	26 0 58.02
102	12	. .	. .	. .	56.	9.5	. .	. .	53 55.75	14.14	0.00	VII.	7	9.32	33 45.47	6.75	3.79	54 9.89	25 48 56.01
103	11	37.5	51.5	5.4	. .	. .	. .	. .	1 59 19.07	14.13	+0.01	IV.	2	7.9	8 35.32	7.18	1.55	1 59 33.21	23 44.05
104	10	. .	. .	. .	. .	20.3	34.	48.4	2 1 6.42	14.13	+0.01	VII.	2	8.43	9 22.36	7.32	1.61	2 1 20.56	24 31.29
115	12	. .	. .	. .	. .	. .	15.	29.3	2 47.51	14.12	0.00	VII.	6	8.33	28 15.72	7.47	3.28	3 1.63	43 26.47
106	9	50.	4.2	18.	. .	. .	. .	. .	6 31.74	14.12	+0.01	IV.	3	9.11	14 35.93	7.79	2.06	6 45.87	29 45.78
107	9	. .	15.	29.4	43.2	. .	. .	. .	8 42.89	14.11	0.01	V.	3	6.40	13 19.76	7.98	1.98	8 57.01	28 29.72
108	10	. .	. .	. .	. .	. .	. .	30.	9 48.03	14.11	+0.01	VII.	1	9.17	4 40.50	8.07	1.21	10 2.15	19 49.78
109	11	. .	. .	32.	46.	59.	. .	. .	12 45.69	14.11	−0.01	VII.	9	9.3	43 28.54	8.35	4.67	12 59.79	58 41.56
110	10	. .	43.	57.	11.	. .	. .	. .	? 10.89	14.10	−0.01	V.	8	7.41	37 48.51	8.57	4.15	15 24.98	53 1.23
111	11	. .	. .	. .	. .	. .	17.	31.5	21 49.58	14.10	0.00	VII.	5	8.20	24 8.06	9.20	2.92	22 3.68	39 20.18
112	7	. .	. .	. .	. .	. .	. .	56.	23 14.43	14.10	−0.01	VII.	8	4.8	36 0.79	9.34	3.99	23 28.52	51 14.12
113	10	. .	. .	38.	52.	5.8	19.	. .	26 51.74	14.09	0.00	VII.	6	10.17	29 8.16	9.71	3.36	27 5.83	44 21.23
114	9	10.3	24.5	38.7	. .	. .	. .	. .	29 52.29	14.09	0.00	IV.	5	10.37	25 27.59	10.01	3.04	30 6.38	25 40 40.64
115	10	. .	26.	40.2	54.	. .	. .	. .	31 54.02	14.09	−0.01	V.	10	4.34	45 43.86	10.22	4.82	32 8.10	26 0 58.90
116	10	. .	. .	1.3	. .	. .	. .	. .	35 15.29	14.08	0.01	IV.	9	5.40	41 46.54	10.58	4.51	35 29.36	25 57 1.63
117	10	. .	. .	. .	. .	. .	. .	32.	35 50.51	14.08	−0.01	VII.	9	7.3	42 28.03	10.64	4.54	36 4.58	57 43.21
118	9	. .	. .	. .	. .	41.	54.5	9.4	37 27.18	14.08	+0.01	VII.	3	8.20	14 9.86	10.81	2.02	37 41.27	29 22.69
119	7	. .	. .	. .	. .	. .	. .	57.	39 15.51	14.08	−0.01	VII.	9	7.26	42 39.63	11.01	4.60	39 29.58	57 55.24
120	8	. .	. .	. .	. .	17.	30.5	45.	2 41 3.03	+14.08	+0.01	VII.	2	10.30	−10 16.32	−11.20	−1.67	2 41 17.12	−25 25 29.19

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(129) 77. Transit observations upon T.'s VI and VII assumed to belong to following star.
(129) 91. Minutes assumed as 12 instead of 13.
(129) 93. Micrometer reading assumed as 11ʳ.30 instead of 9ʳ.30.
(129) 96. Micrometer reading assumed as 5ʳ.45 instead of 6ʳ.45.
(129) 110. Minutes assumed as 15.
(129) 115. Micrometer reading assumed as 3ʳ.34 instead of 4ʳ.34.

ZONE 129. SEPTEMBER 6. B. BELT, −25° 39′. D$_\circ$=−25° 15′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
121	12	26.2	. .	55.	. .	. .	. .	. .	2 45 8.38	+14.07	0.00	IV.	5	7.25	−23 40.68	−11.66	−2.88	2 45 22.45	−25 38 55.22
122	7	57.6	11.5	25.5	. .	. .	. .	. .	48 39.48	14.07	−0.01	IV.	8	10.46	39 21.85	12.06	4.30	48 53.54	54 38.21
123	7.8	41.	55.2	9.3	23.	. .	. .	. .	50 22.88	14.07	0.00	V.	4	9.3	19 30.86	12.25	2.52	50 36.95	34 45.63
124	6	17.5	31.5	45.7	. .	. .	. .	. .	52 45.44	14.07	−0.01	V.	8	6.42	37 18.77	12.56	4.13	52 59.50	52 35.46
125	12	. .	. .	. .	. .	. .	15.5	30.	53 48.09	14.07	0.00	VII.	5	10.1	24 58.99	12.66	3.00	54 2.16	40 14.65
126	11	. .	. .	51.	5.	19.	32.5	. .	? 4.86	14.07	+0.01	VII.	4	5.20	17 38.09	12.93	2.34	56 18.94	32 53.36
127	11	. .	42.	56.	10.2	. .	. .	. .	2 59 9.88	+14.07	0.00	V.	6	9.5	−28 32.17	−13.29	−3.31	2 59 23.95	−25 43 48.77

ZONE 130. SEPTEMBER 13. B. BELT, −31° 16′. D$_\circ$=−30° 51′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	49.	4.	. .	. .	. .	. .	20 6 18.28	+12.52	−0.01	IV.	4	3.00	−16 27.86	−16.53	−1.87	20 6 30.79	−31 8 26.26
2	9	. .	. .	. .	. .	38.	52.3	7.	7 23.26	12.51	+0.02	VII.	10	7.32	47 43.45	16.39	6.15	7 35.79	39 45.99
3	9	10.4	25.4	. .	. .	. .	. .	. .	10 54.76	12.48	+0.01	III.	8	3.57	35 55.55	15.94	4.49	11 7.25	27 55.98
4	11	. .	. .	13.	28.	. .	. .	. .	12 27.64	12.47	0.00	V.	5	3.56	21 55.25	15.75	2.58	12 40.11	31 13 53.58
5	8	. .	9.5	24.5	. .	53.3	. .	. .	14 38.61	12.45	−0.02	VI.	2	2.16	6 7.37	15.49	0.47	14 51.04	30 58 3.33
6	8	. .	39.	53.5	8.2	. .	. .	. .	17 8.04	12.43	−0.01	V.	4	5.16	17 36.39	15.19	2.02	17 20.46	31 9 33.60
7	7	. .	. .	. .	. .	27.	41.3	56.	18 12.25	12.42	0.00	VII.	6	8.8	28 3.00	15.06	3.42	18 24.67	20 1.48
8	10	52.	7.	22.	. .	. .	. .	. .	21 36.25	12.40	0.00	IV.	4	10.40	20 19.82	14.66	2.35	21 48.65	12 16.83
9	11	27.8	42.5	57.5	. .	. .	. .	. .	23 11.78	12.38	−0.01	IV.	3	9.53	14 57.11	14.48	1.66	23 24.15	6 53.25
10	10	32.	47.	. .	. .	. .	. .	. .	25 16.21	12.37	0.00	III.	5	7.7	23 31.56	14.24	2.79	25 28.58	15 28.59
11	9	. .	. .	54.	. .	23.	. .	. .	26 8.34	12.36	−0.01	VI.	4	3.3	16 42.78	14.15	1.87	26 20.69	8 38.80
12	8	. .	. .	. .	. .	. .	. .	12.	26 27.84	12.36	−0.01	VII.	3	3.34	11 45.54	14.11	1.22	26 40.19	3 40.82
13	9	. .	12.	27.	. .	. .	. .	. .	28 41.29	12.34	−0.01	IV.	3	5.24	12 41.47	13.86	1.36	28 53.62	4 36.69
14	10	. .	. .	55.	9.8	24.	. .	. .	30 9.56	12.33	+0.01	VI.	7	11.46	34 53.19	13.69	4.39	30 21.90	26 51.27
15	9	. .	21.2	36.	50.6	. .	. .	. .	32 50.37	12.31	−0.01	V.	3	6.52	13 25.80	13.41	1.45	33 2.67	5 20.66
16	9	1.5	17.3	. .	. .	. .	. .	. .	35 46.27	12.29	+0.01	IV.	8	6.56	37 25.87	13.10	4.75	35 58.57	29 23.72
17	7	. .	. .	. .	. .	. .	28.	43.3	35 59.03	12.28	−0.01	VII.	2	8.17	9 9.14	13.08	0.87	36 11.30	1 3.09
18	10	. .	. .	. .	. .	. .	11.4	26.5	37 42.38	12.27	0.00	VII.	5	6.51	23 23.07	12.89	2.78	37 54.65	15 18.74
19	11	. .	. .	. .	. .	. .	13.	28.	39 43.92	12.25	0.00	VII.	5	3.15	21 34.15	12.68	2.52	39 56.17	31 13 29.35
20	11	. .	. .	. .	. .	. .	23.	38.5	40 54.12	12.24	−0.02	VII.	2	3.32	6 45.43	12.56	0.57	41 6.34	30 58 38.56
21	8	. .	. .	. .	51.	5.4	19.5	34.5	42 50.59	12.23	−0.01	VII.	4	6.47	23 21.07	12.37	2.77	43 2.81	31 15 16.21
22	7	. .	. .	. .	. .	. .	30.5	46.	44 1.68	12.21	0.00	VII.	5	9.49	24 52.83	12.25	2.98	44 13.89	16 48.06
23	9	. .	. .	0.5	15.3	29.3	. .	. .	46 15.00	12.19	+0.01	VI.	8	3.35	35 44.30	12.02	4.56	46 27.20	27 40.82
24	12	. .	. .	40.	54.5	. .	. .	. .	48 54.37	12.17	−0.01	V.	4	8.54	19 26.32	11.76	2.24	49 6.53	11 20.32
25	8	. .	. .	. .	5.	20.	34.5	49.2	51 5.15	12.15	−0.01	VII.	3	6.52	13 25.38	11.55	1.43	51 17.29	5 18.36
26	10	34.	49.	4.	. .	. .	. .	. .	53 18.26	12.13	0.00	IV.	6	12.13	30 7.00	11.34	3.72	53 30.39	22 2.06
27	12	. .	. .	. .	. .	36.5	51.	6.	54 21.91	12.13	0.00	VII.	5	13.9	26 33.67	11.24	3.22	54 34.04	18 28.13
28	10	. .	. .	38.3	53.2	. .	. .	. .	56 53.08	12.10	−0.02	V.	10	3.59	45 56.46	11.00	5.92	57 5.16	37 53.38
29	8	. .	8.5	23.5	. .	. .	. .	. .	58 38.19	12.09	−0.02	IV.	10	7.27	47 41.39	10.83	6.15	20 58 50.26	39 38.37
30	11	. .	. .	. .	48.5	2.5	17.	. .	20 59 48.02	12.08	+0.01	VII.	8	4.1	35 57.15	10.72	4.53	21 0 0.11	27 52.40
31	8	. .	22.5	37.4	52.5	. .	. .	. .	21 2 51.96	12.05	0.00	VI.	4	9.51	19 54.89	10.44	2.32	3 4.01	11 47.65
32	9	31.4	47.	1.5	. .	. .	. .	. .	5 16.03	12.03	0.00	IV.	6	13.1	30 31.20	10.23	3.77	5 28.06	22 25.20
33	8	. .	. .	. .	. .	. .	. .	30.	5 46.23	12.03	−0.01	VII.	9	10.7	44 0.71	10.19	5.66	5 58.25	35 56.56
34	7	. .	. .	57.	12.	26.5	. .	. .	8 11.77	12.01	0.00	VI.	6	12.26	30 13.35	9.97	3.75	8 23.78	22 7.07
35	9	19.	34.	49.	. .	. .	. .	. .	11 3.52	11.98	−0.01	IV.	9	4.50	41 21.33	9.72	5.26	11 15.49	33 16.31
36	8	. .	. .	. .	. .	58.	. .	27.	11 43.29	11.98	−0.01	VII.	9	1.52	39 51.10	9.67	5.07	11 55.26	31 45.84
37	9	. .	. .	. .	50.6	5.4	19.5	34.	13 50.42	11.96	+0.01	VII.	8	1.37	35 14.79	9.49	4.37	14 2.39	27 8.65
38	8	48.	2.3	17.3	. .	. .	. .	. .	21 17 31.73	+11.93	−0.01	IV.	4	1.20	−16 7.68	− 9.22	−1.73	21 17 43.65	−31 7 58.63

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h. Sept. 13, 18	s. *s* 5.14	s. *g* 0.022	s. − 0.006	s. + 0.251	s. 0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
Zone 130	1847. h. m. Sept. 13, 9 5	in. 29.960	° 69.	° 61.

REMARKS.

(129) 124. Transits over T.'s I, II, and III assumed as recorded over T.'s II, III, and IV.
(129) 126. Minutes assumed as 56.
(130) 11. Micrometer divisions assumed as 30 instead of 3.
(130) 21. Hor. thread assumed as 5 instead of 4.
(130) 37. Micrometer reading assumed as 2^r.37 instead of 1^r.37.
(130) 38. Micrometer reading assumed as 2.^{r}20 instead of 1.^{r}20.

ZONE 130. SEPTEMBER 13. B. BELT, −31° 16′. D_o=−30° 51′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a^2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
39	8	32.	47.	. .	. .	. .	. .	. .	21 20 16.07	+11.91	−0.01	III.	2	13.33	−11 48.89	− 8.96	−1.23	21 20 27.97	−31 3 39.08
40	11	26.	41.	. .	. .	. .	. .	. .	27 10.27	11.85	0.00	III.	6	9.13	28 36.19	8.42	3.50	27 22.12	20 28.11
41	9	. .	. .	. .	40.5	55.	. .	. .	27 40.36	11.84	0.00	VI.	7	5.19	31 38.04	8.38	3.92	27 52.20	31 23 30.34
42	8	32.4	47.2	2.4	. .	. .	. .	. .	30 16.41	11.82	−0.01	IV.	2	3.51	6 55.47	8.18	0.57	30 28.22	30 58 44.22
43	5	58.	13.3	28.	43.	. .	. .	. .	38 42.70	11.75	+0.01	V.	9	9.3	43 28.85	7.57	5.58	38 54.46	31 35 22.00
44	7	. .	31.5	46.3	1.2	. .	. .	. .	43 0.73	11.71	−0.01	VI.	2	8.35	9 18.48	7.28	0.62	43 12.43	31 1 6.38
45	11	. .	58.4	13.2	. .	. .	. .	. .	45 27.43	11.69	−0.01	IV.	1	10.49	5 27.26	7.12	0.37	45 39.11	30 57 14.75
46	6	. .	. .	43.4	58.	12.5	27.	. .	21 46 57.87	+11.68	0.00	VII.	6	5.48	−26 52.40	− 7.02	−3.26	21 47 9.55	−31 18 42.68

ZONE 131. SEPTEMBER 13. B. BELT, −31° 16′. D_o=−30° 51′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a^2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	36.	51.	. .	. .	. .	. .	. .	22 55 20.20	+11.10	0.00	III.	5	5.19	−22 37.10	−49.24	−2.68	22 55 31.30	−31 15 9.02
2	10	. .	. .	. .	. .	59.5	13.5	. .	55 44.61	11.09	0.00	VII.	5	3.49	21 51.30	49.24	2.57	55 55.70	14 23.11
3	11	. .	7.5	22.5	. .	. .	. .	. .	58 36.84	11.07	0.00	IV.	5	3.53	21 53.78	49.23	2.57	22 58 47.91	31 14 25.58
4	9	. .	. .	30.5	45.	59.	13.5	. .	23 0 44.53	11.05	−0.01	VII.	1	8.21	4 12.15	49.23	0.15	23 0 55.57	30 56 41.53
5	12	. .	21.	36.	51.	. .	. .	. .	4 50.52	11.02	0.00	V.	5	6.42	23 18.96	49.22	2.76	5 1.54	31 15 50.94
6	8	54.3	9.3	24.	. .	. .	. .	. .	10 38.59	10.97	0.00	IV.	6	11.25	29 42.80	49.21	3.66	10 49.56	22 15.67
7	9	19.8	35.	49.5	4.5	. .	. .	. .	13 4.21	10.96	0.00	V.	7	4.56	31 26.61	49.23	3.90	13 15.17	23 59.74
8	9	. .	20.	. .	. .	. .	. .	. .	14 49.38	10.94	0.00	III.	7	7.12	32 35.18	49.24	4.06	15 0.32	25 8.48
9	12	. .	. .	. .	. .	. .	. .	36.	14 51.90	10.94	0.00	VII.	4	3.57	16 56.13	49.24	1.90	15 2.84	9 27.27
10	10	. .	. .	. .	55.4	9.4	. .	. .	19 55.04	10.90	+0.01	VI.	10	6.25	47 9.92	49.28	6.12	20 5.95	31 39 45.32
11	11	. .	. .	49.	3.3	. .	. .	. .	22 3.15	10.88	−0.01	V.	1	6.42	3 22.65	49.31	0.05	22 14.02	30 55 52.01
12	8	9.	24.	38.5	. .	. .	. .	. .	27 53.29	10.84	0.00	IV.	8	3.49	35 51.57	49.40	4.52	28 4.13	31 28 25.49
13	10	. .	. .	. .	55.	9.5	24.	. .	29 54.85	10.82	0.00	VII.	7	3.43	30 49.37	49.43	3.82	30 5.67	23 22 62
14	12	. .	. .	15.	. .	44.	. .	. .	37 29.46	10.76	0.00	VII.	6	8.48	28 23.17	49.60	3.47	37 40.22	20 56.24
15	8	. .	. .	. .	. .	15.	29.	44.	46 0.05	10.70	0.00	VII.	4	7.41	18 49.08	49.85	2.15	46 10.75	11 21.08
16	9	11.5	26.5	41.2	. .	. .	. .	. .	49 55.69	10.67	0.00	IV.	5	7.52	23 54.30	49.97	2.85	50 6.36	16 27.12
17	10	26.	41.	. .	. .	. .	. .	. .	54 10.38	10.64	0.00	IV.	8	9.15	38 35.95	50.13	4.91	54 21.02	31 31 10.99
18	10	. .	. .	. .	. .	. .	. .	46.5	55 2.28	10.63	−0.01	VII.	2	3.15	6 36.85	50.17	0.47	55 12.90	30 59 7.49
19	9	. .	. .	. .	. .	16.	30.5	45.4	57 1.34	10.62	0.00	VII.	4	6.6	18 1.19	50.24	2.05	57 11.96	31 10 33.48
20	8	. .	. .	. .	. .	. .	. .	47.5	23 58 3.42	10.61	0.00	VII.	4	8.37	19 17.33	50.28	2.21	23 58 14.03	11 49.82
21	11	. .	8.	. .	37.	. .	. .	. .	0 2 36.84	10.58	0.00	VII.	6	4.31	26 13.58	50.48	3.17	0 2 47.42	18 47.23
22	10	. .	. .	. .	45.5	0.0	. .	. .	4 45.39	10.57	0.00	VII.	10	9.9	48 32.36	50.58	6.33	4 55.96	41 9.27
23	10	. .	. .	. .	. .	54.5	8.4	23.5	7 39.48	10.55	0.00	VII.	1	16.20	7 43.41	50.72	0.72	7 50.03	0 14.85
24	11	. .	28.	42.5	. .	. .	. .	. .	11 57.30	10.52	0.00	VI.	8	6.8	37 1.45	50.94	4.68	12 7.82	29 37.07
25	10	. .	. .	. .	. .	. .	13.5	29.	12 44.71	10.51	0.00	VII.	7	3.35	30 45.34	50.98	3.81	12 55.22	23 20.13
26	8	. .	. .	. .	22.	37.	. .	. .	17 22.12	10.48	0.00	VI.	8	8.53	38 24.65	51.24	4.89	17 32.60	31 31 31.07
27	10	. .	. .	33.	48.	. .	. .	. .	20 47.50	10.45	0.00	V.	1	8.10	4 7.03	51.43	0.10	20 57.95	30 56 38.56
28	10	40.	55.	9.5	. .	. .	. .	. .	27 24.03	10.41	0.00	IV.	4	2.45	16 20.30	51.78	1.80	26 34.44	31 8 53.88
29	9	. .	. .	. .	54.	. .	23.	. .	28 53.88	10.40	0.00	VII.	4	4.15	17 5.21	51.87	1.92	29 4.28	9 39.00
30	10	. .	40.	55.	. .	. .	. .	. .	36 9.30	10.35	0.00	IV.	4	6.11	23 3.37	52.44	2.78	36 19.65	15 38.59
31	11	. .	. .	. .	. .	53.	7.	22.3	36 38.14	10.35	0.00	VII.	4	3.15	21 34.16	52.47	2.64	36 48.49	14 9.27
32	5	. .	. .	. .	. .	. .	37.	52.	39 7.88	10.34	0.00	VII.	2	6.16	8 8.13	52.65	0.66	39 18.22	0 41.44
33	6	43.2	58.	13.	. .	. .	. .	. .	45 27.29	10.30	0.00	IV.	4	5.57	17 57.11	53.14	2.02	45 37.59	31 10 32.27
34	12	. .	. .	. .	. .	. .	. .	6.	46 21.78	10.29	0.00	VII.	2	4.2	7 0.56	53.21	0.52	46 32.07	30 59 34.29
35	9	. .	47.5	2.3	17.	. .	. .	. .	50 16.82	10.27	0.00	V.	6	2.53	25 24.58	53.52	3.06	50 27.09	31 18 1.16
36	12	18.5	33.5	. .	. .	. .	. .	. .	55 2.66	10.24	0.00	IV.	4	8.47	19 22.84	53.94	2.20	55 12.90	11 58.98
37	11	. .	. .	8.	23.	. .	. .	. .	56 22.62	10.23	0.00	V.	4	9.16	19 37.41	54.05	2.23	56 32.85	12 13.69
38	9	. .	. .	. .	. .	. .	45.	0.2	0 57 16.03	+10.23	0.00	VII.	5	10.23	−25 9.97	−54.13	−3.02	0 57 26.26	−31 17 47.12

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h.	s.	s.	s.	s.	s,

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(130) 44. Micrometer reading assumed as 12ʳ.35 instead of 8ʳ.35.
(131) 23. Micrometer reading assumed as 15ʳ.20 instead of 16ʳ.20.
(131) 30. Hor. thread assumed as 5 instead of 4.

ZONE 132. SEPTEMBER 14. K. BELT, −28° 8′. D_0=−27° 43′ 40″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s	° ′ ″
1	9	. .	. .	. .	. .	. .	. .	22.6	19 59 40.12	+11.87	+0.01	VII.	8	9.44	−38 50.17	−21.33	−4.47	19 59 52.00	−28 22 55.97
2	9	. .	. .	. .	. .	. .	. .	24.0	20 0 41.33	11.86	0.00	VII.	5	7.47	23 51.37	21.21	2.88	20 0 53.19	7 55.46
3	10	. .	. .	. .	20.1	. .	. .	. .	3 19.94	11.84	+0.01	IV.	8	7.19	37 37.46	20.89	4.35	3 31.79	21 42.70
4	9	. .	. .	. .	. .	. .	44.1	. .	6 15.76	11.82	+0.02	VI.	10	7.44	47 49.79	20.53	5.43	6 27.60	31 55.75
5	8	. .	. .	. .	. .	. .	40.5	. .	7 12.29	11.81	−0.01	VI.	4	8.58	19 28.19	20.42	2.43	7 24.09	28 3 31.04
6	9	. .	. .	. .	28.8	. .	. .	. .	10 28.64	11.79	−0.02	IV.	1	9.11	4 37.83	20.02	0.90	10 40.41	27 48 38.75
7	8	. .	. .	. .	. .	. .	18.0	. .	10 49.72	11.78	+0.01	VI.	7	10.26	34 12.88	19.98	3.97	11 1.51	28 18 16.83
8	9	. .	. .	. .	. .	. .	. .	4.5	11 21.77	11.78	−0.01	VII.	4	7.7	18 32.00	19.92	2.33	11 33.54	2 34.25
9	9	. .	. .	. .	. .	18.2	. .	. .	13 4.01	11.77	0.00	V.	6	7.45	27 51.82	19.72	3.30	13 15.78	11 54.84
10	9	. .	. .	. .	46.4	. .	14.4	. .	14 46.22	11.76	−0.01	IV.	4	7.49	18 53.59	19.53	2.37	14 57.97	28 2 55.49
11	9	. .	. .	. .	. .	. .	. .	43.9	18 0.91	11.73	−0.01	VII.	3	3.58	11 57.69	19.14	1.66	18 12.63	27 55 58.49
12	9	. .	. .	. .	17.9	. .	45.7	. .	20 17.56	11.71	+0.02	IV.	9	8.2	42 58.15	18.88	4.89	20 29.29	28 27 1.92
13	6.7	. .	38.1	. .	6.7	. .	. .	. .	22 6.55	11.70	0.00	IV.	7	3.52	30 54.38	18.67	3.61	22 18.25	28 14 56.66
14	9	. .	. .	. .	. .	26.8	. .	. .	26 12.53	11.67	−0.02	V.	2	5.40	7 50.39	18.21	1.22	26 24.18	27 51 49.82
15	9	. .	. .	. .	48.0	. .	. .	. .	28 47.84	11.65	+0.01	IV.	8	2.34	35 13.76	17.92	4.06	28 59.50	28 19 15.74
16	5.6	57.1	11.3	25.7	. .	. .	. .	. .	30 39.85	11.64	0.00	IV.	7	2.54	30 25.14	17.72	3.55	30 51.49	14 26.41
17	5.6	. .	. .	. .	20.4	. .	48.5	. .	31 20.26	11.63	0.00	VI.	5	5.36	22 45.55	17.65	2.75	31 31.89	6 45.96
18	5.6	. .	. .	. .	. .	. .	. .	59.3	32 16.93	11.62	+0.02	VII.	10	6.57	47 25.86	17.55	5.41	32 28.57	31 28.82
19	7	. .	. .	25.4	39.8	. .	. .	. .	34 39.68	11.60	+0.02	IV.	9	8.7	43 0.67	17.29	4.91	34 51.30	28 27 2.87
20	8	. .	. .	. .	. .	38.1	. .	. .	35 23.86	11.60	−0.01	V.	3	8.48	14 24.29	17.21	1.90	35 35.45	27 58 23.40
21	5	. .	. .	. .	. .	. .	28.3	. .	36 0.17	11.59	0.02	VI.	1	6.30	3 16.48	17.15	0.75	36 11.74	47 14.38
22	6.7	. .	. .	. .	. .	42.3	. .	. .	37 28.01	11.58	−0.02	V.	1	5.10	2 36.26	16.99	0.68	37 39.57	27 46 33.93
23	5	. .	. .	. .	. .	. .	31.5	. .	38 3.24	11.57	0.00	VI.	7	3.14	30 35.04	16.93	3.57	38 14.81	28 14 35.54
24	5	. .	. .	. .	. .	. .	7.1	21.6	38 38.94	11.57	+0.01	VII.	7	9.48	33 53.48	16.86	3.93	38 50.52	28 17 54.27
25	5	. .	25.3	. .	53.7	. .	. .	. .	40 53.54	11.55	−0.01	IV.	2	12.15	11 9.61	16.63	1.57	41 5.08	27 55 7.81
26	6.7	. .	. .	8.0	. .	36.8	. .	. .	42 22.56	11.54	+0.02	IV.	10	10.24	49 10.65	16.48	5.58	42 34.12	28 33 12.71
27	4.5	. .	. .	. .	. .	8.8	. .	. .	44 54.68	11.52	0.02	V.	9	12.33	45 14.75	16.22	5.14	45 6.22	29 16.11
28	7	. .	. .	. .	. .	. .	. .	6.1	45 23.71	11.52	+0.02	VII.	9	13.29	45 42.61	16.16	5.20	45 35.25	29 43.97
29	8.9	. .	1.5	. .	30.1	. .	. .	. .	48 29.97	11.49	+0.01	IV.	7	12.10	35 5.49	15.84	4.06	48 41.47	28 19 5.39
30	6	. .	42.3	56.8	. .	. .	. .	. .	51 10.59	11.47	−0.01	III.	2	12.33	11 18.64	15.58	1.57	51 22.05	27 55 15.79
31	7	. .	. .	. .	11.8	. .	. .	. .	52 11.64	11.46	+0.01	IV.	7	8.56	33 27.68	15.48	3.87	52 23.11	28 17 27.03
32	5	. .	. .	. .	. .	. .	. .	6.0	52 23.53	11.46	0.01	VII.	8	10.33	39 14.88	15.45	4.51	52 35.00	23 14.84
33	4	. .	. .	. .	1.3	15.6	. .	. .	54 1.29	11.45	+0.01	IV.	7	12.11	35 5.99	15.30	4.06	54 12.75	19 5.35
34	7	. .	. .	58.9	13.3	. .	. .	. .	55 13.03	11.44	0.00	V.	5	6.52	23 24.00	15.18	2.82	55 24.47	28 7 22.00
35	9	. .	. .	. .	8.3	. .	. .	. .	58 8.14	11.41	0.00	IV.	3	9.46	14 53.59	14.90	1.95	58 19.55	27 58 50.44
36	6	. .	. .	. .	. .	. .	. .	59.3	20 58 16.46	11.41	−0.01	VII.	2	8.43	9 22.31	14.89	1.38	20 58 27.86	53 18.58
37	9	. .	. .	. .	13.5	. .	. .	. .	21 14 13.34	11.29	−0.01	IV.	2	10.42	10 22.73	13.43	1.48	21 14 24.62	27 54 17.64
38	8	. .	. .	5.1	. .	33.5	. .	. .	16 19.32	11.27	+0.01	IV.	7	12.38	35 19.61	13.25	4.09	16 30.60	28 19 16.95
39	7	. .	. .	18.6	. .	47.0	. .	. .	18 32.85	11.25	0.01	IV.	8	8.48	38 22.34	13.06	4.43	18 44.11	22 19.83
40	9	. .	. .	. .	48.8	2.5	. .	. .	19 48.50	11.24	+0.01	IV.	8	10.27	39 12.26	12.95	4.52	19 59.75	28 23 9.73
41	8	. .	. .	. .	. .	. .	. .	52.2	20 9.39	11.24	−0.01	VII.	2	14.10	12 7.18	12.92	1.65	20 20.62	27 56 1.75
42	8	. .	. .	. .	. .	18.2	. .	. .	22 3.91	11.22	−0.02	V.	1	7.26	3 44.84	12.76	0.77	22 15.11	27 47 38.37
43	6	. .	. .	16.1	30.0	. .	. .	. .	24 30.18	11.20	+0.02	IV.	10	10.2	48 59.56	12.56	5.58	24 41.40	28 32 57.70
44	8	. .	. .	. .	. .	32.8	. .	. .	25 18.56	11.20	−0.01	V.	3	12.20	16 11.18	12.50	2.08	25 29.75	0 5.76
45	9	. .	. .	. .	. .	40.5	. .	. .	28 26.34	11.17	+0.01	V.	7	9.45	33 52.33	12.24	3.94	28 37.52	17 48.51
46	7	. .	. .	. .	. .	48.8	. .	. .	29 34.70	11.16	+0.02	V.	10	12.6	50 2.03	12.15	5.68	29 45.88	28 33 59.86
47	4	. .	. .	. .	. .	. .	39.5	. .	30 11.31	11.16	−0.01	VI.	3	9.26	14 43.32	12.10	1.93	30 22 46	27 58 37.35
48	9	. .	42.1	56.2	. .	. .	. .	. .	33 10.53	11.14	+0.01	IV.	8	7.59	37 57.63	11.87	4.38	33 21.68	28 21 53.88
49	8	. .	. .	. .	. .	. .	. .	0.9	21 33 18.25	+11.14	0.00	VII.	5	10.18	−25 7.51	−11.86	−3.01	21 33 29.39	−28 9 2.38

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h. Sept. 14, 18	s. *s* 4.47	s. *g* 0.020	s. + 0.057	s. + 0.173	s. 0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°
Zone 132	Sept. 14, 9 5	30.150	65.	54.2

REMARKS.

ZONE 132. SEPTEMBER 14. K. BELT, −28° 8′. D_0=−27° 43′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	° ′ ″	h. m. s.
50	7	. .	20.6	. .	49.3	. .	. .	. .	21 38 49.15	+11.10	+0.01	IV.	9	7.14	−42 33.94	−11.45	−4.88	21 39 0.26	−28 26 30.27
51	9	. .	. .	. .	. .	. .	. .	51.8	39 8.96	11.09	0.00	VII.	2	9.32	9 47.02	11.42	1.42	39 20.05	27 53 39.86
52	5	. .	. .	49.0	3.0	. .	. .	. .	41 2.92	11.08	0.00	IV.	5	4.18	22 6.39	11.29	2.69	41 14.00	28 6 0.37
53	8	. .	. .	. .	45.0	59.0	. .	. .	41 44.81	11.08	−0.01	V.	4	5.58	17 57.56	11.24	2.26	41 55.88	1 51.06
54	8	. .	. .	. .	41.8	56.0	. .	. .	42 41.71	11.07	0.00	V.	5	4.6	22 0.30	11.17	2.68	42 52.78	5 54.15
55	7	. .	. .	. .	40.0	. .	. .	. .	43 39.84	11.06	−0.01	IV.	4	4.16	17 6.19	11.11	2.17	43 50.89	0 59.47
56	9	. .	23.2	37.3	. .	. .	. .	. .	46 51.39	11.04	0.00	IV.	4	9.26	19 42.50	10.89	2.45	47 2.43	28 3 35.84
57	9	. .	. .	. .	. .	45.5	. .	. .	21 47 31.26	+11.03	−0.01	V.	3	11.57	−15 59.59	−10.84	−2.06	21 47 42.28	−27 59 52.49

ZONE 133. SEPTEMBER 15. B. BELT, −26° 53′. D_0=−26° 28′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
1	11	. .	. .	. .	. .	30.5	44.	. .	20 10 16.28	+11.63	−0.01	VII.	4	8.41	−19 19.42	−30.08	−2.49	20 10 27.90	−26 48 21.99
2	6	. .	49.	3.2	17.3	. .	. .	. .	14 17.25	11.60	+0.02	V.	9	9.14	43 34.41	29.55	4.78	14 28.87	27 12 38.74
3	7	51.	5.1	19.3	. .	. .	. .	. .	16 33.32	11.58	0.01	IV.	7	8.33	33 16.08	29.26	3.79	16 44.91	2 19.13
4	10	. .	. .	. .	16.	30.	. .	57.	17 15.92	11.58	+0.01	VII.	8	7.15	37 35.05	29.16	4.22	17 27.51	27 6 38.43
5	10	. .	. .	28.	. .	56.	. .	. .	19 41.78	11.56	−0.01	VI.	2	10.41	10 22.05	28.84	1.64	19 53.33	26 39 22.53
6	10	. .	. .	. .	49.	. .	17.	. .	21 49.01	11.55	−0.02	VII.	1	11.59	6 2.16	28.57	1.24	22 0.54	26 35 1.97
7	6	. .	. .	26.	40.3	54.	. .	. .	26 40.02	11.51	0.00	VII.	6	8.29	48 13.27	27.95	5.79	26 51.53	27 17 17.01
8	10	. .	. .	. .	36.	50.2	. .	. .	28 36.01	11.49	0.00	VI.	6	7.24	27 41.11	27.71	3.27	28 47.50	26 56 42.09
9	12	0.2	14.2	28.3	. .	. .	. .	. .	31 42.46	11.48	+0.01	IV.	8	4.9	36 1.66	27.44	4.09	30 53.95	27 5 3.19
10	5	. .	. .	. .	. .	38.2	52.	6.3	31 24.20	11.47	+0.01	VII.	9	4.28	41 9.84	27.36	4.54	31 35.68	27 10 11.74
11	9	. .	3.5	18.	32.	. .	. .	. .	34 31.71	11.45	−0.01	V.	4	6.12	18 4.64	26.98	2.35	34 43.15	26 47 3.97
12	9	. .	. .	34.	48.	2.3	. .	. .	35 47.95	11.44	0.01	VI.	4	5.54	17 55.43	26.83	2.34	35 59.38	46 50.60
13	9	. .	. .	. .	12.	26.2	40.	. .	37 12.03	11.43	−0.01	VII.	3	8.12	14 5.80	26.65	2.00	37 23.45	43 4.45
14	5	. .	. .	. .	. .	. .	39.	53.3	38 11.14	11.42	0.00	VII.	6	9.4	28 31.32	26.53	3.35	38 22.56	57 31.20
15	9	. .	. .	. .	14.	28.	41.5	. .	40 13.80	11.41	0.00	VII.	5	9.3	24 29.73	26.28	2.95	40 25.21	53 28.96
16	8	7.	21.3	35.2	. .	. .	. .	. .	44 49.24	11.37	0.00	IV.	5	7.35	23 45.73	25.75	2.88	45 0.61	52 44.36
17	9	. .	. .	2.	16.	30.	34.	. .	46 15.81	11.36	−0.01	VII.	3	3.36	11 46.63	25.59	1.76	46 27.16	40 43.98
18	5	. .	. .	. .	. .	55.	8.4	23.	47 40.75	11.35	0.00	VII.	5	5.55	22 51.91	25.41	2.83	47 52.10	51 50.15
19	9	. .	. .	. .	. .	. .	. .	24.	48 41.64	11.34	−0.01	VII.	2	9.36	9 49.06	25.29	1.56	48 52.97	26 38 45.91
20	9	. .	58.5	12.5	. .	. .	. .	. .	20 59 26.71	11.26	+0.01	IV.	9	9.1	43 27.89	24.09	4.79	20 59 37.98	27 12 26.77
21	9	. .	. .	42.	56.	. .	. .	. .	21 0 55.81	11.25	−0.01	V.	3	13.42	16 52.54	23.93	2.25	21 1 7.05	26 45 48.72
22	9	. .	. .	. .	. .	23.3	37.5	51.3	2 9.38	11.24	+0.01	VII.	8	6.34	36 13.87	23.81	4.11	2 20.63	27 5 11.78
23	8	. .	. .	33.	47.	0.5	14.	. .	5 46.49	11.21	−0.02	VII.	1	5.28	2 45.24	23.43	0.86	5 57.68	26 31 39.53
24	10	. .	10.5	25.	39.	. .	. .	. .	8 38.87	11.19	+0.01	V.	8	7.9	37 32.38	23.13	4.24	8 50.07	27 6 29.75
25	11	48.	2.2	16.3	. .	. .	. .	. .	10 30.10	11.18	−0.01	IV.	3	3.32	11 45.00	22.94	1.74	10 41.27	26 40 39.68
26	7	. .	. .	. .	. .	. .	21.3	36.	10 53.65	11.17	+0.01	VII.	7	10.10	29 4.59	22.90	3.40	11 4.84	26 58 9.89
27	9	. .	. .	. .	. .	. .	. .	53.	12 10.94	11.16	+0.01	VII.	7	7.25	33 11.64	22.77	3.80	12 22.11	27 2 8.21
28	10	33.2	47.3	1.2	16.	. .	. .	. .	16 15.37	11.13	−0.01	V.	3	11.37	15 49.52	22.37	2.12	16 26.49	26 44 44.01
29	8	. .	55.	9.	23.2	. .	. .	. .	19 23.14	11.10	+0.01	V.	9	6.35	42 14.24	22.05	4.68	19 34.25	27 11 10.97
30	12	. .	19.	33.	48.	. .	. .	. .	22 47.29	11.08	0.00	V.	6	8.41	28 20.07	21.74	3.33	22 58.37	26 57 15.14
31	12	. .	. .	. .	. .	21.	. .	48.	24 6.55	11.07	--0.01	VII.	9	7.9	42 31.03	21.62	4.71	24 17.61	27 11 27.36
32	5	35.	49.3	3.4	18.	. .	. .	. .	27 17.42	11.04	0.00	V.	5	2.35	21 14.42	21.32	2.55	27 28.46	26 50 8.29
33	8	. .	43.	57.5	11.5	. .	. .	. .	32 11.08	11.00	−0.02	V.	1	5.06	2 34.26	20.88	0.86	32 22.06	31 26.00
34	5	. .	. .	. .	. .	29.	43.	. .	33 15.03	11.00	0.02	VII.	1	7.2	3 32.40	20.79	0.95	33 26.01	32 24.14
35	11	. .	. .	. .	. .	. .	0.2	14.	34 32.02	10.99	−0.01	VII.	3	6.42	12 50.17	20.68	1.81	34 43.00	41 42.66
36	9	. .	. .	. .	. .	14.5	28.	42.5	36 0.32	10.98	0.00	VII.	6	12.17	30 8.63	20.55	3.48	36 11.30	59 2.66
37	10	. .	20.	34.2	. .	. .	. .	. .	21 38 47.86	+10.96	0.00	IV.	2	4.00	− 7 0.02	−20.30	−1.30	21 38 58.82	−26 35 51.62

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h. Sept. 15, 18	s. s 4.27	s. g 0.017	s. + 0.109	s. + 0.108	s. 0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
Zone 133	1847. h. m. Sept. 15, 9 5	in. 30.150	° 64.5	° 53.

REMARKS.

(133) 7. Hor. thread assumed as 10 instead of 6.
(133) 9. Minutes of transit assumed as 30 instead of 31.
(133) 14. Transits discordant; observation of T. VI assumed as 39ˢ.0 instead of 37ˢ.0.
(133) 22. Micrometer reading assumed as 4ʳ.34 instead of 6ʳ.34.
(133) 26. Hor. thread assumed as 6 instead of 7.
(133) 27. Micrometer reading assumed as 8ʳ.25 instead of 7ʳ.25.
(133) 35. Micrometer reading assumed as 5ʳ.42 instead of 6ʳ.42.

Zone 133. September 15. B. Belt, −26° 53′. D_0=−26° 28′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
38	10	. .	. .	. .	. .	55.	8.5	23.	21 39 40.81	+10.95	0.00	VII.	6	5.15	−26 35.84	−20.23	−3.16	21 39 51.76	−26 55 29.23
39	10	. .	. .	. .	. .	. .	48.	2.5	41 20.23	10.94	0.00	VII.	6	9.12	24 34.25	20.09	2.96	41 31.17	53 27.30
40	10	6.4	21.	35.2	. .	. .	. .	. .	43 48.83	10.92	−0.01	IV.	3	8.52	14 26.36	19.90	1.98	43 59.74	26 43 18.24
41	8	35.	49.	3.	. .	. .	. .	. .	48 17.29	10.88	+0.01	IV.	9	6.43	42 18.31	19.54	4.69	48 28.18	27 11 12.54
42	10	. .	. .	54.2	9.	23.	. .	. .	52 8.77	10.85	+0.02	V.	10	3.7	45 30.25	19.24	5.01	52 19.64	27 14 24.50
43	6	. .	20.	34.5	48.	. .	. .	. .	21 55 47.96	10.82	−0.01	V.	2	5.14	7 47.38	18.98	1.38	21 55 58.77	26 36 37.74
44	7	. .	. .	52.	6.	20.	. .	. .	22 0 5.74	10.79	−0.02	VI.	1	2.30	1 15.47	18.66	0.75	22 0 16.51	26 30 4.88
45	6	36.	51.	5.	19.	. .	. .	. .	4 18.91	10.76	+0.01	V.	8	12.10	40 4.15	18.39	4.47	4 29.68	27 8 57.01
46	8	. .	6.	20.	34.	. .	. .	. .	6 33.92	10.74	−0.01	V.	3	7.37	13 48.50	18.24	1.94	6 44.65	26 42 38.63
47	6	. .	46.5	0.5	14.5	. .	. .	. .	8 0.17	10.73	−0.01	V.	2	9.28	9 45.36	18.14	6.53	8 10.89	26 38 40.03
48	9	49.	3.2	17.5	. .	. .	. .	. .	15 31.48	10.68	+0.01	IV.	8	9.40	38 48.56	17.69	4.36	15 42.17	27 7 40.61
49	7	. .	38.	52.	6.	. .	. .	. .	19 6.07	10.65	+0.01	IV.	9	6.4	41 58.65	17.47	4.66	19 16.73	27 10 50.78
50	7	40.	54.	8.2	. .	. .	. .	. .	22 22.06	10.62	0.00	IV.	4	3.6	16 30.89	17.29	2.19	22 32.68	26 45 20.37
51	10	. .	. .	. .	. .	. .	43.	58.	24 15.40	10.61	−0.01	VII.	2	6.36	8 18.30	17.19	1.43	24 26.00	37 6.92
52	10	. .	. .	15.	. .	43.5	57.	. .	28 29.12	10.58	0.00	VII.	4	11.50	20 54.71	16.96	2.61	28 39.70	26 49 44.23
53	12	. .	2.	16.	. .	. .	. .	. .	38 30.12	10.50	0.00	IV.	8	5.2	36 28.38	16.45	4.13	38 40.62	27 5 18.96
54	9	8.	22.	36.4	. .	. .	. .	. .	48 50.31	10.43	0.00	IV.	7	5.20	31 38.75	15.94	3.64	49 0.74	27 0 28.33
55	8	. .	. .	. .	. .	40.3	54.	8.	49 26.04	10.42	0.00	VII.	4	9.58	20 58.24	15.91	2.62	49 36.46	26 49 46.77
56	8	16.5	31.	45.	. .	. .	. .	. .	51 58.96	10.41	0.00	IV.	6	8.26	28 12.55	15.79	3.32	52 9.37	57 1.66
57	10	. .	52.	6.2	20.5	. .	. .	. .	22 56 20.21	10.37	0.00	V.	7	3.44	30 50.31	15.59	3.56	22 56 30.58	59 39.46
58	6	. .	11.	25.	38.7	52.5	. .	. .	23 0 38.63	10.34	0.00	VI.	2	9.13	9 37.67	15.39	1.52	23 0 48.97	26 38 24.58
59	11	. .	. .	. .	1.	15.	29.	. .	5 0.96	10.31	0.00	VI.	9	10.15	44 5.04	15.20	4.86	5 11.27	27 12 55.10
60	9	. .	12.5	25.7	40.5	55.	. .	. .	10 40.31	10.27	0.00	VI.	4	3.54	16 54.92	14.95	2.22	10 50.58	26 45 42.09
61	6	. .	. .	. .	51.	5.	. .	. .	23 23 50.87	+10.19	−0.01	VI.	1	11.1	− 5 33.13	−14.42	−1.15	23 24 1.05	−26 34 18.70

Zone 134. September 16. K. Belt, −30° 38′. D_0=−30° 14′ 20″.

1	9	43.8	. .	13.3	. .	. .	. .	. .	19 35 27.62	+11.44	−0.01	III.	4	10.42	−20 20.78	−20.32	−2.40	19 35 39.05	−30 35 3.50
2	9	. .	. .	. .	2.9	. .	31.5	. .	37 2.60	11.43	+0.02	IV.	10	6.17	47 6.10	20.15	5.83	37 14.05	31 1 52.08
3	8	41.5	56.2	. .	. .	. .	. .	. .	39 25.42	11.41	+0.01	II.	7	5.26	31 41.58	19.88	3.84	39 36.84	30 46 25.30
4	8	. .	. .	49.8	4.6	. .	. .	. .	40 4.31	11.41	0.00	V.	5	7.34	23 45.18	19.81	2.85	40 15.72	38 27.84
5	10	. .	. .	9.8	. .	. .	. .	. .	42 24.34	11.39	+0.01	III.	7	8.51	33 25.10	19.56	4.08	42 35.74	48 8.74
6	8.9	. .	. .	17.0	31.8	. .	. .	. .	43 31.53	11.38	0.00	IV.	5	11.4	25 31.12	19.44	3.07	43 42.91	40 13.63
7	8	. .	. .	. .	. .	. .	. .	. .	44	11.38	0.00	V.	5	8.25	24 10.89	19.40	2.90	44	38 53.19
8	10	51.0	5.8	. .	. .	. .	. .	. .	46 35.05	11.36	+0.01	III.	8	10.38	39 17.76	19.12	4.85	46 46.42	54 1.73
9	6	. .	. .	56.7	11.4	25.8	. .	. .	47 11.32	11.35	+0.02	IV.	9	8.7	43 0.67	19.05	5.33	47 22.69	57 45.05
10	7	. .	. .	. .	. .	. .	7.2	22.1	47 38.30	11.35	−0.01	VII.	4	11.56	20 57.69	19.00	2.56	47 49.64	35 39.25
11	8	. .	. .	. .	. .	. .	22.3	37.2	48 53.39	11.34	−0.01	VII.	3	6.56	13 27.42	18.87	1.56	49 4.72	28 7.85
12	10	. .	. .	. .	. .	. .	25.8	. .	50 56.80	11.32	+0.01	VI.	8	7.43	37 49.36	18.65	4.64	51 8.13	52 32.65
13	10	. .	. .	44.3	. .	. .	. .	. .	52 58.76	11.31	0.00	IV.	6	8.5	28 1.96	18.45	3.40	53 10.07	42 43.81
14	6	. .	21.6	36.2	50.4	. .	. .	. .	54 50.46	11.29	−0.01	IV.	4	10.29	20 14.27	18.26	2.39	55 1.74	34 54.92
15	8	. .	. .	. .	39.0	. .	. .	. .	55 38.84	11.28	0.02	IV.	1	13.39	6 52.97	18.17	0.72	55 50.10	21 31.86
16	9	. .	. .	2.0	16.5	. .	. .	. .	57 16.22	11.27	−0.02	V.	1	10.59	5 32.25	18.01	0.55	57 27.47	30 20 10.81
17	7	. .	22.8	37.0	. .	. .	. .	. .	58 51.93	11.26	+0.02	IV.	10	2.56	45 24.75	17.85	5.64	59 3.21	31 0 8.24
18	8	. .	. .	. .	. .	. .	51.8	6.3	19 59 22.77	11.26	+0.01	V.	8	6.16	37 5.65	17.79	4.55	19 59 34.04	30 51 47.99
19	5	. .	. .	5.9	20.4	. .	. .	. .	20 6 20.17	17.21	−0.01	V.	3	5.40	12 49.49	17.11	1.47	20 6 31.37	27 28.07
20	9	. .	13.0	27.5	. .	. .	. .	. .	8 42.26	11.19	+0.02	III.	9	10.2	43 58.61	16.88	5.46	8 53.47	58 40.95
21	8	. .	20.0	34.7	. .	. .	. .	. .	20 9 49.10	+11.18	0.00	III.	5	11.15	−25 36.61	−16.77	−3.08	20 10 0.28	−30 40 16.46

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847. h. Sept. 16, 18	s. *s* 3.21	s. *g* 0.010	s. + 0.324	s. − 0.159	s. 0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
Zone 134	1847. h. m. Sept. 16, 9 5	in. 30.050	° 66.5	° 59.3

REMARKS.

(133) 39. Hor. thread assumed as 5 instead of 6.
(133) 47. Transits over T.'s III–V assumed as recorded over T.'s II–IV.
(134) 7. Double.
(134) 11. A star of 6th magnitude passed the upper part of field.

ZONE 134. SEPTEMBER 16. K. BELT, −30° 38′. D₀=−30° 14′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	8	. .	55.8	10.4	25.1	. .	. .	. .	20 12 24.98	+11.16	+0.01	IV.	8	4.38	−36 16.28	−16.52	−4.45	20 12 36.15	−30 50 57.25
23	8	. .	11.9	26.3	. .	. .	. .	. .	14 41.10	11.14	+0.02	III.	9	8.43	43 18.77	16.31	5.37	14 52.26	58 0.45
24	11	. .	. .	. .	13.4	. .	. .	. .	15 13.24	11.14	0.02	IV.	9	12.8	45 2.18	16.26	5.60	15 24.40	59 44.04
25	10	. .	. .	. .	. .	. .	. .	57.9	15 14.42	11.14	+0.01	VII.	6	10.47	29 23.20	16.26	3.57	15 25.57	44 3.03
26	10	. .	15.5	30.2	. .	. .	. .	. .	17 44.64	11.12	0.00	III.	6	8.19	28 8.97	16.02	3.40	17 55.76	42 48.39
27	9	. .	33.0	. .	2.7	. .	. .	. .	20 2.40	11.09	+0.01	IV.	8	9.14	38 35.45	15.81	4.73	20 13.50	53 15.99
28	10	. .	59.9	14.6	. .	. .	. .	. .	22 29.00	11.08	0.00	IV.	5	11.10	25 34.14	15.59	3.07	22 40.08	40 12.80
29	9	. .	. .	. .	17.1	31.5	. .	. .	23 16.92	11.07	−0.01	IV.	3	5.45	12 52.06	15.52	1.47	23 27.98	27 29.05
30	6	. .	. .	. .	12.1	26.5	. .	. .	24 11.95	11.06	0.00	IV.	6	5.22	26 39.76	15.44	3.20	24 23.01	41 18.40
31	5.6	. .	. .	. .	. .	35.5	49.4	. .	25 20.70	11.05	+0.01	IV.	9	10.31	34 13.28	15.33	4.18	25 31.76	30 48 52.79
32	10	. .	. .	. .	. .	. .	58.7	. .	26 29.64	11.04	0.02	VI.	10	10.15	49 5.91	15.23	6.13	26 40.70	31 3 47.27
33	8	. .	. .	. .	43.6	. .	12.0	. .	28 43.29	11.02	0.02	IV.	10	12.7	50 2.58	15.03	6.26	28 54.33	31 4 43.87
34	9	. .	30.0	44.6	. .	. .	. .	. .	31 59.24	10.99	+0.01	IV.	8	10.40	39 18.82	14.76	4.84	32 10.24	30 53 58.42
35	10	. .	49.6	. .	. .	. .	. .	. .	33 18.62	10.98	−0.01	IV.	4	7.26	18 41.99	14.65	2.23	33 29.59	33 18.87
36	7.8	. .	45.8	0.4	15.0	. .	. .	. .	34 14.90	10.98	+0.01	IV.	7	4.17	31 6.99	14.57	3.78	34 25.89	30 45 45.34
37	7	. .	31.8	46.7	1.2	. .	. .	. .	36 1.21	10.96	0.02	IV.	10	4.54	46 24.25	14.42	5.78	36 12.19	31 1 4.45
38	10	. .	. .	. .	. .	. .	4.9	. .	38 35.92	10.94	+0.01	VI.	7	6.40	32 18.90	14.21	3.94	38 46.87	30 46 57.05
39	6.7	. .	. .	. .	. .	. .	25.3	40.2	39 56.44	10.93	0.00	VII.	6	11.39	29 49.42	14.09	3.62	40 7.37	44 27.13
40	7	. .	. .	8.0	22.3	. .	. .	. .	42 22.12	10.91	−0.02	IV.	1	11.10	5 37.84	13.90	0.56	42 33.01	20 12.30
41	9	. .	28.6	. .	57.9	. .	. .	. .	43 57.74	10.90	0.00	IV.	6	9.42	28 50.87	13.78	3.48	44 8.64	43 28.13
42	9.8	. .	. .	41.1	55.6	. .	. .	. .	45 55.50	10.88	0.00	IV.	6	7.22	27 40.27	13.62	3.35	46 6.38	42 17.24
43	8.9	. .	. .	. .	. .	. .	55.0	9.9	46 26.13	10.88	0.00	VI.	6	5.52	26 54.69	13.58	3.25	46 37.01	41 31.52
44	9.10	. .	. .	. .	. .	. .	16.7	. .	47 47.73	10.87	0.00	VI.	7	2.59	30 27.46	13.47	3.70	47 58.60	45 4.63
45	7	. .	19.4	34.3	. .	. .	. .	. .	51 48.32	10.84	−0.02	IV.	1	7.54	3 59.01	13.17	0.35	51 59.14	18 32.53
46	7.8	. .	. .	. .	. .	. .	20.2	35.3	51 51.36	10.84	−0.02	IV.	1	10.29	5 17.17	13.17	0.51	52 2.18	19 50.85
47	9	. .	. .	. .	. .	. .	. .	22.9	52 39.34	10.83	+0.01	VII.	8	7.8	37 31.46	13.11	4.60	52 50.18	52 9.17
48	9	. .	. .	58.2	12.9	. .	. .	. .	56 12.78	10.80	+0.01	IV.	8	10.38	39 17.81	12.85	4.85	56 23.59	53 55.51
49	5.6	. .	. .	. .	46.7	1.1	15.2	. .	56 46.45	10.80	0.00	IV.	6	8.45	28 22.13	12.81	3.44	56 57.25	42 58.38
50	9	. .	12.4	27.0	. .	. .	. .	. .	20 59 41.43	10.77	0.00	IV.	5	8.19	24 7.92	12.60	2.89	20 59 52.20	38 43.41
51	6	10.6	25.6	40.2	. .	. .	. .	. .	21 0 54.33	10.76	+0.02	IV.	1	9.55	5 0.02	12.52	0.48	21 1 5.11	19 33.02
52	9	. .	. .	. .	. .	. .	6.0	. .	4 37.01	10.73	0.01	VI.	7	10.0	33 59.75	12.28	4.15	4 47.75	48 36.18
53	9	. .	. .	15.5	. .	44.3	. .	. .	7 29.97	10.70	0.01	IV.	8	11.57	39 57.64	12.09	4.94	7 40.68	53 34.67
54	9	. .	44.1	58.4	. .	. .	. .	. .	9 13.20	10.69	0.01	IV.	8	12.15	40 6.71	11.98	4.95	9 23.90	54 43.64
55	8	. .	. .	41.8	56.8	. .	. .	. .	9 56.55	10.68	0.01	IV.	8	14.24	41 11.75	11.93	5.01	10 7.24	30 55 48.69
56	7	. .	. .	53.9	9.0	. .	. .	. .	11 8.76	10.67	+0.02	IV.	10	11.31	49 44.43	11.86	6.23	11 19.45	31 4 22.52
57	9	. .	. .	. .	. .	. .	. .	0.6	11 16.81	10.67	−0.01	VII.	4	8.32	19 14.83	11.86	2.26	11 27.48	30 33 48.95
58	9	. .	. .	. .	. .	50.1	. .	19.0	12 35.48	10.66	+0.01	VII.	7	6.55	32 26.21	11.78	3.95	12 46.15	47 1.94
59	9	. .	. .	. .	. .	4.0	. .	33.0	13 49.36	10.65	0.00	VII.	5	9.33	24 44.78	11.71	2.97	14 0.01	39 19.46
60	8	. .	. .	23.8	38.2	. .	. .	. .	16 38.05	10.63	−0.01	IV.	3	12.5	16 3.67	11.55	1.87	16 48.67	30 37.09
61	8	. .	. .	. .	. .	. .	26.4	41.6	16 57.65	10.62	0.00	VI.	4	9.34	19 46.09	11.53	2.33	17 8.27	34 19.95
62	9	. .	. .	39.2	53.3	. .	. .	. .	18 53.21	10.61	−0.02	IV.	1	8.36	4 20.20	11.41	0.41	19 3.80	30 18 52.02
63	7.8	. .	. .	3.4	18.2	. .	. .	. .	20 18.11	10.60	+0.02	IV.	10	10.34	49 15.70	11.33	6.16	20 28.73	31 3 53.19
64	9	. .	. .	. .	59.3	. .	28.0	. .	20 59.08	10.59	0.00	IV.	7	5.36	31 46.83	11.30	3.87	21 9.67	30 46 22.00
65	9	12.5	. .	41.8	56.4	. .	. .	. .	23 56.35	10.56	+0.01	IV.	7	8.52	33 25.66	11.15	4.08	24 6.92	48 0.89
66	8	. .	33.1	47.4	. .	. .	. .	. .	25 2.08	10.55	0.00	IV.	7	3.24	30 40.26	11.10	3.73	25 12.63	45 15.09
67	9	. .	. .	. .	37.6	51.8	. .	. .	25 37.35	10.55	0.00	IV.	6	7.54	27 56.41	11.07	3.38	25 47.90	42 30.86
68	8	. .	54.9	9.6	24.0	. .	. .	. .	29 23.76	10.51	−0.02	IV.	1	8.28	4 16.15	10.88	0.40	29 34.25	18 47.43
69	7.8	. .	. .	4.0	18.8	33.0	. .	. .	30 18.62	10.51	+0.01	IV.	9	10.22	44 8.74	10.84	5.50	30 29.14	58 45.08
70	9	. .	20.6	35.4	. .	. .	. .	. .	20 31 49.56	+10.49	−0.01	IV.	2	13.57	−11 34.82	−10.77	−1.31	21 32 0.04	−30 26 6.90

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

ZONE 134. SEPTEMBER 16. K. BELT, —30° 38′. D₀=—30° 14′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
71	9.10	. .	. .	. .	. .	18.3	. .	. .	20 33 3.67	+10.48	—0.01	V.	2	3.13	— 6 36.26	—10.73	—0.69	21 33 14.14	—30 21 7.68
72	9	. .	. .	. .	. .	. .	. .	27.3	33 43.50	10.48	0.01	VII.	10	5.34	17 45.07	10.70	2.10	33 53.97	32 17.87
73	10	. .	. .	. .	. .	. .	59.3	. .	37 30.46	10.44	—0.01	VI.	1	11.13	5 39.15	10.54	0.55	37 40.89	20 10.24
74	9	. .	3.6	18.2	. .	. .	. .	. .	40 32.59	10.42	0.00	IV.	4	12.7	21 3.68	10.42	2.50	40 43.01	35 36.60
75	10	. .	. .	. .	. .	2.9	. .	. .	40 48.39	10.41	+0.01	IV.	7	10.28	34 14.06	10.41	4.18	40 58.81	48 48.65
76	9	. .	. .	. .	36.4	51.2	. .	. .	41 36.45	10.41	0.00	IV.	5	12.20	26 9.43	10.39	3.15	41 46.86	30 40 42.97
77	8	. .	33.6	48.2	2.7	. .	. .	. .	43 2.81	10.40	+0.02	IV.	10	5.10	46 32.31	10.34	5.80	43 13.23	31 1 8.45
78	8	45.9	. .	15.2	. .	. .	. .	. .	45 29.93	10.38	+0.01	IV.	9	7.23	42 38.47	10.26	5.30	45 40.32	30 57 14.03
79	7.8	. .	59.2	13.9	28.6	. .	. .	. .	46 28.39	10.36	0.00	IV.	7	1.57	29 56.39	10.23	3.64	46 38.75	44 30.26
80	8	. .	. .	. .	. .	. .	17.2	32.6	46 48.50	10.36	—0.01	VII.	2	—0.10	10 2.70	10.22	1.12	46 58.85	30 24 34.04
81	9	. .	. .	. .	. .	56.8	. .	. .	21 48 42.20	10.35	0.01	IV.	4	2.46	16 20.81	10.15	1.90	48 52.54	30 52.86
82	8	. .	. .	. .	. .	51.6	5.8	. .	49 36.96	10.34	—0.01	IV.	3	5.12	12 35.42	10.12	1.46	49 47.29	27 7.00
83	8	. .	. .	. .	52.7	7.0	. .	. .	50 52.50	10.33	0.00	IV.	6	6.32	27 15.07	10.09	3.29	51 2.83	41 48.45
84	7	42.1	57.0	11.6	. .	. .	. .	. .	54 25.96	10.30	0.00	IV.	5	6.4	22 59.85	10.00	2.74	54 36.29	37 32.59
85	6	50.2	5.3	19.8	. .	. .	. .	. .	21 55 34.20	+10.29	0.00	IV.	5	7.54	—23 55.31	— 9.98	—2.87	21 55 44.49	—30 38 28.16

ZONE 135. SEPTEMBER 16. K. BELT, —26° 53′. D₀=—26° 28′ 20″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
1	9	. .	. .	. .	51.3	. .	. .	. .	23 23 51.14	+ 9.51	0.00	IV.	2	11.32	— 5 48.94	—13.11	—1.12	23 24 0.65	—26 34 23.17
2	9	7.7	22.1	. .	. .	. .	. .	. .	25 49.92	9.50	0.00	IV.	2	4.58	7 29.26	12.87	1.29	25 59.42	36 3.42
3	9	. .	. .	54.3	8.1	. .	. .	. .	29 7.98	9.48	0.00	IV.	3	6.13	13 6.18	12.47	1.84	29 17.46	26 41 40.49
4	7.8	. .	56.7	10.2	24.8	. .	. .	. .	32 24.56	9.45	0.00	IV.	7	8.9	33 3.98	12.08	3.80	32 34.01	27 1 39.86
5	6.7	48.7	2.8	16.9	. .	. .	. .	. .	36 31.02	9.42	0.00	IV.	8	4.9	36 1.66	11.61	4.10	36 40.44	4 37.37
6	9	. .	19.2	33.3	. .	. .	. .	. .	39 47.33	9.40	0.00	IV.	7	7.13	32 35.73	11.24	3.76	39 56.73	1 10.73
7	9	. .	. .	. .	23.2	. .	50.8	. .	40 22.92	9.40	0.00	IV.	10	3.10	45 31.80	11.17	5.06	40 32.32	27 14 8.03
8	9	4.4	18.8	32.7	. .	. .	. .	. .	42 46.62	9.38	0.00	IV.	4	1.52	15 53.57	10.91	2.10	42 56.00	26 44 26.58
9	9	. .	. .	2.5	. .	30.5	. .	. .	45 16.41	9.37	0.00	IV.	5	10.11	25 4.39	10.65	3.01	45 25.78	53 38.05
10	9	31.1	45.5	. .	. .	. .	. .	. .	48 13.41	9.35	0.00	IV.	3	12.3	16 2.66	10.33	2.12	48 22.76	44 35.11
11	9	42.1	56.2	10.2	. .	. .	. .	. .	51 24.25	9.33	0.00	IV.	5	9.3	24 30.10	10.00	2.95	51 33.58	26 53 3.05
12	9	. .	46.8	. .	14.8	. .	. .	. .	52 14.79	9.33	0.00	IV.	7	6.44	32 21.12	9.92	3.75	52 24.12	27 0 54.79
13	8	. .	. .	. .	. .	48.9	2.4	. .	55 34.68	9.32	+0.01	IV.	10	5.9	46 31.81	9.59	5.16	55 44.01	27 15 6.56
14	8	. .	. .	. .	. .	. .	44.4	. .	23 56 16.53	9.31	0.00	VII.	3	10.6	15 3.29	9.52	2.02	23 56 25.84	26 43 34.83
15	8	. .	13.1	27.2	41.4	. .	. .	. .	0 0 41.09	9.28	0.00	IV.	4	10.29	20 14.27	9.10	2.54	0 0 50.37	26 48 45.91
16	9	. .	. .	. .	. .	21.4	35.2	. .	1 7.33	9.27	0.00	IV.	7	11.54	34 57.43	9.06	4.00	1 16.60	27 3 30.49
17	7	. .	. .	. .	11.2	25.4	. .	. .	2 11.18	9.27	0.00	IV.	3	8.7	14 5.67	8.97	1.92	2 20.45	26 42 36.56
18	9	. .	14.1	. .	42.2	. .	. .	. .	3 42.16	9.26	0.00	IV.	8	5.0	36 27.37	8.83	4.15	3 51.42	27 5 0.35
19	7	. .	. .	15.5	29.8	. .	. .	. .	5 29.64	9.25	0.00	IV.	9	4.8	41 0.15	8.67	4.60	5 38.89	9 33.42
20	6	. .	. .	. .	59.1	. .	26.4	40.8	5 58.73	9.24	0.00	IV.	8	9.18	38 37.46	8.63	4.36	6 7.97	27 7 10.45
21	10	. .	. .	. .	. .	. .	22.0	. .	6 54.13	9.24	0.00	VI.	3	9.9	14 34.76	8.55	1.98	7 3.37	26 43 5.29
22	8	. .	44.4	58.9	. .	. .	. .	. .	10 12.52	9.22	0.00	IV.	3	12.48	16 25.35	8.25	2.16	10 21.74	26 44 55.76
23	9	15.8	30.2	44.4	. .	. .	. .	. .	12 58.39	9.20	0.00	IV.	8	10.33	39 15.29	8.03	4.43	13 7.59	27 7 47.75
24	9	. .	. .	. .	24.4	. .	. .	5.3	13 23.77	9.20	0.00	IV.	8	6.18	37 6.70	8.00	4.21	13 32.97	27 5 38.91
25	9	14.0	. .	42.8	. .	. .	. .	. .	23 56.47	9.14	0.00	IV.	5	4.54	22 24.55	7.18	2.75	24 5.61	26 50 54.48
26	9	. .	59.7	. .	27.8	. .	. .	. .	25 27.63	9.13	0.00	IV.	2	5.41	7 59.94	7.07	1.32	25 36.76	36 19.33
27	7	. .	. .	. .	. .	13.3	27.3	41.8	25 59.44	6.13	0.00	IV.	6	5.17	26 37.24	7.03	3.16	26 8.57	55 7.43
28	7.8	. .	. .	. .	. .	39.9	. .	8.0	27 25.89	9.12	0.00	V.	6	9.16	28 37.72	6.93	3.36	27 35.01	57 8.01
29	8	12.7	26.7	41.2	. .	. .	. .	. .	29 54.71	9.11	0.00	IV.	1	11.55	6 0.53	6.73	1.14	30 3.82	34 28.40
30	8.9	. .	. .	36.3	50.3	. .	. .	. .	0 31 50.13	+ 9.10	0.00	IV.	4	10.17	—20 8.22	— 6.62	—2.51	0 31 59.23	—26 48 37.35

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(134) 80. Hor. thread assumed as 3 instead of 2.
(135) 1. Micrometer thread assumed as 1 instead of 2.

ZONE 155. SEPTEMBER 16. K. BELT, −26° 53′. D_0 = −26° 28′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
31	9	. .	. .	. .	34.1	. .	. .	. .	0 32 33.94	+ 9.10	0.00	IV.	4	10.46	−20 22.85	− 6.57	−2.52	0 32 43.04	−26 48 51.94
32	8	. .	. .	. .	. .	. .	. .	16.9	32 34.72	9.10	0.00	VII.	5	7.56	23 55.93	6.57	2.90	32 43.82	52 25.40
33	8	10.3	. .	38.6	. .	. .	. .	. .	35 52.44	9.08	0.00	IV.	3	12.25	16 13.75	6.36	2.18	36 1.52	26 44 42.29
34	9	. .	14.2	28.2	. .	. .	. .	. .	40 42.40	9.06	0.00	IV.	9	7.31	42 42.51	6.05	4.78	40 51.46	27 11 13.34
35	7.8	. .	. .	. .	1.6	15.2	28.8	. .	41 1.16	9.05	0.00	IV.	9	7.45	42 49.57	6.03	4.79	41 10.21	11 20.39
36	7.8	. .	21.6	35.6	49.6	. .	. .	. .	44 49.69	9.04	0.00	IV.	9	10.40	34 17.82	5.82	3.93	44 58.73	2 47.57
37	9	. .	. .	. .	11.8	. .	39.0	. .	46 11.32	9.03	+0.01	IV.	10	7.20	47 37.86	5.74	5.27	46 20.36	27 16 8.87
38	9	32.9	47.2	1.5	15.3	. .	. .	. .	48 15.20	9.02	0.00	IV.	4	8.20	19 9.22	5.62	2.42	48 24.22	26 47 37.26
39	8.9	. .	. .	. .	. .	53.0	6.2	. .	48 38.63	9 02	0.00	VII.	9	4.27	41 9.34	5.60	4.60	48 47.65	27 9 39.54
40	7.8	. .	17.9	31.9	. .	. .	. .	. .	50 45.68	9.01	0.00	IV.	3	5.34	12 46.52	5.48	1.81	50 54.79	26 41 13.81
41	8	. .	56.3	10.7	24.6	. .	. .	. .	52 24.36	9.00	0.00	IV.	3	3.48	11 53.06	5.40	1.72	52 33.36	40 20.18
42	7	. .	. .	. .	7.3	. .	35.0	. .	53 7.16	8.99	−0.01	IV.	1	9.41	4 52.96	5.37	1.03	53 16.14	33 19.36
43	9	. .	. .	. .	. .	. .	52.0	. .	54 24.14	8.99	0.00	IV.	3	6.23	13 11.22	5.31	1.85	54 33.13	41 38.38
44	7	. .	. .	36.0	. .	5.0	. .	. .	55 50.48	8.98	0.00	IV.	7	3.10	30 33.20	5.24	3.55	55 59.46	26 59 1.99
45	9	. .	. .	. .	. .	39.1	52.9	. .	0 58 25.03	8.97	0.00	VII.	8	8.2	37 58.76	5.12	4.30	0 58 34.00	27 6 28.18
46	9	. .	55.0	9.2	. .	. .	. .	. .	1 1 22.90	8.95	0.00	IV.	2	12.24	11 14.15	4.98	1.65	1 1 31.85	26 39 40.78
47	7	0.2	14.6	28.8	42.8	. .	. .	. .	2 42.68	8.95	0.00	IV.	6	14.1	31 1.45	4.93	3.60	2 51.63	26 59 29.98
48	8	. .	. .	37.8	52.0	. .	. .	. .	4 51.86	8.94	0.00	IV.	8	7.28	37 41.99	4.85	4.27	5 0.80	27 6 11.11
49	8	. .	. .	37.0	51.2	. .	. .	. .	5 51.12	8.94	−0.01	IV.	10	3.45	45 49.45	4.80	5.10	6 0.06	27 14 19.35
50	7.8	. .	. .	5.2	19.2	33.2	. .	. .	11 19.02	8.91	0.00	IV.	3	5.44	12 51.56	4.60	1.81	11 27.93	26 41 17.97
51	9	. .	58.7	. .	26.8	. .	. .	. .	16 26.73	8.89	0.00	IV.	7	1.54	29 54.88	4.43	3.49	16 35.62	26 58 22.80
52	9	. .	. .	. .	34.2	. .	. .	. .	17 34.04	8.88	0.00	IV.	7	9.57	33 58.43	4.39	3.90	17 42.92	27 2 26.72
53	9	. .	. .	. .	. .	. .	. .	58.6	18 16.55	8.88	0.00	V.	7	9.57	33 58.39	4.37	3.90	18 25.43	2 26.66
54	9	. .	. .	59.5	13.5	. .	. .	. .	20 13.54	8.87	−0.01	VII.	10	3.43	45 48.05	4.30	5.08	20 22.40	27 14 17.43
55	9	. .	1.8	16.4	29.9	. .	. .	. .	21 29.88	8.86	0.00	IV.	3	8.3	14 1.65	4.27	1.92	21 38.74	26 42 27.84
56	9	27.8	41.8	55.9	. .	. .	. .	. .	23 9.68	8.86	+0.01	IV.	1	7.6	3 34.81	4.23	0.90	23 18.55	31 59.94
57	9	. .	. .	. .	. .	. .	15.8	. .	29 47.87	8.83	0.00	IV.	6	9.48	28 53.89	4.07	3.39	29 56.70	57 21.35
58	9	. .	. .	. .	. .	24.7	. .	52.8	34 10.63	8.82	0.00	IV.	5	6.49	23 22.54	3.99	2.85	34 19.45	26 51 49.38
59	9	. .	. .	53.8	. .	. .	. .	. .	38 7.89	8.81	0.00	IV.	8	8.22	38 9.23	3.92	4.31	38 16.70	27 6 37.46
60	8	. .	. .	. .	. .	41.1	. .	. .	38 27.12	8.80	0.00	IV.	8	12.44	40 21.34	3.92	4.53	38 35.92	8 49.79
61	8	. .	. .	. .	. .	. .	. .	20.5	38 38.47	8.80	0.00	VII.	7	11.56	34 58.05	3.91	4.00	38 47.27	27 3 25.96
62	9	30.9	45.0	. .	. .	. .	. .	. .	41 13.11	8.80	0.00	IV.	5	4.50	22 22.53	3.88	2.75	41 21.91	26 50 49.16
63	8	. .	. .	. .	31.2	. .	. .	. .	41 31.05	8.80	0.00	IV.	7	5.5	31 31.19	3.88	3.65	41 39.85	59 58.72
64	5.6	. .	. .	. .	. .	. .	14.7	. .	41 46.79	8.79	0.00	IV.	5	10.42	25 20.03	3.88	3.03	41 55.58	53 46.94
65	8	. .	. .	. .	. .	. .	. .	38.2	41 55.95	8.79	0.00	VII.	4	6.34	18 15.39	3.87	2.34	42 4.74	46 41.60
66	8	. .	18.3	. .	46.9	. .	. .	. .	45 46.46	8.78	+0.01	IV.	1	10.41	5 23.22	3.84	1.08	45 55.25	26 33 48.14
67	9	42.1	56.4	10.6	. .	. .	. .	. .	47 24.59	8.78	0.00	IV.	7	14.35	36 18.60	3.83	4.13	47 33.37	27 4 46.56
68	9	. .	10.5	24.4	. .	. .	. .	. .	48 38.67	8.77	−0.01	IV.	9	11.52	44 54.12	3.82	5.00	48 47.43	27 13 22.94
69	9	. .	. .	4.2	18.3	. .	. .	. .	50 18.15	8.77	0.00	IV.	6	8.38	28 18.60	3.81	3.33	50 26.92	26 56 45.74
70	9	. .	25.6	39.8	. .	. .	. .	. .	51 53.93	8.76	−0.01	IV.	10	3.33	45 43.40	3.81	5.08	52 2.68	27 14 12.29
71	5	. .	. .	. .	. .	32.0	45.8	0.1	52 18.00	8.76	0.00	IV.	9	4.19	41 5.70	3.81	4.61	52 26.76	27 9 34.12
72	9	. .	. .	. .	. .	. .	54.5	. .	53 26.57	8.76	0.00	VI.	6	9.8	28 33.55	3.81	3.35	53 35.33	26 57 0.71
73	9	. .	. .	. .	. .	55.8	. .	. .	1 54 41.84	8.76	−0.01	VI.	9	11.7	44 46.39	3.81	4.98	1 54 50.59	27 13 15.18
74	9	22.2	. .	50.8	. .	. .	. .	. .	2 0 4.52	8.74	0.00	IV.	4	6.37	18 17.29	3.80	2.34	2 0 13.26	26 46 43.43
75	9	57.0	11.2	. .	. .	. .	. .	. .	2 1 39.37	+ 8.74	0.00	IV.	7	6.6	−32 1.96	− 3.81	−3.70	2 1 48.11	−27 0 29.47

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

ZONE 136. SEPTEMBER 21. H. BELT, −26° 16′. $D_0 = -25° 51′ 50″$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	13.2	27.0	. .	. .	. .	22 19 26.85	+ 8.59	−0.01	II.	3	6.10	−13 4.51	+29.19	−1.90	22 19 35.43	−26 4 27.22
2	9.10	. .	. .	. .	14.0	. .	. .	. .	20 13.85	8.59	0.00	IV.	5	8.05	24 0.86	29.26	2.91	20 22.44	15 24.51
3	9	. .	. .	11.8	25.2	. .	53.	. .	21 25.28	8.58	0.00	VI.	4	5.40	17 48.38	29.35	2.33	21 33.86	9 11.36
4	9	. .	. .	. .	39.0	53.	6.2	. .	22 38.77	8.57	0.00	V.	4	4.08	17 2.11	29.44	2.27	22 47.34	8 24.94
5	8	. .	. .	4.2	18.2	. .	. .	. .	25 18.11	8.55	0.00	IV.	7	11.43	34 51.88	29.64	3.92	25 26.66	26 16.16
6	9.10	. .	12.5	27.0	. .	. .	. .	. .	26 40.73	8.54	0.00	III.	7	10.55	34 27.64	29.74	3.89	26 49.27	25 51.79
7	9	. .	. .	. .	19.0	. .	. .	. .	27 18.85	8.53	0.00	V.	5	4.13	22 4.05	29.79	2.73	27 27.38	13 26.99
8	8.9	. .	. .	. .	. .	32.8	. .	. .	28 18.88	8.52	0.00	VII.	7	12.01	35 0.57	29.86	3.93	28 27.40	26 24.64
9	7.8	. .	. .	. .	. .	. .	. .	43.8	29 43.65	8.52	0.00	VII.	7	11.07	34 33.35	29.92	3.89	29 52.17	25 57.32
10	7.8	. .	18.2	32.2	46.2	. .	. .	. .	30 51.05	8.50	0.00	IV.	5	8.31	24 13.97	30.04	2.92	30 59.55	15 36.85
11	7	. .	23.	37.	51.	. .	. .	. .	32 55.79	8.49	0.00	IV.	3	13.02	16 32.41	30.18	2.22	33 4.28	7 54.45
12	9	. .	0.2	14.2	28.2	. .	. .	. .	34 28.15	8.47	+0.01	IV.	7	14.40	36 21.12	30.29	4.05	34 36.63	27 44.88
13	8	. .	. .	. .	53.0	7.0	20.2	. .	34 52.78	8.47	+0.01	V.	7	13.13	35 37.21	30.32	3.98	35 1.26	27 0.87
14	6.7	42.0	56.	10.0	. .	. .	. .	. .	37 9.73	8.45	−0.01	III.	2	10.10	10 6.55	30.46	1.63	37 18.17	1 27.72
15	9	. .	. .	. .	54.2	7.5	21.2	. .	37 53.68	8.45	+0.01	VI.	9	5.03	41 27.72	30.52	4.55	38 2.14	32 51.75
16	9.10	. .	. .	. .	26.0	. .	. .	. .	39 25.85	8.43	−0.01	IV.	3	8.02	14 1.15	30.62	1.99	39 34.27	5 22.52
17	9	. .	. .	. .	. .	. .	26.2	. .	40 58.42	8.43	0.00	VI.	6	10.09	29 4.33	30.72	3.37	41 6.85	20 26.98
18	9	. .	. .	. .	. .	59.2	13.0	. .	42 45.24	8.41	+0.01	VII.	9	5.07	41 29.52	30.82	4.55	42 53.66	32 53.25
19	9	. .	. .	. .	13.2	. .	. .	. .	44 13.05	8.40	0.00	IV.	7	4.21	31 9.00	30.91	3.56	44 21.45	22 31.65
20	7.8	. .	. .	. .	29.2	43.1	. .	. .	45 29.10	8.39	0.00	V.	6	6.12	27 4.94	30.93	3.18	44 37.49	26 18 27.19
21	8	. .	. .	. .	. .	. .	. .	31.0	45 48.82	8.39	0.00	VII.	1	10.25	5 14.76	30.94	1.20	44 57.21	25 56 35.02
22	8.9	. .	. .	. .	11.0	25.0	. .	. .	46 10.92	8.39	0.00	V.	3	11.46	15 54.06	31.02	2.15	46 19.31	26 7 15.19
23	8.9	38.0	52.0	6.1	20.1	. .	. .	. .	49 19.94	8.36	0.00	III.	5	5.57	23 26.57	31.21	2.04	49 28.30	26 14 47.40
24	9	. .	58.2	12.8	. .	. .	. .	. .	50 26.13	8.36	−0.01	III.	1	11.06	5 35.79	31.27	1.24	50 34.48	25 56 55.76
25	9	. .	. .	. .	55.5	. .	. .	. .	50 55.35	8.35	+0.01	IV.	9	14.37	46 17.31	31.30	5.01	51 3.71	26 37 41.02
26	7	. .	. .	53.5	8.	. .	. .	. .	52 7.65	8.34	0.00	IV.	7	10.42	34 21.13	31.36	3.87	52 15.99	25 43.64
27	9	46.2	0.	14.2	. .	. .	. .	. .	55 28.05	8.32	0.00	III.	5	6.26	23 10.89	31.52	2.83	55 36.37	14 32.20
28	8	. .	. .	. .	40.	. .	. .	22.	54 40.07	8.32	0.00	IV.	9	6.50	42 21.84	31.48	4.64	54 48.39	33 45.00
29	8	. .	. .	. .	19.5	. .	47.2	. .	56 19.37	8.31	0.00	IV.	8	8.14	38 5.20	31.57	4.22	56 27.68	26 29 27.85
30	9	. .	. .	10.5	24.2	. .	. .	. .	57 24.05	8.30	−0.01	IV.	2	3.24	6 41.86	31.62	1.34	57 32.34	25 58 1.58
31	9	23.0	. .	51.0	. .	. .	. .	. .	59 4.88	8.29	0.00	III.	4	7.29	18 43.46	31.70	2.43	59 13.17	26 10 4.19
32	8.9	. .	. .	. .	. .	26.0	39.2	. .	22 59 11.74	8.29	+0.01	V.	7	7.58	32 58.38	31.71	4.68	22 59 20.04	24 21.35
33	6	. .	. .	27.	41.	54.8	. .	. .	23 0 40.97	8.27	+0.01	IV.	10	6.15	47 5.09	31.78	5.07	23 0 49.25	38 28.38
34	9	. .	. .	46.2	. .	. .	. .	. .	2 0.05	8.26	0.00	III.	6	5.27	26 42.24	31.83	3.15	2 8.31	26 18 3.56
35	9	. .	45.	. .	. .	. .	. .	. .	3 12.73	8.25	−0.01	II.	2	2.53	6 26.06	31.88	1.32	3 20.97	25 57 45.50
36	8.9	. .	. .	45.	58.5	12.2	. .	. .	3 58.44	8.25	0.00	IV.	5	3.29	21 41.68	31.92	2.69	4 6.69	26 13 2.45
37	9	. .	. .	47.8	1.8	15.2	. .	. .	5 1.54	8.24	0.00	IV.	7	3.07	30 31.69	31.96	3.51	5 9.78	21 53.24
38	8	52.5	7.1	21.1	35.0	. .	. .	. .	6 34.90	8.23	0.00	III.	7	4.45	31 21.07	32.03	3.58	6 43.13	22 42.62
39	9	. .	. .	. .	. .	59.8	. .	. .	6 45.77	8.23	0.00	V.	2	11.02	10 32.77	32.03	1.67	6 54.00	1 52.41
40	9	. .	46.5	. .	. .	. .	. .	. .	8 14.35	8.21	0.00	II.	4	8.42	19 20.16	32.10	2.48	8 22.56	10 40.54
41	9	. .	. .	. .	15.2	29.5	. .	. .	8 15.30	8.21	0.00	IV.	5	11.43	25 50.78	32.10	3.07	8 23.51	17 11.75
42	8	. .	10.	23.	37.	. .	. .	. .	9 37.19	8.20	0.00	III.	5	10.06	25 1.84	32.15	3.00	9 45.39	16 22.69
43	8.9	14.	. .	42.1	56.0	. .	. .	. .	10 55.97	8.19	0.00	III.	6	4.50	26 23.59	32.20	3.12	11 4.16	17 44.51
44	9.10	. .	. .	. .	. .	. .	23.0	. .	10 55.23	8.19	0.00	VI.	6	5.59	26 58.26	32.20	3.18	11 3.42	26 18 19.24
45	8.9	. .	. .	. .	. .	. .	59.2	7.	11 31.51	8.19	0.00	VI.	2	6.43	8 22.05	32.22	1.49	11 39.70	25 59 41.32
46	9	. .	. .	. .	. .	53.2	. .	. .	12 39.16	8.18	0.00	V.	2	4.16	7 8.05	32.26	1.38	12 47.34	26 58 27.17
47	8	. .	. .	. .	. .	. .	26.0	40.4	12 58.30	8.18	0.00	VI.	3	8.13	13 6.02	32.27	1.90	13 6.48	4 25.65
48	9	32.0	46.2	. .	. .	. .	. .	. .	16 13.97	8.16	0.00	II.	3	3.06	11 31.73	32.39	1.76	16 22.13	2 51.10
49	8.9	. .	. .	. .	26.4	41.0	. .	. .	23 16 26.63	+ 8.15	0.00	IV.	4	10.13	−20 6.20	+32.39	−2.55	23 16 34.78	−26 11 26.36

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
Sept. 21, 19	*s* 1.89	*g* 0.028			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°
Zone 136	Sept. 21, 9 5	30.00	67.	57.5

REMARKS.

(136) 9. Transit over T. IV assumed as recorded over T. VII.
(136) 10. Transits all assumed as 5ˢ too small.
(136) 11. Transits all assumed as 5ˢ too small.
(136) 20. Minutes of transit assumed as 44 instead of 45.
(136) 21. Minutes of transit assumed as 44 instead of 45.
(136) 23. Micrometer reading assumed as 6ʳ.57 instead of 5ʳ.57.
(136) 47. Micrometer reading assumed as 6ʳ.13 instead of 8ʳ.13.

Zone 136. September 21. H. Belt, −26° 16′. D₀=−25° 51′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	. .	12.0	26.0	. .	23 16 58.14	+ 8.15	0.00	V.	5	7.32	−23 44.18	+32.41	−2.89	23 17 6.29	−26 15 4.66
51	9	. .	21.8	35.2	. .	. .	17.0	. .	17 49.42	8.15	0.00	III.	8	11.22	39 39.95	32.44	4.37	17 57.57	31 1.88
52	7	39.2	54.	8.	. .	. .	. .	. .	20 21.65	8.13	0.00	III.	5	6.47	23 21.49	32.53	2.85	20 29.78	14 41.81
53	9	. .	24.0	38.2	. .	. .	. .	. .	20 52.00	8.12	0.00	III.	6	7.08	27 33.18	32.55	3.23	21 0.12	18 53.86
54	10	. .	. .	24.5	38.2	. .	. .	. .	21 38.25	8.12	0.00	IV.	7	8.47	33 23.14	32.56	3.76	21 46.37	24 44.34
55	6.7	. .	25.2	. .	. .	. .	. .	. .	23 53.28	8.10	0.00	II.	9	8.00	42 56.98	32.63	4.67	24 1.38	34 19.02
56	8	. .	. .	. .	52.5	. .	. .	. .	23 52.35	8.10	+0.01	IV.	10	8.11	48 3.58	32.63	5.18	24 0.46	39 26.13
57	9	. .	. .	. .	. .	. .	23.2	37.5	23 55.55	8.10	0.00	VI.	7	12.06	35 3.32	32.63	3.93	24 3.65	26 24.62
58	8.9	. .	23.2	37.2	. .	. .	. .	. .	25 51.30	8.08	0.00	III.	9	11.27	44 41.47	32.68	4.85	25 59.38	26 36 3.64
59	9	. .	. .	. .	. .	19.0	. .	. .	26 4.94	8.08	−0.01	V.	1	8.11	4 7.54	32.69	1.08	26 13.01	25 55 25.93
60	9	. .	. .	5.	18.6	. .	. .	. .	27 18.68	8.07	0.00	IV.	7	4.17	31 6.99	32.72	3.56	27 26.75	26 22 27.83
61	9	. .	. .	50.8	. .	. .	. .	. .	28 4.45	8.07	0.00	III.	3	8.00	14 0.10	32.75	1.99	28 12.52	5 19.34
62	7.8	. .	. .	26.6	40.7	. .	. .	. .	28 40.39	8.06	0.00	IV.	3	5.39	12 49.04	32.76	1.89	28 48.45	4 8.17
63	9	. .	. .	. .	. .	16.	. .	. .	29 2.04	8.06	0.00	V.	5	9.13	24 35.10	32.77	2.96	29 10.10	15 55.29
64	9	. .	. .	. .	. .	43.	. .	. .	29 29.10	8.05	0.00	V.	8	10.53	39 25.33	32.79	4.36	29 37.15	26 30 46.90
65	9	. .	. .	. .	. .	. .	24.2	38.8	29 56.71	8.05	0.00	VI.	8	8.03	37 59.49	32.80	4.22	30 4.76	29 20.91
66	9	. .	. .	23.5	37.	. .	. .	. .	31 36.98	8.04	0.00	IV.	2	11.37	11 0.54	32.83	1.71	31 45.02	2 19.42
67	10	. .	. .	. .	18.	. .	. .	. .	32 17.85	8.03	0.00	IV.	4	5.50	17 53.58	32.84	2.34	32 25.88	26 9 13.08
68	8.9	. .	. .	52.2	6.1	. .	. .	. .	33 5.84	8.03	0.00	IV.	2	2.32	6 16.65	32.86	1.28	33 13.87	25 57 35.07
69	8	. .	. .	. .	. .	45.2	59.	. .	33 31.24	8.03	0.00	V.	8	9.33	38 44.99	32.86	4.22	33 39.27	26 30 6.35
70	9	. .	. .	. .	. .	. .	. .	23.2	33 41.18	8.02	0.00	VII.	4	6.06	18 1.28	32.87	2.35	33 49.20	9 20.76
71	9	. .	. .	. .	. .	14.0	. .	. .	35 23.85	8.02	0.00	V.	3	12.28	16 15.22	32.89	2.19	36 21.87	7 34.52
72	8	. .	. .	. .	. .	. .	51.6	5.5	35 23.68	8.01	0.00	VI.	4	10.28	20 13.60	32.90	2.56	35 31.69	11 33.26
73	8	. .	. .	39.2	53.5	. .	. .	. .	36 53.28	8.00	0.00	IV.	8	9.56	37 56.12	32.92	2.54	37 1.28	26 29 15.74
74	9	. .	. .	54.2	. .	. .	. .	. .	41 7.72	7.97	0.00	III.	1	10.55	5 30.24	32.99	1.21	41 15.69	25 56 48.46
75	9	. .	. .	. .	. .	. .	30.0	44.5	41 2.33	7.97	0.00	VII.	1	14.29	7 17.79	32.99	1.38	41 10.30	25 58 36.18
76	6.7	. .	. .	. .	. .	. .	23.	37.2	41 55.22	7.97	0.00	VI.	4	5.07	18 32.24	33.00	2.39	42 3.19	26 9 51.63
77	9	. .	. .	. .	. .	33.	46.2	. .	43 18.74	7.96	0.00	V.	2	7.10	6 34.76	33.01	1.31	43 26.70	25 57 53.06
78	9	. .	33.	47.0	. .	. .	. .	. .	45 0.64	7.94	0.00	II.	2	3.43	6 51.28	33.03	1.34	45 8.58	25 58 9.59
79	9	. .	. .	14.	28.	. .	. .	. .	45 27.94	7.94	0.00	IV.	9	0.56	39 23.34	33.03	4.34	45 35.88	26 30 44.65
80	9	. .	. .	. .	. .	. .	18.2	. .	45 50.43	7.94	0.00	VI.	5	7.42	27 50.20	33.04	3.27	45 58.37	19 10.43
81	9	. .	. .	. .	28.	41.2	. .	. .	47 27.55	7.93	0.00	IV.	6	3.39	25 47.83	33.05	3.06	47 35.48	17 7.84
82	9	. .	. .	. .	15.6	. .	. .	. .	48 15.45	7.93	0.00	IV.	4	2.13	16 34.41	33.06	2.22	48 23.37	7 53.57
83	9	. .	. .	. .	. .	39.2	53.0	. .	48 25.24	7.92	0.00	V.	5	10.22	25 9.90	33.06	3.01	48 33.16	16 29.85
84	9	. .	. .	. .	41.5	. .	. .	. .	50 41.35	7.91	0.00	IV.	4	7.36	18 47.04	33.08	2.43	50 49.26	10 6.39
85	8.9	. .	. .	21.5	36.0	. .	. .	. .	51 35.54	7.90	0.00	IV.	4	7.50	18 54.09	33.08	2.44	51 43.44	10 13.45
86	9	. .	. .	. .	20.	33.5	. .	. .	52 19.68	7.89	0.00	IV.	4	6.28	18 12.74	33.09	2.37	52 27.57	9 32.02
87	8.9	. .	. .	. .	. .	. .	9.6	24.0	52 42.00	7.89	0.00	VI.	7	13.59	36 0.29	33.09	4.02	52 49.89	27 21.22
88	9	. .	. .	. .	1.8	15.2	. .	. .	54 1.49	7.88	0.00	IV.	9	13.37	45 47.06	33.09	4.95	54 9.37	37 8.92
89	8.9	. .	36.0	51.	. .	. .	. .	. .	55 4.33	7.87	0.00	III.	5	5.03	22 29.04	33.10	2.76	55 12.20	13 48.70
90	8.9	. .	. .	. .	18.5	31.4	. .	. .	55 17.87	7.87	0.00	IV.	3	8.39	14 19.81	33.10	2.02	55 25.74	5 38.73
91	9	15.	29.2	. .	. .	. .	. .	. .	56 57.10	7.86	0.00	II.	5	10.39	25 18.36	33.10	3.03	57 4.96	16 38.29
92	9	. .	. .	35.0	. .	. .	. .	. .	58 48.69	7.85	0.00	III.	3	13.00	16 31.36	33.11	2.23	58 56.54	7 50.48
93	8	. .	5.2	19.2	33.2	. .	. .	. .	23 59 33.01	7.84	0.00	IV.	4	9.40	19 49.56	33.11	2.53	23 59 40.85	26 11 8.98
94	9	. .	29.0	43.0	. .	. .	. .	. .	0 0 56.62	7.84	0.00	III.	1	10.21	5 13.09	33.11	1.19	0 1 4.46	25 56 31.17
95	9	. .	. .	38.2	52.2	. .	. .	. .	41 52.03	7.59	0.00	IV.	5	8.17	24 6.91	32.32	2.92	41 59.62	26 15 27.51
96	8	. .	. .	. .	48.0	1.3	. .	. .	47 47.61	7.55	0.00	IV.	7	9.46	33 52.89	32.09	3.83	47 55.16	25 14.63
97	8	. .	. .	38.3	52.8	. .	. .	. .	48 52.43	7.55	0.00	III.	6	13.08	30 34.69	32.05	3.51	48 59.98	21 56.15
98	8	. .	. .	. .	22.2	36.1	. .	. .	0 49 22.08	+ 7.54	0.00	IV.	4	8.30	−19 14.27	+32.03	−2.47	0 49 29.62	−26 10 34.71

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(136) 71. Minutes assumed as 36 instead of 35, and transit over T. IV as recorded over T. V.
(136) 73. Micrometer reading assumed as 7ʳ.56 instead of 9ʳ.56.
(136) 76. Micrometer reading assumed as 7ʳ.07 instead of 5ʳ.07.
(136) 77. Micrometer reading assumed as 3ʳ.10 instead of 7ʳ.10.
(136) 82. Micrometer reading assumed as 3ʳ.13 instead of 2ʳ.13.
(136) 94. Interval of 40 minutes.

ZONE 136. SEPTEMBER 21. H. BELT, −26° 16′. D₀=−25° 51′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	9	. .	59.2	13.	. .	. .	. .	. .	0 51 27.06	+ 7.53	0.00	III.	7	7.05	−32 31.66	+31.94	−3.69	0 51 34.59	−26 23 53.41
100	9	. .	. .	. .	. .	3.5	. .	. .	51 49.58	7.53	0.00	V.	7	10.12	34 5.96	31.92	3.84	51 57.11	25 27.88
101	8	. .	. .	. .	. .	. .	36.2	50.2	53 8.43	7.52	0.00	VI.	8	16.02	42 1.00	31.86	4.60	53 15.95	33 23.74
102	9	. .	. .	59.2	. .	27.2	. .	. .	55 13.04	7.51	0.00	IV.	3	11.05	15 33.42	31.75	2.13	55 20.55	6 53.80
103	9	. .	33.8	48.2	. .	. .	. .	. .	57 2.96	7.50	0.00	III.	7	7.03	32 30.65	31.66	3.69	57 10.46	23 53.68
104	9	47.5	1.5	16.0	. .	. .	. .	. .	57 29.61	7.50	0.00	III.	5	11.47	25 52.76	31.64	3.07	57 37.11	26 17 14.19
105	9	. .	49.2	3.2	. .	. .	. .	. .	0 59 16.82	7.49	+0.01	III.	1	9.58	5 1.49	31.55	1.15	0 59 24.32	25 56 21.09
106	9	59.3	16.6	. .	. .	. .	. .	. .	1 0 41.40	7.48	0.00	II.	6	9.37	28 48.19	31.48	3.35	1 1 48.88	26 20 10.06
107	9	. .	11.2	. .	40.2	. .	. .	. .	2 39.57	7.48	0.00	IV.	5	5.23	22 39.16	31.37	2.78	2 47.05	14 0.57
108	9	. .	. .	34.0	47.2	1.8	. .	. .	3 47.39	7.47	0.00	IV.	4	9.29	19 44.01	31.31	2.52	3 54.86	11 5.22
109	9	43.	. .	. .	25.2	. .	. .	. .	5 25.00	7.46	0.00	IV.	2	11.18	10 40.87	31.22	1.66	5 32.46	2 1.31
110	8.9	39.2	53.2	8.0	. .	. .	. .	. .	9 21.54	7.44	0.00	III.	8	5.14	36 34.39	31.00	4.08	9 28.98	27 57.47
111	9	. .	. .	58.2	. .	. .	. .	. .	12 12.17	7.43	0.00	III.	8	3.21	35 37.40	30.82	3.98	12 19.60	26 27 0.56
112	8	. .	. .	18.5	30.0	. .	. .	. .	13 30.91	7.42	+0.01	IV.	1	4.07	2 4.55	30.74	0.88	13 38.34	25 53 24.69
113	9	. .	0.	14.2	. .	. .	. .	. .	15 27.90	7.41	0.00	III.	5	0.04	19 58.28	30.62	2.54	15 35.31	26 11 20.20
114	9	35.2	49.6	3 2	. .	. .	. .	59.1	17 17.16	7.40	0.00	III.	3	9.40	14 50.52	30.51	2.07	17 24.56	26 6 12.08
115	9	. .	. .	12.5	26.	. .	. .	. .	19 25.93	7.39	+0.01	IV.	1	8.58	4 31.28	30.38	1.10	19 33.33	25 55 52.00
116	8.9	. .	. .	8.2	22.1	36.5	. .	. .	20 22.09	7.39	0.00	IV.	3	10.39	15 20.32	30.32	2.11	20 29.48	26 6 42.11
117	9	. .	. .	17.2	31.2	45.1	. .	. .	21 31.17	7.38	−0.01	IV.	9	3.30	40 40.99	30.23	4.47	21 38.54	32 5.23
118	7	. .	. .	16.2	30.2	44.	. .	. .	22 30.08	7.38	0.00	IV.	7	6.40	32 19.10	30.16	3.66	22 37.46	23 42.60
119	9	. .	. .	. .	58.2	12.	. .	. .	22 58.02	7.38	0.00	IV.	3	9.05	14 32.91	30.13	2.03	23 5.40	5 54.81
120	9	. .	. .	. .	. .	. .	46.2	0.4	23 18.43	7.37	0.00	VI.	4	6.57	18 27.20	30.11	2.37	23 25.80	9 49.46
121	9	. .	. .	. .	. .	. .	. .	57.0	24 15.05	7.37	0.00	VII.	5	7.16	23 35.77	30.04	2.87	24 22.42	14 58.60
122	9	. .	. .	. .	. .	. .	. .	16.0	24 34.10	7.37	0.00	VII.	6	5.01	26 28.79	30.02	3.12	24 41.47	17 51.89
123	9	. .	. .	. .	. .	. .	. .	52.2	26 10.12	7.36	0.00	VII.	3	6.21	13 9.83	29.90	1.90	25 17.48	4 31.83
124	9	. .	. .	. .	. .	18.5	32.1	46.2	27 4.43	7.35	0.00	VII.	7	11.36	34 47.98	29.84	2.92	26 11.78	26 11.06
125	9	. .	51.0	5.2	. .	. .	. .	. .	30 18.91	7.34	0.00	III.	4	11.24	20 41.96	29.61	2.60	30 26.25	12 4.95
126	9	8.2	22.8	36.4	. .	. .	. .	. .	29 50.50	7.34	0.00	III.	7	7.27	32 42.75	29.64	3.70	29 57.84	24 6.81
127	9	. .	4.3	18.0	. .	. .	. .	. .	30 32.06	7.34	0.00	III.	6	9.02	28 30.66	29.59	3.33	30 39.40	19 54.40
128	9	. .	. .	. .	. .	. .	8.0	. .	30 40.26	7.34	0.00	VI.	4	9.33	19 45.87	29.58	2.52	30 47.60	11 8.81
129	9	. .	. .	49.2	. .	. .	. .	. .	33 2.81	7.33	+0.01	III.	2	13.37	11 50.92	29.39	1.77	33 10.15	3 12.30
130	9	. .	34.2	48.1	3.	. .	. .	. .	38 2.45	7.31	−0.01	IV.	9	11.48	44 52.10	28.99	4.90	38 9.75	36 18.01
131	9	. .	37.2	51.5	. .	. .	. .	. .	40 5.34	7.30	0.00	III.	7	12.39	35 20.08	28.82	3.98	40 12.64	26 45.24
132	9	. .	43.2	57.2	11.2	25.8	. .	. .	41 11.29	7.30	0.00	IV.	6	11.11	29 35.74	28.72	3.42	41 18.59	21 0.44
133	9	9.	23.0	. .	. .	. .	. .	. .	42 50.95	7.29	0.00	II.	4	9.58	19 58.47	28.58	2.52	42 58.24	11 22.41
134	8	. .	. .	34.0	48.0	1.8	. .	. .	45 47.94	7.28	−0.01	IV.	9	7.25	42 39.48	28.32	4.70	45 55.21	34 5.86
135	9	. .	. .	4.2	18.	. .	. .	. .	47 17.97	7.27	0.00	IV.	7	0.03	28 58.91	28.19	3.37	47 25.24	20 24.09
136	8	. .	45.	59.0	12.8	26.2	. .	. .	48 12.58	7.27	+0.01	IV.	3	9.38	14 49.55	28.11	2.07	48 19.86	6 13.51
137	8	. .	. .	0.2	14.	28.0	. .	. .	49 13.86	7.26	+0.01	IV.	2	7.01	9 31.79	28.02	1.58	49 21.13	0 55.35
138	7.8	. .	. .	. .	58.5	12.1	. .	. .	49 58.26	7.26	0.00	IV.	6	11.41	29 50.87	27.95	3.45	50 5.52	21 16.37
139	9	. .	. .	. .	31.	45.2	58.3	. .	50 30.88	7.26	0.00	IV.	5	6.02	22 58.84	27.90	2.82	50 38.14	14 23.76
140	9	. .	. .	45.	59.2	. .	. .	. .	51 59.08	7.25	−0.01	IV.	9	11.04	44 29.92	27.76	4.83	52 6.32	35 56.99
141	9	. .	9.	23.2	37.0	. .	. .	. .	53 36.81	7.25	+0.01	IV.	2	12.25	11 14.65	27.61	1.70	53 44.07	2 38.74
142	8	. .	. .	21.6	35.4	. .	. .	. .	54 35.37	7.25	0.00	IV.	6	12.14	30 7.51	27.51	3.47	54 42.62	21 33.47
143	9	. .	. .	. .	2.	. .	. .	. .	1 55 1.85	7.24	0.00	IV.	4	5.35	18 46.53	27.47	2.42	1 55 9.09	10 11.48
144	8.9	0.8	14.5	29.	43.0	56.5	10.2	24.2	2 1 42.68	+ 7.22	−0.01	IV.	8	3.43	−35 48.54	+26.82	−4.00	2 1 49.89	−26 27 15.72
11*	7	. .	29.5	43.2	58.0	. .	. .	. .	22 32	. .	. .	IV.	3	13.02					

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(136) 106. Transit observations discordant by 3ˢ; observation of T. II used as 13ˢ.6 instead of 16ˢ.6; minutes assumed as 1 instead of 0.
(136) 123. Minutes assumed as 25 instead of 26.
(136) 124. Minutes assumed as 26 instead of 27.
(136) 137. Micrometer reading assumed as 9ʳ.01 instead of 7ʳ.01.
(136) 143. Micrometer reading assumed as 7ʳ.35 instead of 5ʳ.35.

* Omitted by copyist.

Zone 137. October 4. K. Belt, −24° 23′. D_0 = −23° 58′ 0″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	. .	45.5	. .	21 57 18.20	− 3.25	0.00	VI.	4	4.18	−17 7.03	− 6.91	−2.40	21 57 14.95	−24 15 16.34
2	8	. .	26.4	40.3	. .	. .	. .	. .	21 59 53.95	3.27	0.00	IV.	6	11.3	29 31.71	6.81	3.35	21 59 50.68	27 41.87
3	6.7	. .	40.8	54.3	8.4	. .	. .	. .	22 1 8.14	3.29	0.00	IV.	5	10.35	25 16.50	6.78	3.02	22 1 4.85	23 26.30
4	9.10	. .	. .	57.9	. .	. .	. .	. .	1 11.41	3.29	0.00	IV.	4	8.1	18 59.64	6.78	2.53	2 8.12	17 8.95
5	9	. .	7.0	21.0	34.7	. .	. .	. .	5 34.56	3.33	0.00	IV.	6	5.28	26 42.78	6.65	3.14	5 31.23	24 52.57
6	6	. .	. .	. .	26.8	40.3	. .	. .	6 26.65	3.34	+0.01	IV.	10	4.11	46 32.81	6.63	4.70	6 23.32	44 44.14
7	9	30.7	44.9	58.6	12.3	. .	. .	. .	9 12.25	3.36	0.00	IV.	7	0.38	29 16.56	6.55	3.33	9 8.89	27 26.44
8	8.9	. .	42.8	. .	10.5	. .	. .	. .	11 10.36	3.38	+0.01	IV.	8	1.48	34 50.55	6.51	3.78	11 6.99	33 0.84
9	7	. .	. .	6.0	19.2	. .	46.6	. .	16 19.25	3.43	−0.01	IV.	2	8.31	9 16.67	6.40	1.76	16 15.81	7 24.83
10	6	. .	. .	42.3	56.3	. .	. .	. .	17 56.05	3.44	0.00	IV.	6	8.42	28 20.62	6.36	3.26	17 52.61	26 30.24
11	8	57.8	11.8	25.7	39.3	53.0	6.4	20.5	21 39.31	3.47	+0.01	IV.	8	9.46	38 51.59	6.30	4.09	21 35.85	37 1.98
12	9	. .	. .	45.2	. .	. .	. .	. .	25 58.53	3.51	−0.01	IV.	1	11.14	5 39.86	6.24	1.48	25 55.01	3 47.58
13	6	. .	56.8	. .	24.7	. .	51.3	. .	27 24.30	3.53	+0.01	IV.	10	7.31	47 43.41	6.22	4.83	27 20.78	45 54.46
14	9	. .	. .	. .	28.4	. .	. .	. .	29 28.25	3.55	−0.01	IV.	1	8.16	4 10.11	6.19	1.36	29 24.69	2 17.66
15	9.10	. .	. .	16.8	. .	. .	. .	. .	31 30.47	3.56	0.00	IV.	6	11.3	29 31.71	6.17	3.35	31 26.91	27 41.23
16	7	. .	27.5	. .	55.3	. .	. .	. .	32 55.04	3.58	0.00	IV.	4	9.34	19 46.54	6.17	2.58	32 51.46	17 55.29
17	9	. .	49.8	. .	17.5	. .	. .	. .	36 17.36	3.61	0.00	IV.	7	11.40	34 50.37	6.15	3.78	36 13.75	33 0.30
18	7.8	30.9	44.8	58.9	12.8	26.4	39.5	53.5	43 12.47	3.67	0.00	IV.	7	12.43	35 22.13	6.13	3.82	43 8.80	33 32.08
19	8.9	. .	51.6	5.0	18.8	32.5	. .	. .	45 18.90	3.69	+0.01	IV.	9	12.32	45 14.29	6.14	4.62	45 14.22	43 25.05
20	9	. .	. .	. .	6.1	. .	. .	. .	47 5.95	3.70	0.01	IV.	10	7.56	47 56.02	6.14	4.84	47 2.26	46 7.00
21	9	. .	. .	. .	15.9	. .	. .	. .	49 15.75	3.72	+0.01	IV.	9	2.24	40 7.71	6.14	4.19	49 12.04	38 18.04
22	9	. .	. .	20.2	. .	. .	. .	. .	50 33.90	3.73	0.00	IV.	7	5.26	31 41.78	6.14	3.53	50 30.17	29 51.45
23	9.8	. .	. .	. .	. .	. .	. .	25.9	22 50 44.50	3.74	0.00	VII.	4	3.53	16 54.23	6.15	2.36	22 50 40.76	15 2.74
24	8	. .	. .	. .	. .	. .	59.3	. .	23 4 31.92	3.86	+0.01	VII.	9	1.56	39 53.24	6.31	4.19	23 4 28.07	38 3.74
25	7	. .	7.4	. .	35.3	. .	. .	. .	8 34.93	3.90	−0.01	IV.	2	−1.14	4 19.19	6.38	1.43	8 31.02	2 27.00
26	7.8	. .	20.1	34.5	47.8	1.5	. .	. .	11 47.63	3.92	+0.01	IV.	1	8.58	4 31.28	6.45	1.38	11 43.72	2 39.11
27	9	15.5	. .	43.5	57.0	. .	. .	. .	14 56.90	3.94	0.00	IV.	4	6.18	18 7.70	6.53	2.48	14 52.96	16 16.71
28	9	. .	. .	. .	. .	. .	. .	53.6	15 12.17	3.95	0.00	IV.	3	9.17	14 38.96	6.54	2.18	15 8.22	12 47.68
29	9	. .	. .	49.7	. .	17.6	. .	. .	31 3.65	4.09	0.00	IV.	7	6.49	32 23.64	7.04	3.58	30 59.56	30 34.26
30	8	. .	. .	. .	58.8	. .	. .	. .	33 58.65	4.11	0.00	IV.	6	8.33	28 16.08	7.16	3.26	33 54.54	26 26.50
31	9	. .	57.5	. .	25.7	. .	. .	. .	35 25.30	4.12	+0.01	IV.	7	6.31	32 14.56	7.22	4.38	35 21.19	30 26.16
32	7.8	. .	41.0	55.1	. .	. .	. .	. .	37 8.55	4.14	0.00	IV.	5	4.5	21 59.84	7.29	2.77	37 4.41	20 9.90
33	9	. .	59.9	. .	. .	. .	. .	. .	41 27.20	4.17	0.00	IV.	2	0.31	5 14.63	7.48	1.43	41 23.03	3 23.54
34	9	. .	. .	. .	39.0	. .	. .	. .	52 38.85	4.26	0.00	IV.	4	8.14	19 6.20	8.07	2.53	52 34.59	17 16.80
35	10	. .	. .	. .	. .	39.5	. .	. .	53 25.72	4.27	0.00	IV.	4	5.52	17 54.59	8.12	2.45	53 21.45	16 5.16
36	9	. .	. .	. .	. .	53.9	. .	. .	55 40.18	4.29	0.00	IV.	6	9.30	28 44.82	8.25	3.29	55 35.89	26 56.36
37	9	. .	26.4	. .	54.0	. .	. .	. .	22 59 53.94	− 4.32	0.00	IV.	9	4.37	−41 14.78	− 8.50	−4.32	23 59 49.62	−24 39 27.60

Zone 138. October 15. H. Belt, −28° 46′. D_0 = −27° 53′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	20.2	35.	49.2	. .	. .	. .	. .	22 30 3.24	−16.85	0.00	.	4	6.39	−19 18.81	−10.23	−2.38	22 29 46.39	−28 13 21.42
2	9.10	. .	. .	. .	. .	18.2	. .	. .	30 3.91	16.85	−0.01	.	3	5.32	12 45.51	10.23	1.58	30 47.05	6 47.32
3	9	. .	. .	. .	. .	50.2	4.4	. .	30 35.96	16.86	−0.01	.	2	8.22	9 12.13	10.20	1.21	30 19.09	3 13.54
4	9	. .	. .	. .	. .	. .	23.2	38.1	30 54.99	16.86	0.00	.	6	5.313	26 44.45	10.18	3.21	30 38.13	20 47.84
5	9	. .	. .	. .	8.2	23.	. .	. .	32 8.37	16.87	−0.01	.	2	10.53	10 28.27	10.11	1.35	31 51.49	4 29.73
6	9	. .	. .	. .	. .	. .	. .	50.2	32 7.27	16.87	0.00	.	7	7.205	32 39.51	10.11	3.91	31 50.40	26 43.53
7	8.9	. .	. .	11.2	25.2	39.2	. .	. .	33 25.05	16.89	−0.01	.	2	6.458	8 23.62	10.04	1.13	33 8.15	2 24.79
8	8.9	. .	. .	3.7	17.3	31.8	. .	. .	22 34 17.46	−16.90	−0.01	.	3	11.44	−15 53.09	− 9.99	−1.95	22 34 0.55	−28 9 55.03

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Oct. 4,	19	f 9.91	g 0.044			
Oct. 15,	19	f 23.20	g 0.040			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1847.	h. m.	in.	°	°
Zone 137	Oct. 4,	9 5	30.040	63.5	52.5
Zone 138	Oct. 15,	9 5	30.276	62.0	37.5

REMARKS.

(137) 4. Minutes assumed as 2 instead of 1.
(137) 6. Micrometer reading assumed as $5^r.11$ instead of $4^r.11$.
(137) 25. Micrometer reading assumed as $1^t\ 8^r.34$, to agree with W. Transit 1847, Z. 33, October 18, and Argel. 257, 91.
(138) 1. Micrometer reading assumed as $8^r.39$ instead of $6^r.39$.

Zone 138. October 15. H. Belt, −28° 46′. $D_0 = -27° 53' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	9	. .	. .	. .	. .	4.2	19.2	. .	22 34 50.36	−16.90	+0.01	.	10	4.205	−46 7.35	− 9.96	−5.50	22 34 33.47	−28 40 12.81
10	9	. .	. .	44.	58.	12.1	. .	. .	35 57.89	16.92	−0.01	.	1	10.194	5 12.33	9.90	0.77	35 40.96	27 59 13.00
11	9	. .	. .	51.2	5.2	. .	. .	. .	37 5.15	16.93	−0.01	.	2	11.185	10 41.12	9.83	1.39	36 48.21	28 4 42.34
12	9	. .	. .	. .	3.2	. .	. .	. .	38 3.04	16.94	0.00	IV.	4	3.350	16 45.51	9.78	2.04	37 46.10	10 47.33
13	9	42.8	57.	10.8	. .	. .	. .	. .	39 25.27	16.95	0.00	IV.	4	1.438	16 19.69	9.70	2.00	39 8.32	10 21.39
14	9	. .	. .	25.2	38.5	53.	. .	. .	39 38.76	16.96	0.00	.	3	10.378	15 19.71	9.69	1.88	39 21.80	9 21.28
15	7.8	. .	. .	16.0	30.2	44.2	. .	. .	40 29.98	16.96	0.00	.	6	4.03	27 0.44	9.65	3.24	40 13.02	21 3.33
16	9	14.2	29.	43.2	. .	11.2	. .	. .	42 57.17	16.99	−0.01	.	2	11.186	10 41.17	9.52	1.39	42 40.17	4 42.08
17	9	. .	3.0	17.8	. .	46.	. .	. .	44 31.65	17.01	0.00	.	3	13.390	16 51.07	9.44	2.07	44 14.64	10 52.58
18	9	. .	30.8	. .	59.2	. .	. .	41.2	46 59.09	17.04	+0.01	IV.	9	11.354	44 45.75	9.32	5.33	46 42.06	38 50.40
19	10	. .	29.0	. .	. .	. .	. .	. .	48 57.61	17.06	0.00	II.	6	12.27	30 13.87	9.22	3.62	48 40.55	24 16.71
20	9	. .	. .	. .	. .	30.2	. .	. .	49 15.98	17.06	+0.01	V.	8	11.073	39 32.53	9.21	4.70	48 58.93	33 36.44
21	10	. .	. .	. .	. .	. .	. .	22.8	49 39.90	17.07	0.00	VII.	5	11.42	25 49.86	9.19	3.10	49 22.83	19 52.15
22	10	. .	. .	. .	. .	. .	. .	47.2	50 4.18	17.07	0.00	VII.	3	12.20	16 10.81	9.17	1.99	49 47.11	10 11.97
23	9	. .	. .	58.4	. .	. .	. .	. .	52 12.26	17.09	−0.01	III.	2	4.34	7 17.12	9.08	0.99	51 55.16	1 17.19
24	9	. .	. .	. .	. .	32.5	. .	. .	52 18.32	17.10	+0.01	V.	10	11.082	49 32.88	9.07	5.89	52 1.23	43 37.84
25	9	. .	. .	. .	. .	. .	. .	24.0	52 41.35	17.10	+0.01	VII.	10	4.580	46 25.84	9.05	5.55	52 24.26	40 30.44
26	9.10	. .	. .	3.5	18.0	. .	. .	0.2	54 17.50	17.12	0.00	IV.	3	10.454	15 23.54	8.99	1.89	54 0.38	28 9 25.42
27	9	. .	. .	. .	3.3	. .	. .	. .	56 3.14	17.14	−0.01	III.	.	6.133	3 8.18	8.91	0.53	55 45.99	27 57 7.62
28	6.7	. .	. .	46.1	0.1	. .	. .	. .	57 59.92	17.16	−0.01	IV.	1	5.158	2 39.23	8.83	0.40	57 42.75	27 56 38.54
29	9	. .	. .	. .	38.0	. .	. .	20.	22 58 37.45	17.17	0.00	IV.	5	4.123	22 3.52	8.80	2.66	22 58 20.28	28 16 4.98
30	9	. .	41.5	56.2	. .	24.2	. .	. .	23 [1] 9.89	17.19	−0.01	III.	1	7.452	3 54.52	8.70	0.63	23 0 52.69	27 57 53.85
31	9	. .	58.3	12.4	26.2	41.2	55.2	. .	2 26.56	17.21	0.00	IV.	3	4.000	11 59.12	8.65	1.52	2 9.35	28 5 59.29
32	9	. .	. .	. .	. .	. .	21.	. .	2 52.49	17.21	+0.01	VI.	10	3.058	45 29.49	8.63	5.41	2 35.29	39 33.53
33	10	. .	. .	. .	20.2	. .	. .	1.8	4 19.54	17.23	0.00	IV.	8	3.29	35 41.48	8.58	4.26	4 2.31	29 44.32
34	9	. .	29.0	43.	58.	. .	. .	40.2	5 57.33	17.25	0.00	III.	3	3.398	11 48.88	8.52	1.50	5 40.08	5 48.90
35	9	. .	12.5	27.	. .	. .	. .	. .	7 41.09	17.27	0.00	III.	5	10.125	25 5.10	8.46	3.01	7 23.82	19 6.57
36	9	. .	. .	46.2	1.0	. .	. .	. .	8 0.73	17.27	0.00	IV.	9	9.145	43 34.70	8.44	5.21	8 43.46	28 37 38.35
37	9	. .	. .	. .	. .	. .	25.2	. .	7 56.89	17.27	−0.01	VI.	1	11.264	5 45.92	8.45	0.82	7 39.61	27 59 45.19
38	9	27.2	42.	56.2	10.5	. .	. .	. .	13 10.52	17.33	0.00	IV.	8	13.400	35 50.87	8.27	4.29	12 53.19	28 29 53.43
39	9	. .	. .	. .	32.5	46.	. .	. .	13 32.07	17.33	0.00	IV.	9	10.158	44 5.61	8.26	5.23	13 14.74	37 9.10
40	10	. .	. .	. .	57.5	. .	. .	. .	14 57.34	17.34	0.00	IV.	5	6.20	23 7.91	8.22	2.76	14 40.00	17 8.89
41	8	. .	51.2	6.	20.	. .	. .	. .	16 19.80	17.36	0.00	IV.	3	4.362	12 17.38	8.17	1.55	16 2.44	6 17.10
42	8	. .	33.0	47.4	1.2	. .	. .	. .	17 1.30	17.37	0.00	IV.	4	2.475	16 21.56	8.15	1.99	16 43.93	10 21.70
43	9	. .	. .	. .	. .	. .	28.0	. .	16 59.53	17.37	0.00	VI.	8	9.398	38 48.27	8.15	4.62	16 42.16	32 51.04
44	9	. .	. .	. .	. .	. .	58.2	. .	17 29.73	17.37	0.00	VI.	8	9.402	38 48.47	8.14	4.62	17 12.36	32 51.23
45	6	. .	. .	. .	30.3	44.2	. .	. .	18 30.02	17.38	0.00	IV.	4	11.592	20 59.75	8.11	2.54	18 12.64	15 0.40
46	8	. .	23.8	38.2	. .	6.2	20.2	. .	18 52.02	17.39	0.00	III.	3	4.300	12 14.20	8.10	1.54	18 34.63	6 13.84
47	9	. .	9.0	23.1	37.2	. .	5.3	. .	21 37.21	17.42	0.00	VII.	7	4.445	31 20.44	8.02	3.74	21 19.79	25 22.20
48	9	. .	. .	. .	42.5	. .	. .	. .	22 42.34	17.43	0.00	IV.	2	8.210	9 11.12	7.99	1.21	22 24.91	3 10.32
49	9	. .	. .	. .	10.2	24.2	. .	. .	23 9.95	17.43	0.00	IV.	3	6.41	13 20.30	7.98	1.69	22 52.52	7 19.97
50	9	. .	. .	. .	. .	48.6	. .	. .	23 34.28	17.44	0.00	V.	4	6.162	18 6.75	7.97	2.19	23 16.84	28 12 6.91
51	9	. .	. .	. .	. .	36.8	. .	. .	24 22.42	17.45	−0.01	V.	1	8.185	4 11.31	7.95	0.64	24 4.96	27 58 9.90
52	9	24.8	. .	. .	8.0	. .	. .	. .	27 7.82	17.48	0.00	IV.	4	11.238	20 41.89	7.88	2.50	26 50.34	28 14 42.27
53	6.7	. .	44.	58.2	3.8	. .	. .	. .	28 2.42	17.49	0.00	IV.	5	9.343	24 45.89	7.86	2.97	27 44.93	18 46.72
54	9	. .	. .	. .	. .	21.8	. .	. .	28 7.46	17.49	0.00	V.	3	5.183	12 38.54	7.86	1.61	27 49.97	6 38.01
55	10	. .	. .	. .	22.2	. .	. .	. .	30 22.04	17.51	0.00	IV.	2	12.130	11 8.60	7.80	1.42	30 4.53	28 5 7.82
56	9	. .	19.2	33.2	. .	2.3	. .	0.3	31 47.50	17.53	0.00	III.	1	10.375	5 21.41	7.78	0.77	31 29.97	27 59 19.96
57	9	. .	14.2	28.2	42.0	. .	. .	. .	23 33 42.26	−17.55	0.00	IV.	4	9.552	−19 57.22	− 7.74	−2.42	23 33 24.71	−28 13 57.38

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(138) 13. Micrometer reading assumed as $2^r.438$ instead of $1^r.438$.
(138) 15. Micrometer reading assumed as $6^r.03$ instead of $4^r.03$.
(138) 38. Hor. thread assumed as 7 instead of 8.
(138) 53. Times of transit over T.'s II and III assumed to have been recorded 10^s too late.

ZONE 138. OCTOBER 15. H. BELT, −28° 46′. D_0=−27° 53′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
58	9	0.2	14.	28.8	. .	57.2	11.	. .	23 34 42.92	−17.56	0.00	III.	7	10.150	−34 7.46	− 7.73	−4.07	23 34 25.36	−28 28 9.26
59	9	. .	. .	. .	50.	. .	. .	. .	35 49.84	17.57	0.00	IV.	6	10.073	29 3.63	7.71	3.47	35 31.27	23 4.81
60	9	. .	. .	. .	35.	49.2	. .	. .	36 34.84	17.58	0.00	V.	2	5.342	7 47.47	7.69	1.05	36 17.26	1 46.21
61	9	24.2	38.3	53.	7.3	. .	. .	. .	38 7.12	17.59	0.00	IV.	6	6.298	27 13.95	7.66	3.27	37 49.53	21 14.88
62	9	42.8	57.0	11.5	. .	. .	. .	. .	39 25.56	17.60	0.00	III.	3	10.322	15 16.84	7.64	1.89	39 7.96	9 16.37
63	9	. .	. .	34.5	49.3	. .	. .	. .	40 49.07	17.62	+0.01	IV.	10	11.302	49 44.03	7.62	5.93	40 31.46	43 47.58
64	9	. .	. .	. .	. .	. .	44.8	. .	41 16.38	17.62	0.00	VI.	6	10.070	29 3.29	7.61	3.48	40 58.76	23 4.38
65	7	. .	. .	. .	. .	. .	18.2	32.2	41 49.63	17.63	+0.01	VI.	10	6.30	47 12.47	7.61	5.62	41 32.01	28 41 15.70
66	9	. .	. .	. .	. .	. .	8.2	. .	42 39.89	17.64	−0.01	VI.	1	8.05	4 4.38	7.60	0.62	42 22.24	27 58 2.60
67	9	. .	. .	. .	. .	. .	18.0	. .	46 49.52	17.69	0.00	VI.	8	12.390	40 18.63	7.54	4.84	46 31.83	28 34 21.01
68	9	. .	. .	. .	4.0	18.2	32.2	. .	48 3.85	17.70	0.00	V.	5	4.532	22 24.09	7.53	2.71	47 46.15	26 24.23
69	9	. .	56.3	10.8	24.5	39.2	. .	. .	51 24.89	17.73	0.00	IV.	9	7.07	42 30.41	7.49	5.06	51 7.16	36 32.96
70	9	49.2	. .	18.5	32.3	. .	. .	. .	52 32.46	17.75	0.00	IV.	8	8.536	38 25.16	7.49	4.59	52 14.71	32 27.24
71	9	12.2	. .	40.	55.5	. .	. .	. .	53 54.95	17.76	0.00	IV.	6	9.153	28 37.40	7.48	3.41	53 37.19	28 22 38.29
72	7.8	. .	23.	37.8	. .	. .	. .	. .	54 51.48	17.77	0.00	III.	1	8.430	4 23.67	7.48	0.66	54 33.71	27 58 21.81
73	9	. .	51.	. .	6.2	. .	50.	. .	57 20.40	17.79	0.00	IV.	3	3.313	11 44.64	7.47	1.45	57 2.61	28 5 43.56
74	9	. .	. .	. .	51.3	5.3	. .	34.2	57 51.08	17.80	0.00	IV.	3	4.46	12 22.32	7.47	1.54	57 33.28	6 21.33
75	9	. .	10.5	. .	. .	. .	. .	. .	59 39.12	17.82	0.00	II.	7	4.382	31 17.49	7.46	3.74	59 21.30	25 18.69
76	8.9	. .	. .	41.2	55.3	9.6	. .	. .	23 59 55.29	17.82	0.00	IV.	4	9.54	19 56.62	7.46	2.42	23 59 37.47	13 56.50
77	9	. .	. .	. .	. .	. .	58.0	. .	0 0 29.61	17.82	0.00	VI.	5	7.10	23 32.93	7.46	2.82	0 0 11.79	17 33.21
78	6	. .	46.2	0.4	15.2	. .	. .	. .	4 14.94	17.86	0.00	IV.	9	10.262	44 10.86	7.49	5.24	3 57.08	38 13.59
79	8.9	. .	. .	38.2	53.1	7.5	. .	. .	4 52.95	17.87	0.00	IV.	9	8.285	43 11.50	7.50	5.14	4 35.08	37 14.14
80	9	. .	21.8	36.2	51.	. .	. .	. .	5 50.68	17.88	0.00	IV.	9	11.475	44 51.85	7.50	5.32	5 32.80	38 54.67
81	8	19.6	33.8	47.8	2.0	. .	. .	. .	7 2.23	17.89	0.00	IV.	6	7.166	27 37.55	7.51	3.31	6 44.34	21 38.37
82	9	. .	. .	. .	. .	. .	22.	. .	6 53.69	17.89	0.00	VI.	2	2.270	6 12.93	7.51	0.85	6 35.80	0 11.29
83	9	. .	. .	. .	45.	59.2	. .	. .	7 44.88	17.90	0.00	V.	6	4.334	26 15.21	7.51	3.15	7 26.98	20 15.87
84	9	. .	. .	41.	. .	. .	. .	. .	8 55.41	17.91	0.00	III.	9	7.152	42 34.49	7.52	5.07	8 37.50	28 36 37.08
85	9	. .	. .	. .	. .	18.2	. .	. .	9 3.83	17.91	0.00	V.	1	9.310	4 47.87	7.52	0.69	8 45.92	27 58 46.08
86	9	. .	. .	. .	. .	. .	. .	49.0	9 5.90	17.91	0.00	VII.	2	8.349	9 18.22	7.52	1.20	8 47.99	28 3 16.94
87	10	. .	22.5	. .	. .	. .	. .	. .	11 51.18	17.94	0.00	III.	8	6.46	37 20.78	7.56	4.46	11 33.24	31 22.80
88	9	. .	9.2	23.2	. .	. .	. .	. .	12 37.68	17.95	0.00	III.	7	12.58	35 29.64	7.57	4.24	12 19.73	29 31.45
89	9	. .	15.2	. .	. .	. .	12.2	. .	13 43.74	17.96	0.00	II.	2	9.180	9 40.17	7.59	1.25	13 25.78	3 39.01
90	9	. .	. .	40.2	54.4	. .	. .	. .	14 54.24	17.97	0.00	IV.	4	9.556	19 57.42	7.61	2.42	14 36.27	13 57.45
91	9	2.5	17.2	31.1	. .	. .	. .	. .	16 45.46	17.99	0.00	III.	4	11.310	20 45.48	7.64	2.51	16 27.47	14 45.63
92	9	. .	. .	23.3	. .	. .	. .	. .	17 51.99	18.00	0.00	III.	8	8.445	38 20.53	7.66	4.57	17 33.99	32 22.76
93	6.7	. .	4.0	18.	32.8	. .	0.3	. .	18 32.47	18.01	0.00	IV.	8	8.504	38 23.55	7.67	4.57	18 14.46	32 25.79
94	9	. .	22.0	36.1	50.6	. .	. .	. .	21 50.27	18.04	0.00	IV.	4	8.492	19 23.95	7.74	2.34	21 32.23	13 24.03
95	9	. .	17.2	32.1	46.	. .	. .	. .	22 46.11	18.05	0.00	IV.	2	11.065	10 35.08	7.76	1.34	22 28.06	4 34.18
96	9	. .	. .	25.	. .	. .	. .	. .	24 39.45	18.07	0.00	III.	9	13.005	45 28.60	7.82	5.43	24 21.38	39 31.85
97	9	. .	. .	28.5	. .	. .	. .	. .	26 42.76	18.09	0.00	III.	7	7.110	32 34.67	7.87	3.89	26 24.67	26 36.43
98	8.9	. .	5.	19.8	. .	. .	. .	. .	28 33.58	18.11	0.00	III.	3	4.186	12 8.44	7.93	1.50	29 15.47	6 7.87
99	8	. .	. .	. .	35.8	. .	3.8	. .	28 35.53	18.11	0.00	VI.	5	−0.372	45.13	7.93	2.51	?28 17.42	14 45.57
100	8.9	. .	. .	. .	0.4	14.2	28.1	. .	31 59.95	18.14	0.00	IV.	7	7.402	32 49.45	8.03	3.92	31 41.81	28 26 51.40
101	9	. .	. .	. .	. .	. .	5.5	. .	31 37.19	18.13	0.00	VI.	1	11.40	5 52.78	8.02	0.80	31 19.06	27 59 51.60
102	9	. .	. .	. .	. .	. .	35.2	. .	32 6.88	18.14	0.00	VI.	2	4.436	7 21.81	8.04	0.97	31 48.74	28 1 20.82
103	8.9	. .	. .	12.	26.2	. .	. .	. .	33 26.02	18.15	0.00	IV.	4	3.162	11 37.03	8.08	1.47	33 7.87	5 36.58
104	8.7	. .	. .	. .	. .	56.6	9.8	. .	33 41.86	18.15	0.00	V.	5	5.538	17 55.45	8.09	2.18	33 23.71	11 55.72
105	10	. .	. .	. .	. .	48.8	. .	. .	34 34.45	18.16	0.00	V.	2	10.031	10 3.11	8.12	1.27	34 16.29	4 2.50
106	9	. .	. .	. .	47.5	1.5	. .	. .	0 35 47.31	−18.17	0.00	IV.	8	8.360	−38 16.30	− 8.17	−4.57	0 35 29.14	−28 32 19.04

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(138) 73. Transit over T. III assumed as recorded over T. IV.
(138) 98. Minutes assumed as 29 instead of 28.
(138) 99. Micrometer reading assumed as 1 instead of 0.
(138) 103. Micrometer thread assumed as 3 instead of 4.
(138) 104. Micrometer thread assumed as 4 instead of 5.

Zone 138. October 15. H. Belt, −28° 46′. $D_o = -27° 53' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
107	9	. .	29.2	43.2	. .	. .	. .	. .	0 37 57.82	−18.19	0.00	III.	10	5.112	−46 32.86	− 8.25	−5.56	0 37 39.63	−28 40 36.67
108	9	. .	. .	. .	7.3	. .	. .	. .	38 7.14	18.19	0.00	IV.	9	4.485	41 20.57	8.25	4.93	37 48.95	35 23.75
109	9	. .	. .	. .	. .	45.8	. .	. .	38 31.62	18.20	0.00	V.!	10	8.156	48 5.85	8.27	5.75	38 13.42	42 9.87
110	9.10	. .	. .	. .	. .	. .	20.	. .	38 51.53	18.20	0.00	VI.	8	10.30	39 13.59	8.28	4.69	38 33.33	33 16.56
111	9	. .	52.9	7.	20.9	. .	. .	. .	42 21.16	18.23	0.00	IV.	7	4.500	31 23.63	8.43	3.74	42 2.93	25 25.80
112	9	. .	49.5	4.2	. .	. .	. .	. .	43 18.14	18.24	0.00	III.	5	2.552	21 24.59	8.47	2.59	42 59.90	15 25.65
113	9	. .	. .	. .	35.0	49.	. .	. .	43 34.77	18.24	0.00	IV.	5	2.212	21 7.49	8.48	2.55	43 16.53	15 8.52
114	9	. .	29.	43.6	58.	. .	. .	. .	44 57.77	18.25	0.00	IV.	7	6.392	32 18.70	8.55	3.87	44 39.52	26 21.12
115	9	. .	. .	36.5	. .	. .	. .	. .	45 50.56	18.26	0.00	III.	4	11.195	20 39.68	8.59	2.50	45 32.30	14 40.77
116	6.7	. .	28.2	43.	57.1	. .	. .	39.5	48 57.01	18.29	0.00	IV.	8	14.331	41 16.34	8.73	4.93	48 38.72	35 20.00
117	9	8.0	. .	37.	. .	. .	. .	. .	53 50.86	18.33	0.00	III.	2	4.372	7 18.73	8.98	0.96	53 32.53	28 1 18.67
118	9	. .	. .	. .	. .	57.0	. .	. .	53 42.61	18.33	0.00	V.	1	3.559	1 58.75	8.98	0.37	53 24.28	27 55 58.10
119	9	. .	. .	. .	34.0	48.2	. .	. .	54 33.87	18.34	0.00	IV.	5	3.070	21 30.59	9.02	2.60	54 15.53	28 15 32.21
120	9	. .	32.	46.4	. .	. .	. .	. .	56 0.63	18.35	0.00	III.	7	4.410	31 19.04	9.10	3.74	55 42.28	25 21.88
121	9	. .	. .	. .	. .	25.5	. .	. .	56 11.28	18.36	0.00	V.	8	8.53	38 24.81	9.11	4.59	55 52.92	32 28.51
122	8	. .	. .	. .	. .	. .	51.5	6.	56 23.18	18.36	0.00	VI.	10	6.265	47 10.70	9.12	5.64	56 4.82	41 15.46
123	9	. .	. .	. .	. .	. .	51.3	. .	57 23.00	18.37	0.00	VI.	1	7.306	3 47.02	9.17	0.55	57 4.63	27 57 46.74
124	9	. .	35.0	. .	3.5	. .	31.3	. .	0 59 3.28	18.38	0.00	IV.	6	11.393	29 50.02	9.26	3.57	0 58 44.90	28 23 52.85
125	6.7	2.1	16.2	30.	44.8	59.	13.	27.1	1 0 44.69	18.39	0.00	IV.	8	6.56	37 25.87	9.35	4.48	1 0 26.30	31 29.70
126	9	. .	16.2	30.1	45.1	. .	. .	. .	2 0 44.75	−18.39	0.00	IV.	8	7.440	−37 50.07	− 9.35	−4.53	1 0 26.36	−28 31 53.95

Zone 139. October 15. H. Belt, −28° 46′. $D_o = -27° 53' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	12.	26.8	41.	. .	. .	. .	2 1 40.76	−18.87	0.00	IV.	5	6.226	−23 9.22	. .	2.7	2 1 21.89	−28 17 9.
2	9	. .	. .	. .	30.2	. .	. .	. .	2 30.04	18.88	+0.01	IV.	3	6.578	13 28.77	. .	1.68	2 11.17	7 21.
3	9	. .	. .	. .	. .	. .	14.2	29.1	2 45.99	18.88	0.00	VI.	5	5.515	22 53.34	. .	2.75	2 27.11	
4	9	. .	. .	. .	2.1	16.	. .	. .	4 1.86	18.89	−0.01	IV.	8	6.525	37 24.10	. .	4.47	3 42.96	31 28.
5	7.8	. .	. .	31.0	45.	. .	13.1	28.	5 44.90	18.90	0.00	IV.	4	8.070	19 17.80	. .	2.33	5 26.00	13 5.
6	9	. .	. .	. .	. .	. .	. .	27.	6 44.30	18.91	−0.01	VII.	9	4.460	41 18.90	. .	4.94	6 25.38	
7	7	. .	. .	. .	55.2	9.2	22.8	. .	7 54.78	18.92	−0.01	IV.	9	6.408	42 17.20	. .	5.05	7 35.85	36 20.
8	10	. .	. .	. .	48.2	. .	16.8	. .	8 48.24	18.92	+0.01	IV.	3	9.17	14 38.96	. .	1.80	8 29.33	
9	10	. .	. .	7.5	. .	. .	. .	. .	13 21.76	18.95	0.00	III.	7	7.450	32 51.82	. .	3.92	13 2.81	
10	8.9	. .	. .	45.0	59.1	. .	. .	. .	13 58.87	18.95	+0.01	IV.	1	7.340	3 48.93	. .	0.55	13 39.93	
11	9	. .	. .	. .	. .	. .	33.1	48.	14 4.92	18.95	0.00	VII.	6	10.474	29 23.43	. .	3.51	13 45.97	
12	7.8	. .	. .	27.3	41.8	56.1	. .	24.1	15 41.63	18.96	−0.01	IV.	8	9.280	38 42.50	. .	4.63	15 22.66	
13	9	. .	. .	40.3	. .	. .	. .	. .	19 54.32	18.99	+0.01	III.	4	5.590	17 58.07	. .	2.18	19 35.34	
14	9	. .	41.3	55.2	9.2	. .	38.0	. .	21 9.45	19.00	0.00	IV.	5	7.480	23 52.28	. .	2.87	20 50.45	
15	9	4.4	. .	33.1	. .	. .	. .	. .	22 47.16	19.01	+0.01	III.	2	11.13	10 38.30	. .	1.34	22 28.16	
16	9	. .	. .	. .	. .	9.	. .	. .	22 54.61	19.01	0.02	V.	1	3.14	1 37.77	. .	0.30	22 35.62	
17	9	29.5	. .	. .	. .	. .	. .	. .	24 12.39	19.02	0.01	I.	2	8.188	9 10.09	. .	1.18	23 53.38	
18	8.9	. .	. .	1.0	15.	. .	43.2	. .	24 14.89	19.02	+0.01	IV.	3	12.195	16 10.98	. .	1.97	24 55.88	
19	8.9	. .	. .	. .	56.2	10.	. .	. .	25 55.90	19.03	−0.01	IV.	7	8.200	33 9.52	. .	3.95	25 36.86	
20	9	. .	. .	. .	. .	. .	48.	. .	26 19.61	19.03	0.00	VI.	5	3.410	21 47.54	. .	2.63	26 0.58	
21	9	. .	. .	10.2	. .	. .	. .	. .	28 24.04	19.04	+0.01	III.	2	2.202	6 9.64	. .	0.80	28 5.01	
22	9	. .	. .	52.0	6.2	. .	. .	. .	28 6.26	19.04	−0.01	IV.	10	7.230	47 39.37	. .	5.72	27 47.21	
23	9	. .	. .	. .	. .	41.0	. .	. .	29 26.68	19.05	+0.01	V.	4	3.422	16 49.09	. .	2.06	29 7.64	
24	9	. .	2.8	17.	. .	. .	. .	. .	32 31.12	19.06	0.01	III.	3	11.168	15 39.32	. .	1.91	32 12.07	
25	9	. .	. .	. .	. .	3.0	. .	. .	2 ?32 48.63	−19.06	+0.02	V.	2	1.045	− 5 31.47	. .	−0.74	2 32 29.59	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(139) Telescope not well clamped.
(139) 18. Minutes assumed as 25 instead of 24.
[(138) 126. This star belongs to the following Zone.]

ZONE 139. OCTOBER 15. H. BELT, −28° 46′. D_0 = −27° 53′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
26	9	. .	. .	. .	45.	59.3	. .	. .	2 33 44.98	−19.07	−0.02	IV.	10	9.305	−48 43.67	. .	−5.87	2 33 25.89	
27	9	. .	49.	3.8	. .	. .	. .	. .	35 17.62	19.08	0.01	III.	3	11.050	15 33.37	. .	1.90	34 58.53	
28	9	. .	. .	30.5	. .	. .	. .	. .	35 44.88	19.08	−0.01	III.	9	4.580	41 25.31	. .	4.95	35 25.79	
29	9	. .	. .	. .	. .	9.3	. .	. .	35 54.93	19.08	+0.02	V.	2	2.226	6 10.85	. .	0.80	35 35.87	
30	8	49.6	3.5	18.0	32.2	. .	0.3	. .	37 32.24	19.09	−0.01	IV.	8	8.145	38 5.45	. .	4.55	37 13.14	
31	9	. .	. .	. .	. .	31.0	. .	. .	40 16.76	19.10	−0.01	VI.	7	11.142	34 37.17	. .	4.14	39 57.65	
32	9	. .	. .	1.3	. .	. .	44.2	. .	42 15.57	19.11	+0.01	IV.	3	12.026	16 2.46	. .	1.96	41 56.47	
33	6.	. .	14.6	29.1	43.3	. .	11.1	. .	43 43.13	19.12	−0.01	IV.	8	11.346	39 46.35	. .	4.75	43 24.00	
34	9	. .	50.3	4.4	19.	. .	. .	. .	45 18.71	19.13	0.00	IV.	4	12.033	21 1.81	. .	2.54	44 59.58	
35	8.9	. .	54.1	8.4	22.8	36.8	. .	. .	46 22.70	19.13	−0.01	IV.	8	12.350	40 16.80	. .	4.83	46 3.56	
36	9	. .	56.4	10.	24.4	. .	. .	. .	47 24.52	19.14	0.01	IV.	7	10.00	33 59.95	. .	4.06	47 5.37	
37	9	. .	12.8	. .	41.	. .	9.2	. .	48 41.02	19.14	−0.01	IV.	8	4.145	36 4.43	. .	4.30	48 21.87	
38	9	. .	. .	. .	15.4	. .	. .	. .	51 15.24	19.16	+0.01	IV.	3	8.350	14 17.79	. .	1.76	50 56.09	
39	9	. .	. .	. .	. .	46.2	. .	. .	51 31.90	19.16	0.00	V.	5	4.228	22 8.76	. .	2.67	51 12.74	
40	9	. .	. .	. .	. .	. .	12.0	. .	51 43.60	19.16	+0.01	VI.	5	8.400	24 18.32	. .	2.91	51 24.45	
41	9	. .	. .	. .	. .	37.	51.	. .	52 22.65	19.16	−0.01	V.	7	13.023	35 31.81	. .	4.24	52 3.48	
42	8	. .	34.8	48.3	3.1	. .	. .	. .	54 3.09	19.17	−0.02	IV.	10	5.098	46 32.21	. .	5.60	53 43.90	
43	8	. .	. .	. .	36.8	40.2	. .	. .	54 36.21	19.17	0.00	IV.	4	9.572	19 58.23	. .	2.42	54 17.09	
44	9	. .	. .	. .	10.2	24.1	. .	. .	55 9.90	19.18	+0.01	IV.	2	12.045	11 4.32	. .	1.34	54 50.73	
45	7	. .	. .	. .	. .	. .	56.9	. .	55 28.39	19.18	−0.02	VI.	9	13.430	45 53.89	. .	5.53	55 9.19	
46	9	. .	. .	. .	. .	. .	26.8	. .	55 58.32	19.18	0.01	VI.	9	3.54	40 52.90	. .	4.91	55 39.13	
47	9	. .	. .	. .	. .	. .	. .	9.5	57 26.70	19.19	0.01	VII.	7	8.49	33 23.71	. .	3.98	57 7.50	
48	9	. .	. .	55.	9.6	. .	. .	. .	59 9.39	19.20	−0.01	IV.	8	8.010	37 58.64	. .	4.56	58 50.18	
49	9	. .	. .	. .	. .	40.2	. .	. .	2 59 25.89	19.20	0.00	V.	4	10.522	20 25.92	. .	2.47	59 6.69	
50	9	. .	. .	. .	. .	24.0	37.8	. .	3 0 9.55	19.20	0.00	V.	4	10.055	20 2.37	. .	2.42	2 59 50.35	
51	7	2.5	17.1	31.4	. .	0.0	13.8	28.	0 45.63	19.21	0.00	III.	6	12.282	30 14.61	. .	3.62	3 0 26.42	
52	9	. .	. .	. .	56.5	. .	. .	. .	4 56.34	19.22	+0.01	IV.	3	8.162	14 8.31	. .	1.72	4 37.13	
53	9	. .	33.	. .	. .	15.2	. .	. .	5 1.16	19.22	0.01	II.	3	9.205	14 40.53	. .	1.78	5 41.95	
54	7	35.2	49.6	4.1	. .	. .	46.	. .	7 17.97	19.23	0.01	IV.	3	8.228	14 11.63	. .	1.72	6 58.75	
55	9	16.	30.	. .	. .	. .	. .	. .	8 58.64	19.24	+0.01	II.	2	9.370	9 49.76	. .	1.22	8 39.41	
56	9	. .	4.5	. .	. .	. .	. .	. .	9 33.21	19.24	−0.01	II.	8	11.123	39 34.91	. .	4.75	9 13.96	
57	9	. .	34.3	. .	3.4	. .	. .	. .	16 3.09	19.26	0.01	IV.	7	7.55	32 56.91	. .	3.96	15 43.82	
58	7	57.5	11.8	26.4	40.2	. .	. .	. .	17 40.46	19.27	−0.01	IV.	7	9.188	33 39.16	. .	4.05	17 21.18	
59	9	8.4	22.	. .	. .	. .	. .	. .	18 51.00	19.28	0.00	II.	5	7.38	23 47.05	. .	2.85	18 31.72	
60	10	. .	. .	. .	. .	. .	17.0	. .	18 48.56	19.28	−0.01	VI.	7	7.06	32 32.02	. .	3.91	18 29.27	
61	10	. .	. .	. .	. .	. .	. .	4.0	19 21.22	19.28	−0.01	VII.	7	12.46	35 23.23	. .	4.25	19 1.93	
62	9	. .	0.6	. .	29.	. .	. .	. .	21 28.98	19.28	0.00	IV.	5	4.008	21 57.72	. .	2.66	21 9.70	
63	9	. .	. .	. .	. .	56.5	. .	. .	21 42.11	19.29	+0.02	V.	1	4.30	2 16.10	. .	0.37	21 22.84	
64	9	. .	. .	33.	46.8	. .	. .	. .	22 47.31	19.29	0.01	IV.	3	9.50	14 55.60	. .	1.82	22 28.03	
65	9	. .	. .	. .	. .	19.	32.5	. .	23 4.41	19.29	+0.01	V.	2	9.03	9 32.75	. .	1.19	22 45.13	
66	8.9	0.	14.	28.2	42.2	. .	. .	. .	24 42.52	19.29	0.00	IV.	6	6.439	27 21.06	. .	3.28	24 23.23	
67	9	. .	. .	18.5	. .	. .	. .	. .	25 32.50	19.30	+0.01	III.	4	2.52	? 16 23.78	. .	1.97	25 13.21	
68	9	52.2	7.0	. .	. .	. .	. .	. .	27 35.46	19.30	0.00	II.	7	0.552	29 25.04	. .	3.53	27 16.16	
69	9	. .	. .	. .	. .	34.5	. .	. .	28 20.19	19.31	0.00	V.	4	8.92	19 13.86	. .	2.31	28 0.88	
70	9	. .	. .	. .	10.	. .	. .	. .	29 9.84	19.31	+0.01	IV.	4	7.556	18 56.91	. .	2.29	28 50.54	
71	10	. .	1.0	. .	. .	. .	. .	. .	30 29.60	19.31	0.00	II.	6	9.392	28 49.27	. .	3.45	30 9.29	
72	9	. .	. .	. .	4.9	. .	. .	. .	31 4.74	19.31	−0.01	IV.	9	5.410	41 47.04	. .	5.01	30 45.42	
73	9	. .	56.	. .	. .	. .	. .	. .	32 24.35	19.32	+0.02	II.	1	9.170	4 40.67	. .	0.62	32 5.05	
74	6	. .	. .	38.5	52.2	. .	. .	. .	3 32 52.39	−19.32	−0.01	IV.	7	5.49	−31 53.38	. .	−3.84	3 32 33.06	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(139) 30. Transit over T. IV assumed 32s.2 instead of 22s.2.
(139) 43. Transit observation of T.V assumed as 50s.2 instead of 40s.2.
(139. 53. Minutes assumed as 6 instead of 5.

Zone 139. October 15. H. Belt, −28° 46′. $D_\circ = -27° 53' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
75	8.9	. .	. .	. .	. .	23.4	36.8	. .	3 33 8.76	−19.32	−0.01	V.	8	4.42	−36 18.25	. .	−4.36	3 32 49.43	
76	7	. .	27.	. .	56.	. .	. .	. .	34 55.74	19.32	−0.01	IV.	7	7.580	32 58.42	. .	3.94	34 36.41	
77	9	. .	. .	. .	. .	39.	. .	. .	35 24.72	19.33	0.00	V.	5	11.470	25 52.75	. .	3.10	35 5.39	
78	9	. .	50.0	. .	. .	. .	. .	. .	37 18.74	19.33	+0.02	II.	9	7.518	42 52.80	. .	5.16	36 59.43	
79	9	. .	. .	21.5	. .	. .	. .	. .	38 35.38	19.34	0.02	III.	2	7.278	8 44.74	. .	1.09	38 16.06	
80	9	. .	. .	56.2	. .	. .	. .	. .	39 10.10	19.34	+0.01	III.	2	10.58	10 30.74	. .	1.29	38 50.77	
81	9	. .	. .	. .	. .	23.0	. .	. .	39 8.71	19.34	0.00	V.	5	6.00	22 57.78	. .	2.76	38 49.37	
82	9	. .	. .	. .	. .	. .	56.2	. .	39 27.79	19.34	0.00	VI.	6	4.170	26 6.80	. .	3.13	39 8.45	
83	9	. .	. .	36.0	50.0	. .	. .	. .	40 50.14	19.34	−0.02	IV.	9	11.575	44 56.89	. .	5.38	40 30.78	
84	9	. .	53.0	. .	. .	. .	. .	. .	43 21.36	19.35	+0.02	II.	1	12.462	6 26.16	. .	0.81	43 2.03	
85	9	. .	. .	2.0	15.5	. .	. .	. .	45 15.83	19.35	−0.01	IV.	8	5.395	36 47.29	. .	4.39	44 56.47	
86	6.7	. .	56.6	11.2	25.2	39.3	. .	. .	47 25.04	19.35	+0.01	IV.	3	5.123	12 35.57	. .	1.51	48 5.70	
87	9	. .	. .	4.0	18.	. .	. .	. .	48 17.87	19.36	0.01	IV.	2	9.174	9 40.06	. .	1.20	47 58.52	
88	9	. .	. .	. .	. .	. .	53.1	. .	49 24.74	19.36	+0.01	VI.	3	11.440	15 52.90	. .	1.89	49 5.39	
89	9	. .	. .	. .	. .	. .	3.0	. .	50 34.56	19.36	−0.01	VI.	7	6.102	32 3.88	. .	3.83	50 15.19	
90	9	. .	33.0	48.2	2.0	. .	. .	. .	52 1.90	19.36	0.00	IV.	5	8.060	24 1.37	. .	2.88	51 42.54	
91	10	. .	. .	. .	57.0	. .	. .	. .	52 56.84	19.37	+0.01	IV.	3	12.00	16 1.15	. .	1.91	52 37.48	
92	9	50.8	5.2	19.4	. .	. .	. .	. .	54 33.68	19.37	+0.01	II.	3	5.075	12 32.96	. .	1.51	54 14.32	
93	9	. .	. .	2.3	16.6	. .	. .	. .	55 16.61	19.37	−0.02	IV.	10	6.460	47 20.73	. .	5.71	54 57.22	
94	9	. .	. .	. .	47.8	. .	. .	. .	55 47.64	19.37	+0.01	IV.	3	7.468	13 53.48	. .	1.67	55 28.28	
95	9	. .	4.8	19.2	. .	. .	. .	. .	58 33.16	19.38	0.01	III.	2	11.125	10 38.05	. .	1.29	58 13.79	
96	9	. .	. .	42.1	. .	. .	. .	. .	58 56.09	19.38	+0.01	III.	3	11.118	15 36.79	. .	1.87	58 36.72	
97	5.6	. .	17.3	32.1	46.0	0.2	14.	29.0	3 59 45.82	−19.38	−0.02	IV.	2	9.095	− 9 36.08	. .	−1.17	3 59 26.42	

Zone 140. October 16. K. Belt, −30° 2′. $D_\circ = -29° 39' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		r.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	33.2	. .	2.7	. .	. .	. .	. .	23 46 17.04	−19.38	0.00	IV.	7	11.30	−34 45.33	− 2.74	−4.25	23 45 57.66	−30 13 52.32
2	10	21.9	. .	. .	. .	. .	. .	. .	49 5.42	19.41	0.00	IV.	4	5.31	17 44.00	2.73	2.10	48 46.01	29 56 48.83
3	8	. .	. .	. .	. .	. .	. .	49.2	49 5.97	19.41	0.00	VII.	9	5.5	41 28.45	2.73	5.11	48 46.56	30 20 36.29
4	10	. .	47.9	. .	. .	. .	. .	. .	51 16.97	19.43	0.00	IV.	9	4.21	41 6.70	2.74	5.07	50 57.54	20 14.51
5	9	. .	. .	. .	. .	. .	. .	52.5	51 9.04	19.43	0.00	VII.	5	7.33	23 44.28	2.74	2.85	50 49.61	2 49.87
6	7.8	. .	. .	. .	. .	. .	. .	47.4	52 3.91	19.44	0.00	VII.	9	2.21	40 5.75	2.74	4.94	51 44.47	30 19 13.43
7	10	. .	35.2	. .	. .	. .	. .	. .	56 3.96	19.48	0.00	IV.	2	11.57	11 0.54	2.76	1.24	55 44.48	29 50 4.54
8	7	. .	32.5	47.2	. .	. .	. .	. .	57 1.57	19.49	0.00	IV.	7	9.50	33 54.90	2.77	4.15	56 42.08	30 13 1.82
9	7	. .	. .	. .	. .	. .	. .	42.0	57 58.60	19.49	0.00	IV.	6	6.15	27 6.49	2.77	3.25	56 39.11	30 6 12.51
10	7.8	. .	. .	34.2	48.9	3.0	. .	. .	23 58 48.56	19.51	0.00	IV.	4	10.6	20 2.68	2.77	2.37	23 58 29.05	29 59 7.82
11	10	2.3	. .	. .	. .	. .	. .	. .	0 0 46.03	19.53	0.00	IV.	8	3.55	35 54.59	2.79	4.39	0 0 26.50	30 15 1.77
12	10	38.9	. .	. .	. .	. .	. .	. .	5 22.58	19.58	0.00	IV.	7	5.3	31 30.18	2.85	3.80	5 3.00	10 36.83
13	9	. .	49.0	3.4	. .	. .	. .	. .	6 18.08	19.59	0.00	IV.	10	3.7	45 30.29	2.86	5.64	5 58.49	30 24 38.79
14	9	. .	. .	53.5	. .	. .	. .	. .	7 7.53	19.60	0.00	IV.	2	3.37	6 48.42	2.87	0.69	6 47.93	29 45 51.98
15	9	. .	. .	. .	52.1	. .	. .	. .	7 51.94	19.61	0.00	IV.	3	2.46	11 21.81	2.88	1.27	7 32.33	50 25.96
16	6	. .	. .	. .	18.5	32.8	46.8	. .	14 18.25	19.67	0.00	IV.	2	9.8	9 35.32	3.01	1.06	13 58.58	29 48 39.39
17	9	42.8	57.2	. .	. .	. .	. .	. .	16 26.34	19.69	0.00	IV.	7	8.40	33 19.61	3.06	4.08	16 6.65	30 12 26.75
18	9	. .	. .	. .	. .	. .	. .	8.6	16 25.35	19.69	0.00	IV.	8	12.9	40 3.69	3.06	4.93	16 5.66	30 19 11.68
19	9	. .	. .	9.0	23.2	. .	. .	. .	18 23.13	19.71	0.00	IV.	4	8.34	19 16.29	3.10	2.28	18 3.42	29 58 21.67
20	9	. .	34.9	. .	4.2	. .	. .	. .	20 4.03	19.73	0.00	IV.	10	3.27	45 40.37	3.14	5.66	19 44.30	30 24 49.17
21	9	. .	. .	. .	44.8	. .	. .	. .	20 44.64	19.74	0.00	IV.	8	7.34	37 45.03	3.16	4.66	20 24.90	16 52.85
22	7	. .	. .	. .	. .	31.6	45.5	. .	0 21 16.94	−19.74	0.00	IV.	6	7.22	−27 40.27	− 3.18	−3.32	0 20 57.20	−30 6 46.77

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
Oct. 16, 19	f 24.95	g 0.030			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 140	Oct. 16 9 8	30.230	64.5	44.

REMARKS.

(139) 86. Minutes assumed as 48 instead of 47.

ZONE 140. OCTOBER 16. K. BELT, −30° 2′. $D_\circ$=−29° 39′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	9	. .	28.6	43.0	. .	. .	. .	. .	0 25 57.28	−19.79	0.00	IV.	3	9.45	−14 53.08	− 3.33	−1.73	0 25 37.49	−29 53 58.14
24	6	. .	. .	. .	35.5	49.6	3.7	. .	26 35.14	19.80	0.00	IV.	9	10.1	43 58.15	3.35	5.49	26 15.34	30 23 6.99
25	9	. .	. .	56.0	10.2	24.8	. .	. .	28 10.22	19.81	0.00	IV.	5	6.0	22 57.83	3.40	2.76	27 50.41	30 2 3.99
26	7	. .	. .	14.1	. .	. .	. .	. .	29 28.05	19.82	0.00	IV.	1	3.19	1 40.34	3.44	0.07	29 8.23	29 40 43.85
27	9	14.4	29.0	43.6	. .	. .	. .	. .	30 58.14	10.84	0.00	IV.	9	4.24	41 8.22	3.50	5.08	30 38.30	30 20 16.80
28	9	. .	58.5	12.8	27.0	. .	. .	. .	32 27.03	19.85	0.00	IV.	3	9.57	14 59.13	3.56	1.74	32 7.18	29 54 4.43
29	6.7	. .	. .	15.9	30.6	44.8	. .	. .	33 30.40	19.87	0.00	IV.	7	13.12	35 36.75	3.60	4.35	33 10.53	30 14 44.70
30	9	. .	. .	21.8	. .	. .	. .	. .	39 36.19	19.93	0.00	IV.	6	11.48	29 54.40	3.85	3.61	39 16.26	30 9 1.86
31	9	. .	. .	. .	. .	22.5	. .	. .	40 8.01	19.93	0.00	IV.	4	6.16	18 6.70	3.88	2.10	39 48.08	29 57 12.68
32	8	. .	. .	. .	. .	11.3	25.5	. .	40 56.80	19.94	0.00	IV.	7	3.39	30 47.83	3.92	3.71	40 36.86	30 9 55.46
33	9	. .	. .	. .	10.2	. .	. .	. .	43 10.04	19.96	0.00	IV.	2	10.22	10 12.64	4.03	1.12	42 50.08	29 49 17.79
34	10	. .	. .	. .	41.8	. .	. .	. .	46 41.64	19.99	0.00	IV.	2	4.48	7 24.22	4.20	0.76	46 21.65	29 46 29.18
35	6	. .	58.8	. .	27.9	. .	. .	. .	0 56 27.80	20.08	0.00	IV.	9	3.31	40 41.4	4.73	5.03	56 7.72	30 19 51.25
36	9	. .	. .	56.8	. .	. .	. .	. .	1 0 11.44	20.11	+0.01	IV.	10	4.00	45 57.02	4.96	5.72	0 59 51.34	25 7.70
37	9	. .	. .	. .	. .	59.8	. .	. .	0 45.35	20.12	0.00	IV.	6	4.27	27 12.03	5.00	3.26	1 0 25.23	6 20.29
38	8	. .	. .	48.5	3.2	. .	. .	. .	2 3.09	20.13	−0.01	IV.	10	4.28	46 11.13	5.09	5.71	1 42.95	25 21.93
39	9	. .	. .	24.5	. .	. .	. .	. .	4 39.02	20.15	0.00	IV.	8	8.24	38 10.24	5.27	4.71	4 18.87	30 17 20.22
40	8.9	. .	. .	37.8	6.5	. .	. .	. .	6 52.20	20.16	0.00	IV.	4	8.50	19 24.35	5.36	2.29	5 32.04	29 58 32.00
41	9	17.4	. .	46.8	. .	. .	. .	. .	7 1.16	20.17	0.00	IV.	7	6.4	32 0.95	5.43	3.86	6 40.99	30 11 10.24
42	9	. .	. .	. .	31.0	. .	. .	. .	8 30.84	20.19	0.00	IV.	9	7.41	42 47.55	5.53	5.26	8 10.65	30 21 58.34
43	9	. .	44.1	58.5	. .	. .	. .	. .	12 12.84	20.22	0.00	IV.	4	9.18	19 38.46	5.80	2.31	11 52.62	29 58 46.57
44	9	58.2	12.9	27.4	42.1	. .	. .	. .	13 41.99	20.23	+0.01	IV.	9	10.15	44 5.21	5.91	5.49	13 21.75	30 23 16.61
45	9	. .	. .	. .	. .	23.8	. .	. .	20 9.39	20.29	0.00	VI.	7	13.12	35 36.55	6.41	4.37	19 49.10	14 47.33
46	9	. .	17.8	32.8	47.5	. .	. .	. .	1 23 47.03	−20.32	0.00	IV.	5	6.55	−23 25.56	− 6.72	−2.82	1 23 26.71	−30 2 35.10

ZONE 141. OCTOBER 18. H. BELT, −23° 46′. $D_\circ$=−23° 21′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	23.	36.8	. .	4.	. .	. .	. .	22 59 3.98	−20.18	−0.01	II.	3	7.33	−13 46.37	−13.45	−2.18	22 58 43.79	−23 35 2.00
2	9	. .	. .	. .	23.2	36.5	. .	. .	22 59 22.96	20.18	+0.01	IV.	8	4.135	36 3.92	13.42	3.84	59 2.79	57 21.18
3	9	. .	. .	. .	. .	. .	42.0	. .	23 0 14.78	20.19	0.00	VI.	7	6.060	32 1.81	13.35	3.53	22 59 54.59	53 18.69
4	9	. .	. .	. .	. .	14.4	27.8	. .	1 0.66	20.20	0.00	V.	7	3.158	30 36.08	13.29	3.44	23 0 40.46	51 52.81
5	9	. .	. .	45.0	59.	. .	. .	. .	1 58.75	20.21	0.00	IV.	7	8.520	33 25.66	13.21	3.65	1 38.54	54 42.52
6	9	. .	. .	. .	17.5	30.8	. .	. .	2 17.25	20.21	0.00	IV.	7	9.318	33 45.72	13.19	3.67	1 57.04	55 2.58
7	8.9	. .	27.5	41.6	55.	. .	. .	. .	4 54.97	20.24	0.00	IV.	6	8.050	28 1.96	12.98	3.23	4 34.73	49 18.17
8	9	. .	. .	. .	. .	. .	25.2	39.2	4 57.97	20.24	−0.01	VI.	1	9.510	4 57.85	12.98	1.51	4 37.72	26 12.34
9	9	. .	. .	. .	. .	. .	. .	44.2	5 2.86	20.24	−0.01	VII.	1	10.318	5 18.24	12.97	1.54	4 42.62	26 32.75
10	9	. .	. .	. .	23.3	36.6	. .	. .	6 23.06	20.25	0.00	IV.	8	7.500	37 53.09	12.87	3.99	6 2.81	23 59 9.95
11	7	. .	24.0	37.5	51.5	4.8	. .	. .	8 51.32	20.28	+0.01	IV.	9	4.326	41 12.56	12.67	4.25	8 31.05	24 2 29.48
12	8	. .	23.3	37.1	. .	. .	. .	. .	9 50.54	20.29	0.00	III.	4	3.290	16 42.4	12.59	2.40	9 30.25	23 37 57.43
13	9	. .	. .	. .	1.2	. .	. .	. .	10 1.05	20.29	−0.01	IV.	1	9.030	4 33.80	12.58	1.47	9 40.75	25 47.85
14	9.10	. .	. .	. .	27.8	41.8	. .	. .	11 27.91	20.30	0.00	IV.	7	14.070	36 4.48	12.47	3.84	11 7.61	23 57 20.79
15	8	. .	. .	. .	4.1	17.6	. .	. .	12 3.97	20.31	+0.01	IV.	9	4.530	41 22.84	12.43	4.25	11 43.67	24 2 39.52
16	8	. .	. .	. .	. .	38.8	52.1	. .	12 25.01	20.31	0.00	V.	4	4.385	17 17.49	12.40	2.44	12 4.70	23 38 32.33
17	8.9	. .	53.0	6.6	20.2	. .	. .	. .	15 20.20	20.34	0.00	IV.	6	8.558	29 28.07	12.19	3.35	14 59.86	50 43.61
18	8.9	. .	41.2	55.2	9.	. .	. .	. .	16 8.56	20.35	−0.01	IV.	1	9.180	4 41.36	12.13	1.48	15 48.20	25 54.97
19	9	. .	. .	. .	55.5	. .	. .	. .	17 55.35	20.36	0.00	IV.	8	6.222	37 8.82	12.00	3.92	17 34.99	23 58 24.74
20	9	. .	. .	. .	12.0	. .	. .	. .	18 11.85	20.36	0.00	IV.	9	3.050	40 28.38	11.98	4.20	17 51.49	24 1 44.56
21	8.9	. .	. .	32.2	46.1	. .	. .	. .	23 18 45.89	−20.37	0.00	IV.	7	6.533	−32 25.80	−11.94	−3.57	23 18 25.52	−23 53 41.31

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
Oct. 18, 20	f 26.14	g 0.037	− 0.086	+ 0.153	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°
Zone 141	Oct. 18, 9 5	30.110	65.5	54.

REMARKS.

(140) 40. Observation of T. V assumed to have been recorded as of T. IV, and minutes assumed as 5 instead of 6.
(141) 17. Micrometer reading assumed as 10^r.558 instead of 8^r.558.

ZONE 141. OCTOBER 18. H. BELT, −23° 46′. D_0 = −23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	9	. .	. .	. .	. .	. .	14.9	. .	23 18 47.75	−20.37	0.00	VI.	3	5.240	−12 41.33	−11.94	−2.09	23 18 27.38	−23 33 55.36
23	8	. .	. .	. .	. .	40.4	54.0	. .	19 26.76	20.37	0.00	V.	2	13.11	11 37.80	11.89	1.99	19 6.39	32 51.68
24	9	. .	. .	. .	19.3	. .	. .	. .	20 19.15	20.38	0.00	IV.	4	6.338	18 15.67	11.83	2.48	19 58.77	23 39 29.98
25	9	. .	. .	. .	23.	. .	. .	. .	21 22.85	20.39	+0.01	IV.	10	10.238	49 10.54	11.75	4.87	21 2.47	24 10 27.16
26	9	. .	. .	. .	. .	51.1	4.6	. .	21 37.42	20.40	0.00	V.	9	7.480	42 51.04	11.74	4.37	21 17.02	24 4 7.15
27	9	. .	. .	. .	. .	. .	25.3	39.	21 58.04	20.39	0.00	V.	7	5.27	31 42.24	11.77	3.52	20 37.65	23 52 57.53
28	9	. .	. .	. .	. .	. .	58.1	12.1	22 30.88	20.41	0.00	V.	2	5.450	7 52.94	11.66	1.73	22 10.47	29 6.33
29	9	. .	. .	. .	. .	. .	39.	. .	23 11.80	20.41	0.00	VI.	6	3.482	25 52.31	11.61	3.07	22 51.39	47 6.99
30	9	. .	. .	. .	. .	54.	7.	. .	23 40.05	20.42	0.00	V.	4	1.461	15 50.56	11.59	2.32	22 19.63	37 4.47
31	9	. .	. .	5.	18.2	. .	. .	. .	26 18.19	20.44	0.00	IV.	2	11.148	10 39.26	11.41	1.95	25 57.75	31 52.62
32	9	. .	. .	. .	. .	40.	53.1	. .	26 26.11	20.44	0.00	V.	5	9.485	24 53.00	11.40	2.99	26 5.67	46 7.39
33	9	. .	. .	. .	. .	. .	19.3	. .	26 52.09	20.45	0.00	VI.	6	5.100	26 33.71	11.37	3.12	26 31.64	47 48.20
34	9	. .	. .	. .	3.7	17.2	. .	. .	28 3.49	20.46	0.00	IV.	1	10.130	5 9.10	11.29	1.51	27 43.03	26 21.90
35	8.9	. .	36.8	50.2	4.2	. .	. .	. .	33 3.89	20.51	0.00	IV.	3	7.348	13 47.43	10.96	2.18	32 43.38	35 0.57
36	9	. .	. .	. .	. .	. .	23.8	37.8	32 56.68	20.51	0.00	VI.	6	11.028	29 1.21	10.97	3.31	32 36.17	23 50 15.49
37	9	. .	. .	. .	. .	. .	5.5	19.2	33 28.04	20.51	0.00	VI.	9	7.330	42 43.37	10.93	4.37	33 7.53	24 3 58.67
38	9	. .	. .	. .	15.1	. .	. .	. .	35 14.95	20.53	0.00	IV.	8	6.452	37 20.42	10.82	3.95	34 54.42	23 58 35.19
39	9	. .	. .	. .	33.1	47.	. .	. .	35 33.16	20.53	0.00	IV.	7	10.500	34 55.41	10.80	3.73	35 12.63	23 56 9.94
40	9	. .	. .	. .	. .	14.2	. .	. .	36 0.59	20.53	0.00	V.	9	7.110	42 32.38	10.77	4.35	35 40.06	24 3 47.50
41	8	. .	. .	. .	. .	. .	32.8	46.4	36 5.44	20.53	0.00	VII.	5	5.220	22 38.32	10.77	2.86	35 44.91	23 43 51.95
42	9	. .	. .	. .	19.	. .	. .	. .	37 18.85	20.55	0.00	IV.	9	4.480	41 20.32	10.69	4.26	36 58.30	24 2 35.27
43	9	. .	. .	. .	. .	. .	47.5	. .	37 20.25	20.55	0.00	VI.	8	10.450	39 21.19	10.69	4.13	36 59.70	24 0 36.01
44	9	. .	. .	. .	. .	. .	. .	21.8	37 40.47	20.55	0.00	VII.	1	12.470	6 26.41	10.67	1.61	37 19.92	23 27 38.69
45	9	. .	. .	. .	. .	. .	. .	40.	38 58.90	20.56	0.00	VII.	5	9.465	24 51.70	10.58	2.99	38 38.34	46 5.27
46	9	. .	. .	. .	1.5	. .	28.2	. .	39 1.17	20.56	0.00	IV.	5	12.250	. . .	10.58	. .	38 40.61	
47	8.9	. .	56.8	10.6	24.1	. .	. .	. .	40 24.08	20.57	0.00	IV.	5	12.312	26 15.08	10.50	3.10	40 3.51	47 28.68
48	8.9	. .	. .	. .	. .	40.1	. .	. .	40 26.33	20.57	0.00	V.	1	10.330	5 19.15	10.50	1.52	40 5.76	26 31.17
49	9	. .	. .	. .	. .	19.8	. .	. .	41 6.05	20.58	0.00	V.	2	8.352	9 18.75	10.46	1.82	40 45.47	23 30 31.03
50	9	. .	. .	. .	. .	. .	. .	54.2	41 13.42	20.58	0.00	VII.	10	8.050	48 0.22	10.45	4.80	40 52.84	24 9 15.47
51	8	. .	. .	. .	. .	. .	10.2	24.2	41 43.07	20.59	0.00	VI.	9	6.230	42 8.07	10.42	4.34	41 22.48	24 3 22.83
52	9	. .	. .	. .	. .	. .	44.8	59.2	42 17.91	20.59	0.00	VI.	8	1.300	34 41.33	10.39	3.77	41 56.32	23 55 55.49
53	9	. .	. .	. .	. .	. .	. .	40.8	42 59.68	20.60	0.00	VII.	5	5.300	22 42.36	10.35	2.83	42 39.08	23 43 55.54
54	9	. .	. .	. .	. .	. .	. .	6.8	43 25.99	20.60	0.00	VII.	10	3.060	45 29.45	10.33	4.60	43 5.39	24 6 44.38
55	9	. .	41.0	. .	. .	. .	. .	. .	46 8.36	20.63	0.00	II.	6	3.578	25 57.15	10.18	3.08	45 47.73	23 47 10.41
56	9	. .	. .	32.0	. .	. .	. .	. .	46 45.55	20.64	0.00	III.	6	3.433	25 49.95	10.14	3.06	46 24.91	47 3.15
57	8.9	. .	. .	1.8	15.5	. .	. .	. .	47 15.38	20.64	0.00	IV.	7	3.405	30 48.58	10.11	3.45	46 54.74	52 2.14
58	9	. .	. .	55.	. .	. .	. .	. .	48 8.60	20.65	0.00	III.	6	11.198	29 40.14	10.06	3.37	47 47.95	50 53.57
59	9	. .	. .	. .	25.0	38.1	. .	. .	48 24.64	20.65	0.00	IV.	6	6.308	27 14.46	10.05	3.18	48 3.99	48 27.67
60	9	. .	. .	. .	16.5	. .	. .	. .	49 16.35	20.66	0.00	IV.	5	5.261	22 40.73	10.00	2.81	48 55.69	43 53.54
61	9	. .	. .	. .	. .	24.0	. .	. .	50 10.34	20.67	0.00	V.	6	8.550	28 27.12	9.95	3.27	49 49.67	49 40.34
62	9	. .	. .	21.1	34.6	48.1	. .	. .	51 34.53	20.68	0.00	IV.	6	11.383	29 49.51	9.88	3.38	51 13.85	51 2.77
63	8.9	. .	. .	35.	48.	. .	. .	. .	52 48.36	20.70	0.00	IV.	1	10.03	4 33.81	9.83	1.49	52 27.66	25 45.13
64	8.9	. .	. .	6.8	20.	. .	. .	. .	53 19.98	20.70	0.00	IV.	2	7.425	8 52.21	9.80	1.79	52 59.28	30 3.80
65	8.9	. .	. .	. .	40.	53.5	. .	. .	53 39.81	20.70	0.00	IV.	3	10.339	15 17.69	9.78	2.26	53 19.11	36 29.73
66	9	. .	. .	. .	43.2	57.	. .	. .	54 43.15	20.71	0.00	IV.	2	8.354	9 18.89	9.73	1.81	54 22.44	23 30 30.43
67	9	. .	. .	56.2	10.2	23.5	. .	. .	56 9.99	20.73	0.00	IV.	9	11.458	44 50.99	9.66	4.55	55 49.26	24 6 5.20
68	9	. .	. .	. .	58.7	12.2	. .	. .	56 58.58	20.73	0.00	IV.	9	10.058	44 0.57	9.63	4.48	56 37.85	24 5 14.68
69	5.6	. .	2.8	16.2	30.	. .	. .	. .	59 29.99	20.76	0.00	IV.	7	12.148	35 7.91	9.50	3.77	59 9.23	23 56 21.18
70	9	. .	. .	. .	48.2	. .	. .	. .	23 59 48.05	−20.76	0.00	IV.	7	3.555	−30 56.14	− 9.49	−3.31	23 59 27.29	−23 52 8.94

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(141) 37. One of the transit observations (supposed T. VII) is 10^s in error.
(141) 39. Micrometer reading assumed as $11^r.500$ instead of $10^r.500$.
(141) 46. Declination 4′ discordant from Arg. Z. 270, 8, and 6′ from Mural, 1847, October 28.
(141) 63. Micrometer reading assumed as $9^r.03$ instead of $10^r.03$.

ZONE 141. OCTOBER 18. H. BELT, −23° 46′. D_0 = −23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
71	9	. .	. .	. .	. .	. .	19.2	33.7	23 59 52.36	−20.76	0.00	VI.	8	3.268	−35 40.22	−9.49	−3.83	23 59 31.60	−23 56 43.54
72	9	. .	36.0	49.4	3.1	. .	. .	. .	0 3 3.00	20.79	0.00	IV.	3	10.078	15 4.58	9.35	2.25	0 2 42.21	36 16.18
73	8	. .	. .	23.9	37.0	51.	. .	. .	4 37.15	20.80	0.00	IV.	4	5.420	17 49.55	9.29	2.45	4 16.35	23 39 1.29
74	9	. .	. .	. .	. .	14.4	. .	. .	5 0.81	20.81	0.00	V.	10	5.520	46 53.45	9.27	4.71	4 40.00	24 8 7.43
75	9	. .	. .	38.2	52.2	6.1	. .	. .	5 52.06	20.81	0.00	IV.	5	9.485	24 53.04	9.24	2.99	5 31.25	23 46 5.27
76	8	. .	. .	. .	. .	41.2	54.1	. .	6 27.21	20.82	0.00	V.	9	5.050	41 28.84	9.22	4.28	6 6.39	24 2 42.34
77	9	. .	. .	. .	. .	. .	16.8	. .	6 49.54	20.82	0.00	VI.	9	4.268	41 9.48	9.20	4.26	6 28.72	24 2 22.94
78	8	. .	. .	46.8	59.	. .	. .	. .	7 59.57	20.83	0.00	IV.	5	4.275	22 11.18	9.15	2.78	7 38.74	23 43 23.11
79	9	. .	33.8	47.8	. .	. .	28.0	. .	9 0.99	20.84	0.00	III.	1	6.500	3 26.70	9.11	1.37	8 40.15	24 37.18
80	8	. .	. .	. .	. .	21.8	. .	49.0	9 7.84	20.84	0.00	VII.	1	8.010	4 2.19	9.11	1.41	8 47.00	25 12.71
81	9	. .	24.8	38.5	52.0	. .	. .	. .	11 52.00	20.86	0.00	IV.	5	6.528	23 24.45	9.01	2.88	11 31.14	44 36.34
82	9	. .	. .	. .	. .	. .	. .	21.2	11 40.29	20.86	0.00	VII.	8	9.122	38 34.20	9.02	4.04	11 19.43	59 47.26
83	6.7	. .	. .	24.0	38.1	. .	. .	. .	14 37.77	20.89	0.00	IV.	6	9.440	28 51.88	8.92	3.30	14 16.88	50 4.10
84	9	. .	. .	. .	. .	52.0	. .	. .	14 38.24	20.89	0.00	V.	2	4.230	7 11.57	8.92	1.65	14 17.35	28 22.14
85	9	. .	. .	. .	. .	. .	20.2	. .	14 53.00	20.89	0.00	VI.	5	10.08	25 2.73	8.91	3.00	14 32.11	46 14.64
86	9	. .	. .	. .	. .	. .	. .	52.1	15 11.08	20.89	0.00	VII.	6	11.589	29 59.55	8.90	3.39	14 50.19	51 11.84
87	9	. .	. .	. .	. .	. .	19.8	. .	15 52.58	20.90	0.00	VI.	7	7.160	32 37.10	8.88	3.59	15 31.68	53 49.57
88	9	. .	. .	. .	. .	. .	46.0	. .	16 18.79	20.90	0.00	VI.	6	11.534	29 56.97	8.87	3.39	15 57.89	23 51 9.23
89	9	. .	. .	26.5	40.	. .	. .	. .	18 40.09	20.92	0.00	IV.	10	3.223	45 38.00	8.79	4.61	18 19.17	24 6 51.40
90	9	. .	. .	. .	24.2	. .	. .	. .	19 24.05	20.93	0.00	IV.	10	2.513	45 22.37	8.77	4.59	19 3.12	6 35.73
91	8.9	. .	. .	. .	47.	. .	. .	. .	19 46.85	20.93	0.00	IV.	10	4.330	46 13.66	8.76	4.66	19 25.92	24 7 27.08
92	9	. .	. .	. .	. .	18.5	. .	. .	20 4.76	20.93	0.00	V.	3	5.188	12 38.80	8.75	2.07	19 43.83	23 33 49.62
93	9	. .	. .	. .	. .	54.2	. .	. .	20 40.58	20.94	0.00	V.	8	9.590	38 58.10	8.74	4.08	20 19.64	24 0 10.92
94	8	. .	. .	. .	. .	25.2	38.6	. .	21 11.46	20.94	0.00	V.	4	9.432	19 51.13	8.73	2.61	20 50.52	23 41 2.47
95	9	. .	. .	. .	. .	. .	53.	. .	22 25.75	20.95	0.00	VI.	8	10.410	39 19.17	8.70	4.10	22 4.80	24 0 31.97
96	9	. .	. .	26.5	. .	. .	. .	. .	23 39.82	20.95	0.00	III.	2	10.512	10 27.32	8.68	1.90	23 18.87	23 31 37.90
97	9	. .	. .	. .	11.2	. .	. .	. .	24 11.05	20.97	0.00	IV.	8	12.128	40 5.59	8.67	4.16	23 50.08	24 1 18.42
98	9	. .	. .	. .	. .	56.2	. .	. .	24 42.52	20.97	0.00	V.	5	10.478	25 22.91	8.66	3.03	24 21.55	23 46 34.60
99	6.7	. .	32.5	46.1	0.1	. .	. .	. .	28 59.76	21.01	0.00	IV.	4	7.350	18 46.53	8.57	2.52	28 38.75	39 57.62
100	10	. .	. .	. .	. .	25.	38.3	. .	29 11.51	21.01	0.00	V.	4	9.570	19 58.09	8.57	2.61	28 50.50	23 41 9.27
101	9	. .	. .	. .	. .	19.2	. .	. .	30 5.60	21.02	0.00	V.	9	11.230	44 39.44	8.55	4.54	29 44.58	24 5 52.53
102	9	. .	. .	. .	. .	51.5	4.5	. .	30 37.56	21.03	0.00	V.	6	5.322	26 44.87	8.54	3.14	30 16.53	23 47 56.55
103	9	. .	. .	. .	. .	. .	. .	36.5	30 55.60	21.03	0.00	VII.	8	10.08	39 2.34	8.54	4.09	30 34.57	24 0 14.97
104	9	. .	. .	. .	. .	. .	. .	49.5	31 8.63	21.03	0.10	VII.	9	4.565	41 24.27	8.54	4.28	30 47.60	24 2 37.09
105	9	. .	31.8	. .	. .	. .	. .	. .	32 59.18	21.05	0.00	II.	6	8.480	28 23.49	8.51	3.26	32 38.13	23 49 35.26
106	9	. .	. .	58.2	12.0	. .	. .	. .	34 58.21	21.05	0.00	IV.	8	6.161	37 5.75	8.50	3.96	33 37.16	58 18.21
107	9	. .	. .	53.1	7.1	. .	. .	. .	35 6.81	21.06	0.00	IV.	6	7.165	27 37.50	8.48	3.21	34 45.75	23 48 49.19
108	9	. .	. .	. .	. .	31.0	44.5	. .	35 17.22	21.06	0.00	V.	9	12.195	45 7.94	8.48	4.57	34 56.26	24 6 20.99
109	9	. .	. .	. .	. .	. .	17.0	. .	35 49.86	21.07	0.00	VI.	2	10.550	10 29.13	8.47	1.91	35 28.79	23 31 39.51
110	8.9	. .	. .	. .	. .	37.3	51.	. .	36 23.55	21.07	0.00	V.	2	12.246	6 15.41	8.47	1.55	36 2.48	27 25.43
111	9	. .	. .	. .	. .	25.2	38.6	. .	37 11.46	21.08	0.00	V.	7	6.020	31 59.90	8.46	3.53	36 50.38	53 11.89
112	9	. .	. .	. .	53.3	7.1	. .	. .	37 53.27	21.08	0.00	IV.	4	9.080	19 33.42	8.45	2.59	37 32.19	40 44.46
113	9	. .	29.2	43.	56.4	. .	. .	. .	39 56.35	21.10	0.00	IV.	3	6.420	13 20.81	8.42	2.12	39 35.25	34 31.35
114	9	. .	. .	. .	23.2	. .	. .	. .	40 23.05	21.10	0.00	IV.	7	11.280	34 44.31	8.42	3.75	40 1.95	55 56.48
115	9	. .	18.6	32.6	. .	. .	. .	. .	41 46.12	21.11	0.00	III.	7	5.490	31 53.34	8.41	3.54	41 25.01	23 53 5.29
116	8	. .	51.	5.	. .	44.	. .	. .	42 18.62	21.12	0.00	III.	9	3.528	40 52.44	8.41	4.23	41 57.50	24 2 5.08
117	9	. .	. .	. .	. .	33.	46.2	. .	42 19.17	21.12	0.00	V.	10	7.180	47 36.81	8.41	4.76	41 58.05	8 49.98
118	9	. .	. .	. .	. .	. .	. .	12.0?	42 31.23	21.12	0.00	VII.	10	11.118	49 34.40	8.41	4.93	42 10.11	24 10 47.74
119	9	. .	. .	. .	6.3	. .	. .	. .	0 44 6.15	−21.13	0.00	IV.	3	10.292	−15 15.37	−8.40	−2.27	0 43 45.02	−23 36 26.04

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(141) 106. Transits over T.'s III and IV as recorded over T.'s IV and V, and minutes assumed as 33 instead of 34.
(141) 110. Hor. thread assumed as 1 instead of 2.

ZONE 141. OCTOBER 18. H. BELT, −23° 46′. D₀ = −23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
120	8.9	. .	. .	. .	. .	39.1	52.6	. .	0 44 25.41	−21.14	0.00	V.	5	3.28	−21 41.13	− 8.40	−2.75	0 44 4.27	−23 42 52.28
121	6.7	. .	. .	. .	. .	26.0	. .	. .	45 12.22	21.14	0.00	V.	1	8.315	4 17.87	8.40	1.42	44 51.08	25 27.69
122	9	. .	. .	4.0	18.0	. .	. .	. .	46 17.68	21.15	0.00	IV.	5	8.35	24 15.99	8.39	2.94	45 56.53	45 27.32
123	9	. .	. .	59.	12.6	. .	. .	. .	47 12.46	21.16	0.00	IV.	4	11.264	20 43.21	8.39	2.67	46 51.30	41 54.27
124	9	. .	. .	. .	58.0	. .	. .	. .	47 57.85	21.16	0.00	IV.	5	12.038	26 1.26	8.39	3.08	47 36.69	47 12.73
125	9	. .	. .	. .	. .	17.2	. .	. .	48 3.53	21.16	0.00	V.	6	5.308	26 44.16	8.39	3.14	47 42.37	47 55.69
126	8.9	. .	. .	47.6	1.0	14.6	. .	. .	51 0.83	21.19	0.00	IV.	1	6.188	3 11.00	8.39	1.34	50 39.64	24 20.73
127	9	. .	. .	17.3	31.0	. .	. .	. .	54 30.78	21.21	0.00	IV.	3	11.095	15 35.69	8.40	2.29	54 9.57	23 36 46.38
128	8.9	. .	. .	. .	. .	5.2	. .	. .	54 51.62	21.21	0.00	V.	10	12.493	50 23.87	8.40	5.01	54 30.41	24 11 37.28
129	9	. .	. .	. .	. .	54.	. .	. .	55 40.33	21.22	0.00	V.	5	13.252	26 42.26	8.41	3.14	55 19.11	23 47 53.81
130	8.9	. .	. .	. .	16.	29.2	42.2	. .	56 15.46	21.22	0.00	IV.	8	7.522	37 54.20	8.41	4.03	55 54.24	59 6.64
131	8	. .	25.8	39.6	53.2	7.	. .	. .	0 59 53.13	21.25	0.00	IV.	4	6.130	18 5.18	8.43	2.48	59 31.88	23 39 16.09
132	9	. .	. .	. .	. .	18.	31.1	. .	1 0 4.12	21.25	0.00	V.	9	5.282	41 40.54	8.43	4.31	0 59 42.87	24 2 53.28
133	10	. .	49.	. .	. .	. .	. .	. .	2 16.30	21.27	0.00	II.	4	9.395	19 49.16	8.46	2.60	1 1 55.03	23 41 0.22
134	9	. .	. .	15.3	29.	42.6	. .	. .	3 28.79	21.28	0.00	IV.	3	6.333	13 16.42	8.47	2.11	3 7.51	34 27.00
135	8.9	. .	. .	21.2	35.	. .	. .	. .	4 34.69	21.29	0.00	IV.	2	10.410	10 22.22	8.49	1.89	4 13.40	31 32.60
136	9	. .	. .	5.2	19.	. .	. .	. .	5 18.67	21.29	0.00	IV.	1	13.07	6 36.83	8.50	1.59	4 57.38	27 46.92
137	9	. .	. .	3.2	. .	. .	. .	. .	7 16.49	21.31	0.00	III.	2	5.406	7 50.70	8.52	1.70	6 55.18	29 0.92
138	9	. .	. .	. .	29.2	. .	. .	. .	7 29.05	21.31	0.00	IV.	6	4.43	26 20.10	8.53	3.10	7 7.74	47 31.73
139	8.9	. .	. .	1.0	14.6	. .	. .	. .	8 14.46	21.32	0.00	IV.	4	10.448	20 22.24	8.54	2.64	7 53.14	41 33.42
140	9	. .	. .	. .	28.2	42.	. .	. .	8 28.17	21.32	0.00	IV.	5	3.273	21 40.82	8.54	2.75	8 6.85	42 52.11
141	9	. .	. .	. .	. .	5.	. .	. .	8 51.29	21.32	0.00	V.	4	8.410	19 19.77	8.55	2.55	8 29.97	23 40 30.87
142	9	. .	. .	0.	14.	. .	. .	. .	10 13.80	21.33	0.00	IV.	8	13.035	40 31.16	8.57	4.21	9 52.47	24 1 43.94
143	8	. .	6.	20.1	34.	. .	. .	. .	11 33.63	21.34	0.00	IV.	6	5.510	26 54.38	8.59	3.15	11 12.29	23 48 6.12
144	9	. .	. .	. .	. .	. .	57.8	. .	11 30.56	21.34	0.00	VI.	8	3.152	35 34.37	8.59	3.83	11 9.22	56 46.79
145	9	. .	. .	. .	. .	. .	15.	29.1	11 47.86	21.34	0.00	VI.	4	1.060	15 30.23	8.60	2.29	11 26.52	36 41.12
146	9	. .	. .	. .	. .	. .	58.0	12.1	12 30.95	21.35	0.00	VI.	7	7.152	32 36.69	8.62	4.38	12 9.60	53 49.69
147	9	. .	. .	. .	. .	. .	. .	57.0	13 15.91	21.35	0.00	VII.	6	10.395	29 39.53	8.63	3.36	12 54.56	23 50 51.52
148	9	. .	. .	. .	56.1	. .	. .	. .	15 55.95	21.37	0.00	IV.	9	4.250	41 8.72	8.69	4.25	15 34.58	24 2 21.66
149	9	. .	. .	. .	23.2	37.0	. .	. .	16 23.23	21.37	−0.01	IV.	10	1.582	44 55.59	8.70	4.57	16 1.85	24 6 8.86
150	9	. .	. .	. .	17.0	30.3	. .	. .	17 16.70	21.38	0.00	IV.	3	3.552	11 56.69	8.72	2.02	16 55.32	23 33 7.43
151	7.8	34.1	48.1	1.8	15.1	. .	. .	. .	18 15.17	21.39	0.00	IV.	3	7.030	13 31.39	8.74	2.13	18 53.78	34 42.26
152	9	. .	. .	41.3	. .	. .	. .	. .	18 54.93	21.39	0.00	III.	7	6.270	32 12.50	8.76	3.57	18 33.54	23 53 24.83
153	9	. .	. .	. .	14.4	. .	. .	. .	19 14.25	21.39	0.00	IV.	9	9.470	43.51.09	8.77	4.48	18 52.86	24 5 4.34
154	9	. .	13.1	27.4	41.	. .	. .	. .	21 40.63	21.41	0.00	IV.	2	12.422	11 23.33	8.83	1.96	21 19.22	23 32 34.12
155	9	. .	. .	. .	8.0	. .	. .	. .	22 7.85	21.41	0.00	IV.	10	9.542	48 55.62	8.84	4.89	21 46.44	24 10 9.35
156	9	. .	. .	. .	. .	35.3	48.2	. .	22 21.31	21.42	0.00	V.	6	4.38	26 17.54	8.85	3.10	21 59.89	23 47 29.49
157	8.9	. .	17.2	31.	45.	. .	. .	. .	23 44.75	21.43	0.00	IV.	8	11.340	39 46.05	8.89	4.16	23 23.32	24 0 59.10
158	9	. .	41.	54.2	. .	. .	. .	. .	25 54.36	21.44	0.00	III.	8	10.130	39 5.16	8.93	4.10	24 32.92	24 0 18.19
159	9	. .	. .	. .	. .	. .	24.0	. .	24 56.76	21.43	0.00	VI.	8	7.560	37 55.97	8.93	4.02	24 35.33	23 59 8.92
160	9	39.0	53.	6.8	. .	. .	. .	. .	1 26 20.15	−21.44	0.00	III.	2	12.410	−11 32.76	− 8.97	−1.96	1 25 58.71	−23 32 43.69

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(141) 151. Minutes assumed as 19 instead of 18.
(141) 153. Minutes of transit assumed as 20 instead of 19.
(141) 158. Transits over T.'s III and IV assumed as recorded over T.'s II and III, and minutes assumed as 24 instead of 25.
(141) 160. Minutes assumed as 27 instead of 26, and Micrometer reading assumed as 12ʳ.61 instead of 12ʳ.41.

ZONE 142. OCTOBER 18. H. BELT, −23° 46′. D₀=−23° 21′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	26.8	40.2	. .	2 28 13.06	−21.80	0.00	V.	6	5.37	−26 47.29	−18.30	−3.14	2 27 51.26	−23 48 8.73
2	9	. .	. .	. .	35.2	. .	. .	. .	29 35.05	21.81	−0.01	IV.	10	10.528	49 25.17	18.55	4.96	29 13.23	24 10 48.68
3	9	. .	36.2	50.3	. .	. .	. .	. .	31 3.55	21.81	+0.01	III.	3	6.466	13 23.09	18.79	2.11	30 41.75	23 34 43.99
4	8	. .	. .	5.9	19.0	42.9	. .	. .	31 19.09	21.81	0.00	IV.	4	4.572	17 26.96	18.83	2.43	30 57.28	38 48.22
5	9	. .	. .	4.2	18.	. .	. .	. .	34 17.67	21.83	+0.01	IV.	2	3.42	6 50.94	19.31	1.60	33 55.85	28 11.85
6	9	. .	. .	. .	. .	37.2	50.8	. .	34 23.56	21.83	0.01	V.	3	9.24	14 42.45	19.33	2.21	34 1.74	36 3.99
7	9	. .	. .	. .	48.2	. .	. .	. .	38 4.05	21.84	+0.01	IV.	1	11.378	5 51.86	19.93	1.50	37 42.22	27 13.29
8	10	. .	. .	. .	17.2	. .	43.5	. .	40 17.05	21.85	0.00	IV.	5	4.123	22 3.52	20.29	2.77	39 55.20	43 26.58
9	9	. .	. .	53.1	6.7	20.2	. .	. .	42 6.54	21.86	0.00	IV.	5	3.442	21 49.35	20.59	2.76	41 44.68	23 43 12.70
10	9	. .	33.	46.8	. .	. .	. .	. .	44 0.63	21.87	−0.01	III.	10	13.598	50 59.41	20.92	5.08	43 38.75	24 12 25.41
11	9	. .	. .	. .	. .	41.8	55.0	. .	44 27.96	21.87	0.00	V.	4	5.082	17 32.46	21.00	2.43	44 6.09	23 38 55.89
12	9	. .	. .	15.2	29.2	. .	55.8	. .	45 28.80	21.87	0.00	IV.	6	4.340	26 15.57	21.17	3.10	45 6.93	23 47 39.84
13	9	. .	. .	. .	16.2	. .	. .	. .	46 16.05	21.87	−0.01	IV.	9	8.215	43 7.97	21.30	4.44	45 54.17	24 4 33.71
14	9	. .	. .	. .	. .	40.2	. .	. .	46 26.61	21.88	−0.01	V.	10	4.060	46 0.01	21.33	4.67	46 4.72	24 7 26.01
15	8	. .	. .	10.8	24.1	38.2	. .	. .	47 24.26	21.88	0.00	IV.	5	8.202	24 8.52	21.49	2.93	47 2.38	23 45 32.94
16	8	. .	. .	. .	. .	7.5	21.4	. .	47 54.01	21.88	0.00	V.	4	4.489	17 22.73	21.58	2.42	47 32.13	38 46.73
17	9	. .	. .	. .	. .	. .	. .	42.5	48 1.51	21.88	0.00	VII.	7	6.190	32 8.17	21.59	3.56	47 39.63	53 33.32
18	9	. .	. .	. .	. .	. .	8.	22.	48 40.91	21.88	−0.01	VI.	7	13.29	35 45.17	21.70	3.85	48 19.02	57 10.72
19	8	. .	. .	. .	. .	. .	3.3	17.2	49 36.12	21.89	0.00	VI.	6	8.362	28 17.55	21.86	3.25	49 14.23	49 42.66
20	8.9	. .	. .	. .	. .	45.2	58.6	. .	50 31.45	21.89	+0.01	V.	3	8.306	14 15.53	22.02	2.15	50 9.57	35 39.70
21	9	. .	. .	. .	. .	. .	. .	25.0	50 44.08	21.89	−0.01	VII.	8	7.02	37 28.55	22.05	3.99	50 22.18	58 54.59
22	9	. .	. .	. .	. .	. .	50.8	4.5	51 23.55	21.90	0.00	VI.	7	5.318	31 44.55	22.17	3.53	51 1.65	53 10.25
23	9	. .	57.5	11.5	25.2	. .	. .	. .	52 25.07	21.90	−0.01	IV.	8	6.488	. . .	22.35	4.	53 3.16	
24	9	. .	0.2	14.	27.5	. .	. .	. .	54 27.57	21.91	−0.01	IV.	8	5.488	36 51.97	22.70	3.94	54 5.65	58 18.61
25	9	. .	. .	. .	. .	54.2	7.8	. .	54 40.56	21.91	+0.01	V.	2	11.382	10 51.02	22.73	1.89	54 18.66	32 15.64
26	9	. .	. .	. .	48.6	. .	. .	. .	55 48.45	21.91	+0.01	IV.	2	8.482	9 25.34	22.93	1.78	55 26.55	23 30 50.05
27	9	. .	. .	. .	37.2	50.8	. .	. .	56 37.13	21.92	−0.01	IV.	10	5.390	46 46.94	23.08	4.75	56 15.20	24 8 14.77
28	9	. .	. .	42.3	56.1	9.4	. .	. .	2 57 55.82	21.92	0.00	IV.	5	5.025	22 28.83	23.31	2.81	57 33.90	23 43 54.95
29	9	. .	. .	3.3	17.	. .	. .	. .	3 0 16.90	21.93	0.00	IV.	7	9.11	33 35.23	23.73	3.67	2 59 54.97	23 55 2.67
30	9	. .	55.	8.3	. .	. .	. .	. .	1 22.30	21.94	−0.01	III.	9	9.163	41 4.30	23.92	4.28	3 1 0.35	24 3 32.50
31	9	. .	. .	. .	. .	52.2	. .	. .	1 38.51	21.94	0.00	V.	5	8.370	24 16.96	23.97	2.94	1 16.57	23 45 43.87
32	9	. .	. .	. .	. .	. .	. .	36.5	1 55.49	21.94	0.00	VII.	6	13.508	30 55.97	24.03	3.47	1 33.55	52 23.47
33	8.9	32.6	46.6	0.3	13.2	. .	. .	. .	6 13.50	21.95	+0.01	IV.	3	3.50	12 54.58	24.80	2.07	5 51.56	23 34 21.45
34	9	. .	. .	. .	55.5	. .	. .	. .	6 55.35	21.96	−0.01	IV.	10	6.404	47 17.90	24.93	4.77	6 33.38	24 8 47.60
35	9	. .	. .	. .	. .	16.1	29.5	. .	7 2.37	21.96	−0.01	V.	7	7.380	32 48.30	24.95	3.61	6 40.40	23 54 16.86
36	9	. .	. .	. .	. .	. .	. .	56.	7 14.71	21.96	+0.01	VII.	2	8.045	14 2.07	24.98	2.15	6 52.76	35 29.20
37	9	. .	. .	. .	. .	. .	9.	. .	8 41.82	21.96	0.00	VI.	4	8.060	19 2.02	25.25	2.53	8 19.86	40 29.80
38	9	. .	. .	. .	. .	. .	49.2	. .	9 21.99	21.97	0.00	VI.	6	10.045	29 2.07	25.37	3.31	9 0.02	50 30.75
39	9	. .	28.	. .	56.1	. .	. .	. .	10 55.60	21.97	+0.01	IV.	3	5.271	12 43.08	25.67	2.04	10 33.64	23 34 10.79
40	7.8	. .	. .	. .	. .	18.2	31.6	. .	11 4.47	21.97	−0.01	V.	9	7.582	42 56.18	25.70	4.44	10 42.49	24 4 26.32
41	9	. .	. .	. .	. .	. .	. .	3.	11 21.71	21.97	+0.01	VII.	2	8.503	9 26.06	25.75	1.78	10 59.75	23 30 53.59
42	9	. .	46.1	. .	13.1	. .	. .	. .	13 13.13	21.98	+0.01	IV.	2	11.261	10 44.96	26.11	1.88	12 51.16	32 12.95
43	9	. .	1.8	15.5	29.3	. .	. .	. .	14 29.15	21.98	0.00	IV.	6	11.372	29 48.96	26.35	3.37	14 7.17	51 18.68
44	9	. .	. .	. .	51.	. .	. .	. .	14 50.85	21.98	+0.01	IV.	3	11.40	15 51.07	26.43	2.29	14 28.88	23 37 19.79
45	6	. .	. .	. .	12.5	. .	. .	. .	15 11.85	21.98	−0.01	IV.	10	10.150	49 6.11	26.49	4.94	14 49.86	24 10 37.54
46	9	. .	3.0	16.6	. .	. .	. .	. .	16 30.16	21.98	+0.01	III.	2	6.365	8 18.90	26.73	1.68	16 8.19	23 29 47.31
47	9	. .	. .	. .	. .	41.2	. .	. .	16 27.60	21.98	−0.01	V.	9	8.050	42 59.62	26.72	4.45	16 5.61	24 4 30.79
48	9	. .	. .	. .	. .	10.5	. .	. .	16 56.88	21.98	0.01	V.	8	8.162	38 6.27	26.83	4.05	16 34.89	23 59 37.15
49	9	. .	. .	. .	. .	28.2	. .	. .	3 17 14.58	−21.98	−0.01	V.	8	9.532	−38 55.17	−26.87	−4.12	3 16 52.59	−24 0 26.16

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(142) 4. Time of transit over T. V assumed as 32ˢ.9 instead of 42ˢ.9.
(142) 23. Minutes assumed as 54 instead of 52.
(142) 30. Micrometer reading assumed as 4ʳ.163 instead of 9ʳ.163.
(142) 33. Micrometer reading assumed as 5ʳ.50 instead of 3ʳ.50.
(142) 36. Hor. thread assumed as 3 instead of 2.

ZONE 142. OCTOBER 18. H. BELT, −23° 46′. D_0 = −23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	. .	. .	52.1	. .	3 17 24.84	−21.98	−0.01	VI.	8	4.220	−36 8.06	−26.90	−3.89	3 17 2.85	−23 57 38.83
51	9	. .	. .	57.0	. .	. .	. .	. .	19 10.72	21.99	−0.01	III.	8	9.310	38 43.98	27.23	4.10	18 50.72	24 0 15.31
52	9	. .	44.2	. .	. .	. .	25.2	. .	20 11.39	21.99	+0.02	IV.	1	8.322	4 18.28	27.43	1.37	19 49.42	23 25 47.08
53	6.7	. .	56.4	. .	24.4	. .	51.2	. .	23 24.02	22.00	−0.01	IV.	8	8.310	38 13.77	28.04	4.07	23 2.01	59 45.88
54	9	. .	33.	46.6	. .	. .	. .	. .	25 0.18	22.01	0.00	VI.	4	10.360	20 17.66	28.39	2.63	24 38.17	41 48.68
55	9	. .	. .	. .	10.5	. .	. .	. .	25 10.35	22.01	+0.01	IV.	2	7.025	8 32.04	28.42	1.70	24 48.35	23 30 2.16
56	9	. .	. .	. .	27.0	. .	. .	. .	26 26.85	22.01	−0.02	IV.	10	5.518	46 53.38	28.65	4.76	26 4.82	24 8 26.79
57	9	. .	0.0	13.8	. .	. .	. .	. .	27 27.12	22.01	+0.01	III.	1	11.460	5 55.96	28.85	1.51	27 5.12	23 27 26.32
58	9	. .	14.0	27.5	. .	. .	. .	. .	28 41.14	22.02	0.00	III.	4	11.038	20 31.77	29.07	2.65	28 19.12	42 3.49
59	9	. .	. .	39.5	53.2	6.3	. .	. .	29 52.85	22.02	+0.01	IV.	4	5.27	17 41.98	29.32	2.43	29 30.84	23 39 13.73
60	9	. .	. .	38.2	52.1	. .	. .	. .	29 51.94	22.02	−0.01	IV.	8	10.530	39 25.37	29.32	4.13	29 29.91	24 0 58.82
61	9	. .	. .	. .	19.5	. .	. .	. .	30 19.35	22.02	−0.01	IV.	7	12.128	35 6.90	29.41	3.80	29 57.32	23 56 40.11
62	9	. .	. .	. .	. .	37.1	50.8	. .	30 23.52	22.02	0.00	V.	6	13.033	30 32.32	29.42	3.43	30 1.50	52 5.17
63	9	. .	52.1	5.8	. .	. .	. .	. .	32 19.25	22.02	+0.01	III.	3	6.313	13 15.37	29.81	2.07	31 57.24	23 34 47.25
64	9	. .	. .	33.0	. .	. .	. .	. .	32 46.77	22.03	−0.01	III.	9	5.445	41 48.77	29.89	4.36	32 24.73	24 3 23.02
65	9	. .	. .	. .	. .	38.0	. .	. .	33 24.38	22.03	−0.01	V.	8	9.100	38 33.39	30.02	4.09	33 2.34	24 0 7.50
66	9	. .	. .	. .	. .	. .	9.6	. .	33 42.38	22.03	0.00	VI.	7	6.53	32 25.50	30.08	3.59	33 20.35	23 53 59.17
67	9	. .	. .	. .	. .	. .	46.	. .	34 18.88	22.03	+0.02	VI.	1	5.030	2 32.63	30.20	1.23	33 56.87	24 4.06
68	9	. .	. .	34.1	. .	. .	. .	. .	35 47.54	22.03	+0.01	III.	4	7.155	13 37.65	30.50	2.13	35 25.52	35 10.28
69	9	. .	. .	. .	58.1	. .	. .	. .	35 57.95	22.03	0.00	IV.	5	4.262	22 10.53	30.54	2.76	35 35.92	23 43 43.83
70	9	. .	. .	. .	. .	. .	20.8	. .	35 53.52	22.03	−0.02	VI.	10	4.216	46 7.75	30.53	4.71	35 31.47	24 7 42.99
71	9	. .	. .	. .	. .	. .	. .	57.5	36 16.18	22.03	+0.01	VII.	2	4.206	7 10.06	30.59	1.60	35 54.16	23 28 42.25
72	6.7	. .	18.2	32.1	45.8	. .	. .	. .	38 45.65	22.04	0.00	IV.	6	11.132	29 36.85	31.09	3.35	38 23.61	51 11.29
73	9	. .	. .	. .	32.	. .	. .	. .	39 3.05	22.04	+0.02	IV.	1	6.40	3 21.70	31.15	1.29	38 41.03	24 54.14
74	9	. .	35.8	49.2	. .	. .	. .	. .	40 2.79	22.04	+0.01	III.	3	3.13	11 35.37	31.35	1.94	39 40.76	33 8.66
75	3.4	. .	18.5	32.	46.	. .	. .	. .	40 45.70	22.04	0.00	IV.	4	10.148	20 7.11	31.50	2.62	40 23.66	41 41.23
76	9	. .	. .	21.8	. .	. .	. .	. .	41 35.33	22.04	0.00	III.	5	10.404	24 48.92	31.68	2.99	41 13.29	46 23.59
77	9	. .	. .	42.2	56.	. .	. .	. .	41 55.74	22.04	+0.01	IV.	4	6.230	18 10.22	31.76	2.46	41 33.71	23 39 44.44
78	9	. .	. .	. .	22.	. .	. .	. .	42 21.85	22.04	−0.02	IV.	10	8.06	48 1.07	31.83	4.87	41 59.79	24 9 37.77
79	9	. .	. .	. .	. .	36.	50.	. .	42 22.56	22.04	−0.01	V.	9	10.355	44 15.51	31.83	4.55	42 0.51	24 5 51.89
80	9	. .	. .	. .	. .	21.2	. .	. .	43 7.46	22.05	+0.01	V.	2	13.10	11 37.30	32.00	1.94	42 45.42	23 33 11.24
81	9	. .	. .	. .	. .	8.3	. .	. .	43 54.57	22.05	+0.01	V.	3	8.192	14 9.78	32.17	2.13	43 32.53	35 44.08
82	9	. .	. .	. .	. .	8.0	. .	. .	44 54.37	22.05	−0.01	V.	7	13.250	35 43.26	32.38	3.84	44 32.31	57 19.48
83	7.8	. .	22.4	36.2	. .	. .	. .	. .	47 49.60	22.06	+0.01	III.	3	5.24	12 41.43	32.97	2.03	47 27.55	34 16.43
84	9	. .	. .	. .	. .	. .	. .	34.5	47 53.51	22.06	0.00	VII.	7	5.152	31 35.99	32.98	3.52	47 31.45	53 12.49
85	9	10.5	. .	. .	. .	. .	. .	. .	49 51.86	22.06	−0.01	I.	8	7.292	37 42.26	33.40	4.03	49 29.79	59 19.69
86	9	. .	. .	38.4	. .	. .	. .	. .	49 51.68	22.06	+0.01	III.	2	4.44	7 22.17	33.40	1.61	49 29.63	28 57.18
87	9	. .	. .	. .	7.	20.6	. .	. .	50 6.90	22.06	0.00	IV.	7	2.33	30 14.55	33.45	3.41	49 44.84	51 51.41
88	9	. .	. .	33.2	47.	. .	. .	. .	50 46.73	22.06	+0.01	IV.	3	11.230	15 42.49	33.59	2.29	50 24.68	37 18.37
89	9	. .	. .	. .	12.8	. .	. .	. .	51 12.65	22.06	−0.01	IV.	7	13.286	35 45.11	33.68	3.85	50 50.58	57 22.64
90	9	. .	18.5	. .	. .	. .	. .	. .	52 45.69	22.06	+0.02	II.	2	5.010	7 30.62	34.01	1.62	52 23.65	29 6.25
91	9	. .	. .	. .	. .	6.2	. .	. .	52 52.46	22.06	0.01	V.	3	5.462	12 52.63	34.03	2.05	52 30.41	34 28.71
92	9	. .	36.2	. .	. .	. .	. .	. .	54 49.59	22.06	0.01	II.	3	9.185	14 39.56	34.23	2.19	53 27.54	36 15.99
93	9	. .	0.	. .	. .	. .	. .	. .	54 13.38	22.06	0.01	II.	3	8.315	14 15.87	34.33	2.15	53 51.33	35 52.35
94	9	. .	. .	. .	19.6	. .	. .	. .	54 19.45	22.06	+0.01	IV.	3	7.398	13 49.95	34.35	2.12	53 57.40	35 26.42
95	9	. .	. .	45.3	59.2	. .	. .	. .	54 58.91	22.06	0.00	IV.	4	11.402	20 50.17	34.48	2.68	54 36.85	23 42 27.33
96	9	. .	. .	. .	3.3	. .	. .	. .	57 3.15	22.07	−0.02	IV.	9	13.243	45 40.65	34.91	4.68	56 41.06	24 7 20.24
97	9	. .	. .	59.0	. .	. .	. .	. .	58 12.42	22.07	+0.01	III.	4	4.355	17 15.98	35.17	2.39	57 50.36	23 38 53.54
98	9	12.	. .	. .	. .	. .	. .	. .	3 58 52.48	−22.07	0.00	I.	7	1.522	−29 53.63	−35.50	−3.38	3 59 30.41	−23 51 32.51

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(142) 53. Transit observation on T. VI assumed as 51^{s}.2 instead of 57^{s}.2.
(142) 68. Hor. thread assumed as 3 instead of 4.
(142) 92. Transit over T. III assumed as recorded over T. II, and minutes assumed as 53 instead of 54.
(142) 93. Transit over T. III assumed as recorded over T. II.
(142) 98. Transit over T. I assumed as 11^{s}.2 instead of 1^{s}.2, and minutes assumed as 59 instead of 58.

ZONE 142. OCTOBER 18. H. BELT, −23° 46′. D₀=−23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	9	. .	41.0	. .	. .	. .	. .	. .	3 59 8.60	−22.07	0.00	II.	4	9.218	−19 40.22	−35.56	−2.59	3 59 46.53	−23 41 18.37
100	8.9	. .	. .	. .	10.	23.5	. .	. .	3 59 9.85	22.07	0.00	IV.	7	5.261	31 41.83	35.56	3.53	59 47.78	53 20.92
101	9	. .	. .	. .	. .	. .	. .	50.8	4 0 9.60	22.07	+0.01	VII.	4	4.265	17 11.14	35.58	2.39	3 59 47.54	38 49.11
102	9	. .	. .	. .	. .	32.1	. .	. .	1 23.36	22.07	−0.01	V.	7	8.110	33 4.94	35.86	3.63	4 1 1.28	54 44.43
103	9	. .	. .	. .	44.1	. .	. .	. .	1 43.95	22.07	+0.02	IV.	2	7.450	8 53.47	35.93	1.72	1 21.90	30 31.12
104	9	. .	. .	. .	. .	. .	30.2	. .	2 2.97	22.07	−0.01	VI.	7	12.360	32 18.46	35.99	3.57	1 40.89	53 58.02
105	9	. .	55.2	. .	. .	. .	. .	. .	3 22.63	22.07	−0.01	II.	7	9.585	33 59.03	36.27	3.71	3 0.55	55 39.01
106	9	. .	. .	54.5	. .	. .	. .	. .	4 8.08	22.07	0.00	III.	6	8.340	28 16.54	36.44	3.25	3 46.01	49 56.23
107	9	. .	29.	43.	. .	. .	. .	. .	4 56.44	22.07	0.00	III.	5	10.130	25 5.36	36.64	3.01	4 34.37	46 45.01
108	9	. .	. .	. .	. .	59.	. .	. .	5 45.27	22.08	+0.01	V.	3	9.152	14 38.01	36.80	2.18	5 23.20	36 16.99
109	8	. .	34.2	48.	2.	. .	. .	. .	6 1.52	22.08	+0.02	IV.	2	8.205	9 11.37	36.85	1.73	5 39.46	30 49.95
110	9	. .	. .	. .	. .	. .	. .	23.6	6 42.47	22.08	0.00	VII.	5	4.072	22 0.61	36.99	2.77	6 20.39	43 40.37
111	9	. .	. .	. .	. .	. .	39.2	. .	7 12.08	22.08	+0.02	VI.	1	9.262	4 45.35	37.11	1.39	6 50.02	23 26 23.85
112	9	. .	. .	. .	. .	. .	. .	34.	7 53.16	22.08	−0.02	VII.	9	8.425	43 18.23	37.26	4.48	7 31.06	24 4 59.97
113	9	. .	. .	. .	. .	. .	. .	55.2	8 14.36	22.08	−0.02	VII.	9	8.082	43 0.93	37.32	4.46	7 52.26	24 4 42.71
114	9	. .	. .	23.	. .	. .	. .	. .	9 22.85	22.08	0.00	III.	5	6.082	23 1.92	37.57	2.84	9 10.77	23 44 42.33
115	9	. .	. .	. .	. .	55.5	. .	. .	9 41.83	22.08	0.00	V.	6	4.161	26 6.50	37.65	3.09	9 19.75	47 47.24
116	7.8	. .	. .	. .	. .	. .	11.4	25.2	9 44.11	22.08	+0.01	VI.	3	10.430	15 22.18	37.66	2.26	9 22.04	37 2.10
117	9	. .	. .	. .	. .	. .	56.	. .	10 28.78	22.08	−0.01	VI.	7	7.510	32 54.74	37.83	3.63	10 6.69	23 54 36.20
118	9	. .	. .	. .	42.	. .	. .	. .	11 41.85	22.08	−0.02	IV.	10	9.088	48 32.72	38.08	4.92	11 19.75	24 10 15.72
119	9	. .	. .	. .	. .	3.5	. .	. .	11 49.81	22.08	0.00	V.	5	8.128	24 4.75	38.11	2.92	11 27.73	23 45 45.78
120	9	. .	. .	. .	14.5	28.	. .	55.2	13 14.25	22.08	0.00	IV.	5	10.288	25 13.36	38.42	3.02	12 52.17	23 46 54.80
121	9	. .	. .	52.2	. .	. .	. .	. .	15 6.00	22.09	−0.02	III.	9	10.288	44 12.12	38.82	4.57	14 43.89	24 25 55.51
122	9	. .	. .	19.2	. .	. .	. .	. .	16 33.01	22.09	−0.02	III.	9	11.570	44 56.60	39.15	4.63	16 10.90	24 6 40.38
123	9	. .	. .	52.6	6.0	. .	. .	. .	17 5.88	22.09	+0.02	IV.	2	9.480	9 55.49	39.28	1.79	16 43.81	23 31 36.56
124	9	. .	28.8	42.2	56.4	. .	. .	. .	17 56.18	22.09	−0.02	IV.	9	9.122	43 33.54	39.47	4.51	17 34.07	24 5 17.52
125	9	. .	. .	. .	30.	. .	. .	. .	18 29.85	22.09	+0.02	IV.	1	10.390	5 22.22	39.60	1.44	18 7.78	23 27 3.26
126	9	. .	. .	53.0	. .	. .	. .	. .	20 6.27	22.09	0.02	III.	1	11.40	5 52.93	39.95	1.48	19 44.20	27 34.36
127	8.9	. .	. .	. .	31.8	. .	. .	. .	20 31.65	22.09	+0.02	IV.	2	3.555	6 57.74	40.04	1.57	20 9.58	28 39.35
128	9	. .	. .	4.2	18.1	. .	. .	. .	21 17.89	22.09	−0.01	IV.	7	5.255	31 41.52	40.22	3.53	20 55.79	53 25.27
129	9	. .	. .	. .	. .	46.4	. .	. .	21 32.65	22.09	+0.01	V.	3	2.280	11 12.68	40.27	1.90	21 10.57	32 54.85
130	9	. .	. .	. .	15.2	. .	. .	. .	22 15.05	22.09	+0.02	IV.	1	9.112	4 37.93	40.43	1.44	21 52.98	26 19.80
131	9	. .	. .	. .	. .	. .	50.3	4.3	22 23.16	22.09	0.00	VI.	5	10.02	24 59.71	40.47	3.00	22 1.07	46 43.18
132	9	. .	. .	. .	42.5	. .	. .	. .	23 42.35	22.09	0.00	IV.	6	8.565	28 27.93	40.74	3.27	23 20.26	50 11.94
133	9	. .	. .	. .	8.2	. .	. .	. .	24 8.05	22.09	0.00	IV.	6	11.248	29 42.70	40.84	3.36	23 45.96	51 26.90
134	9	. .	. .	. .	25.0	. .	. .	. .	24 25.35	22.09	0.00	IV.	6	7.172	27 37.85	40.91	3.21	24 3.26	49 21.97
135	9	. .	. .	. .	. .	. .	55.2	. .	24 27.97	22.09	−0.01	VI.	8	2.55	35 24.19	40.94	3.83	24 5.87	57 8.96
136	9	. .	. .	. .	. .	. .	. .	31.	24 49.87	22.09	0.00	VII.	5	4.575	22 25.97	41.01	2.73	24 27.78	44 9.76
137	9	. .	. .	. .	. .	. .	. .	57.5	25 16.35	22.09	+0.01	VII.	5	1.362	20 44.47	41.11	2.67	24 54.27	42 28.25
138	9	. .	36.6	50.2	. .	. .	. .	. .	27 3.76	22.09	+0.01	III.	4	6.090	18 3.13	41.51	2.43	26 41.68	49 47.07
139	9	. .	. .	8.	21.2	35.	. .	. .	27 21.33	22.09	−0.01	IV.	7	6.320	32 15.07	41.57	3.57	26 59.23	54 0.21
140	9	. .	57.1	11.	. .	. .	. .	. .	28 24.46	22.09	0.00	III.	5	5.196	22 37.41	41.80	2.82	28 2.37	44 22.03
141	9	. .	52.6	6.2	. .	. .	. .	. .	29 19.71	22.09	+0.01	III.	3	8.480	14 24.30	42.02	2.17	28 57.63	36 8.49
142	9	. .	. .	. .	. .	. .	. .	43.2	28 2.21	22.09	−0.01	VII.	7	6.518	32 24.70	41.72	3.59	27 40.11	54 10.01
143	9	. .	. .	. .	. .	. .	17.	. .	29 49.78	22.09	−0.01	VI.	7	5.43	31 50.20	42.13	3.54	29 27.68	53 35.87
144	9	. .	. .	. .	. .	. .	44.2	58.5	31 17.16	22.09	+0.01	VI.	3	10.535	15 27.47	42.47	2.25	30 55.08	23 37 12.19
145	9	. .	. .	. .	48.2	. .	. .	. .	32 48.05	22.09	−0.02	IV.	9	4.280	41 10.23	42.81	4.32	32 25.94	24 2 57.36
146	9	. .	. .	. .	5.3	. .	. .	. .	33 5.15	22.09	0.02	IV.	9	6.078	42 20.73	42.88	4.38	32 43.04	24 4 7.99
147	9	. .	49.2	3.0	. .	. .	. .	. .	4 36 16.61	−22.08	−0.01	III.	7	4.000	−30 58.38	−43.62	−3.47	4 35 54.52	−23 52 45.47

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(142) 99. Minutes assumed as 0 instead of 59.
(142) 100. Minutes assumed as 0 instead of 59.
(142) 114. Transit over T. IV assumed as recorded over T. III.
(142) 144. Declination 16′ greater than that of Mural Z., 1849, January 27.
(142) 146. Micrometer reading assumed as 6ʳ.478 instead of 6ʳ.078.

ZONE 142. OCTOBER 18. H. BELT, −23° 46′. D₀=−23° 21′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
148	8	. .	. .	11.	24.1	. .	. .	. .	4 36 24.11	−22.08	+0.02	IV.	1	11.143?	− 5 40.01	−43.65	−1.47	4 36 2.05	−23 27 25.13
149	9	. .	53.2	7.	21.	. .	. .	. .	37 20.70	22.08	−0.01	IV.	7	8.06	33 2.47	43.86	3.63	36 58.61	23 54 49.96
150	9	. .	. .	. .	. .	. .	40.6	. .	37 13.32	22.08	0.02	VI.	10	4.260	46 9.98	43.84	4.72	36 51.22	24 7 58.54
151	9	. .	17.2	31.	. .	. .	. .	. .	38 44.67	22.08	0.01	III.	8	5.192	36 37.01	44.17	3.94	38 22.58	24 58 25.12
152	9	. .	. .	. .	48.2	2.1	. .	. .	38 48.26	22.08	0.01	IV.	8	4.470	36 20.82	44.18	3.91	38 26.17	23 58 8.91
153	9	. .	. .	. .	. .	32.	45.1	. .	39 17.62	22.08	−0.02	V.	9	11.566	44 56.40	44.30	4.63	38 55.52	24 6 45.33
154	9	. .	. .	. .	. .	17.	. .	. .	40 3.26	22.08	+0.01	V.	3	4.188	12 8.55	44.47	1.99	39 41.19	23 33 55.01
155	9	. .	. .	. .	. .	. .	53.3	. .	40 26.10	22.08	0.00	VI.	6	4.140	26 5.33	44.55	3.09	40 4.02	47 52.97
156	9	. .	. .	. .	13.2	. .	. .	. .	41 13.05	22.08	−0.01	IV.	8	2.212	35 7.29	44.74	3.80	40 50.96	56 55.83
157	9	. .	. .	. .	. .	55.3	. .	. .	41 41.63	22.08	0.00	V.	6	3.410	25 48.79	44.85	3.06	41 19.55	47 36.70
158	9	. .	21.8	. .	. .	. .	. .	. .	42 49.25	22.08	−0.01	II.	8	4.205	36 7.30	45.13	3.88	42 27.16	57 56.31
159	9	. .	. .	39.2	53.	. .	. .	. .	42 52.69	22.08	+0.02	IV.	2	11.033	10 33.46	45.14	1.85	42 30.63	32 20.45
160	9	. .	. .	. .	. .	. .	5.5	. .	44 38.36	22.08	+0.01	VI.	2	12.288	11 16.41	45.53	1.91	44 16.29	33 3.85
161	9	. .	29.0	. .	. .	. .	. .	. .	47 56.32	22.08	0.00	II.	4	13.040	21 32.27	46.30	2.73	47 34.24	43 21.30
162	9	. .	. .	55.0	9.0	. .	. .	. .	48 8.68	22.08	0.00	IV.	5	6.215	23 8.66	46.34	2.84	47 46.60	44 57.84
163	9	. .	. .	. .	34.8	. .	. .	. .	48 34.65	22.08	0.00	IV.	5	6.322	23 14.07	46.46	2.84	48 12.57	45 3.37
164	9	. .	. .	. .	. .	7.	. .	. .	48 53.32	22.08	0.00	V.	5	9.065	24 31.83	46.52	2.96	48 31.24	46 21.31
165	9	. .	. .	. .	. .	30.	43.6	. .	49 16.36	22.08	+0.01	V.	4	3.49	16 52.53	46.62	2.38	48 54.29	38 41.53
166	9	. .	. .	. .	. .	. .	10.2	. .	49 43.07	22.08	0.02	VI.	2	5.19	7 39.70	46.72	1.60	49 21.01	29 28.02
167	9	. .	. .	. .	31.0	44.5	. .	. .	50 30.80	22.08	+0.02	IV.	2	9.58	10 0.53	46.91	1.79	50 8.74	31 49.23
168	9	. .	. .	. .	. .	. .	. .	8.1	50 27.09	22.08	−0.02	VII.	7	3.38	30 46.98	46.90	3.45	50 4.99	52 37.33
169	9	. .	. .	. .	49.	. .	. .	. .	54 48.85	22.07	−0.01	IV.	8	3.118	35 32.80	47.93	3.86	54 26.77	57 24.59
170	8.9	. .	. .	. .	. .	38.1	. .	. .	55 24.46	22.07	0.01	V.	7	10.	33 59.90	48.07	3.73	55 2.38	23 55[51.70]
171	9	. .	. .	19.8	. .	. .	. .	. .	56 33.52	22.07	−0.01	III.	8	8.350	38 15.74	48.34	4.08	56 11.44	24 0 8.16
172	9	. .	. .	. .	20.6	. .	. .	. .	57 20.45	22.07	+0.02	IV.	1	13.021	6 34.36	48.54	1.51	56 58.40	23 28 24.41
173	9	. .	. .	. .	10.8	. .	. .	. .	58 10.65	22.06	−0.01	IV.	7	8.092	33 4.08	48.74	3.65	57 48.58	23 54 56.47
174	9	. .	. .	. .	. .	34.1	. .	. .	58 20.51	22.06	−0.02	V.	10	4.542	46 24.30	48.78	4.75	57 58.43	24 8 17.83
175	9	. .	. .	57.	. .	. .	. .	. .	59 10.43	22.06	+0.01	III.	4	5.065	17 31.60	48.98	2.40	58 48.38	23 39 22.98
176	9	. .	. .	. .	34.5	48.2	. .	. .	59 34.44	22.06	0.00	IV.	6	8.550	28 27.17	49.08	3.27	59 12.38	50 19.52
177	9	. .	. .	. .	. .	. .	20.	. .	4 59 38.68	−22.06	+0.02	VI.	2	6.527	− 8 26.95	−49.09	−1.67	4 59 16.64	−23 30 17.71

ZONE 143. OCTOBER 28. K. BELT, −23° 8′. D₀=−22° 43′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	27.2	. .	22 8 0.06	−28.92	+0.01	I.	9	9.7	−43 30.59	− 5.96	−4.38	22 7 31.15	−23 27 10.93
2	6	41.0	54.6	8.5	. .	. .	. .	. .	10 21.87	28.94	0.00	IV.	4	8.14	19 6.20	5.79	2.56	9 52.93	2 44.55
3	9	. .	. .	55.1	. .	22.3	. .	. .	11 8.85	28.95	+0.01	IV.	10	10.4	49 0.57	5.74	4.82	10 39.91	23 32 41.13
4	6	. .	. .	. .	12.2	. .	39.2	. .	12 12.05	28.96	−0.01	IV.	1	4.47	2 24.72	5.67	1.33	11 43.08	22 46 1.72
5	9	. .	. .	21.1	. .	. .	. .	. .	16 34.45	29.01	0.00	IV.	4	4.36	17 16.28	5.37	2.44	16 5.44	23 0 54.09
6	9	. .	11.8	. .	. .	. .	. .	. .	19 39.09	29.05	+0.01	IV.	7	10.10	34 4.99	5.18	3.70	19 10.05	23 17 43.87
7	5	21.7	. .	49.2	. .	. .	. .	. .	21 2.49	29.06	−0.01	IV.	1	12.48	6 27.25	5.10	1.65	20 33.42	22 50 4.00
8	9	. .	. .	. .	49.6	. .	. .	. .	23 49.45	29.09	+0.01	IV.	9	7.37	42 45.54	4.94	4.33	23 20.37	23 26 24.81
9	9	. .	. .	. .	41.3	. .	. .	. .	30 41.15	29.16	0.01	IV.	10	6.50	47 22.74	4.56	4.69	30 12.00	31 1.99
10	9	. .	. .	. .	23.2	. .	. .	. .	31 23.05	29.16	0.01	IV.	9	4.34	41 13.27	4.52	4.21	30 53.90	24 52.00
11	9	. .	. .	4.8	. .	. .	. .	. .	41 18.53	29.26	0.01	IV.	9	8.17	43 5.71	4.03	4.36	40 49.28	26 44.10
12	9	. .	. .	48.2	. .	. .	. .	. .	43 1.98	29.28	+0.01	IV.	10	5.19	46 36.85	3.95	4.63	42 32.71	30 15.43
13	5.6	. .	50.2	4.0	17.3	. .	. .	. .	47 17.35	29.33	0.00	IV.	6	3.27	25 51.85	3.75	3.06	46 48.02	9 28.66
14	9	. .	. .	. .	10.5	. .	. .	. .	50 10.35	29.36	+0.01	IV.	9	4.10	41 1.16	3.62	4.20	49 41.00	24 38.98
15	8	. .	24.0	37.8	. .	. .	. .	. .	22 52 51.37	−29.39	0.00	IV.	8	4.18	−36 6.19	− 3.53	−3.86	22 52 21.98	−23 19 43.58

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Oct. 28,	20	f 35.70	g 0.038	+ 0.090	+ 0.131	0.000

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 143	Oct. 28,	9	5	30.754	78.8	33.2

REMARKS.

(142) 177. Transit over T. VII assumed to have been recorded as over T. VI.
(143) 13. Micrometer reading assumed as 3ʳ.47 instead of 3ʳ.27.

ZONE 143. OCTOBER 28. K. BELT, −23° 8'. D₀=−22° 43' 30"—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
16	8	..	31.5	45.4	59.3	..	..	..	22 53 58.95	−29.40	0.00	IV.	7	1.30	−29 42.78	− 3.48	−3.36	22 53 29.55	−23 13 19.62
17	7	..	11.2	24.9	..	..	..	..	56 38.31	29.43	0.00	IV.	4	7.33	18 45.52	3.38	2.54	56 8.88	2 21.44
18	6	11.1	24.8	38.8	52.5	5.1	19.2	32.4	22 57 52.05	29.44	0.00	IV.	7	10.12	34 6.00	3.34	3.70	22 57 22.61	17 43.04
19	4.5	42.3	56.3	9.8	23.5	36.8	50.0	4.1	23 2 23.31	29.48	0.00	IV.	7	7.12	32 35.23	3.19	3.58	23 1 53.83	16 12.00
20	9	36.7	50.4	4.6	18.0	31.9	44.8	58.3	16 17.93	29.63	+0.01	IV.	9	6.42	42 17.81	2.85	4.29	15 48.31	25 54.95
21	8	..	..	..	32.7	45.8	59.3	13.4	17 32.41	29.64	0.00	IV.	8	3.47	35 50.56	2.83	3.84	17 2.77	23 19 27.23
22	9	8.4	21.9	35.6	49.1	2.8	..	30.2	21 49.09	29.69	0.00	IV.	3	9.34	14 47.54	2.76	2.25	21 19.40	22 58 22.55
23	8.9	..	..	..	7.1	20.8	33.7	48.2	23 6.95	29.70	−0.01	IV.	1	12.55	6 30.78	2.74	1.65	22 37.24	22 50 5.17
24	9	..	22.7	..	..	3.2	16.2	30.3	37 49.62	29.85	+0.01	IV.	9	10.12	44 3.70	2.64	4.42	37 19.78	23 27 40.76
25	9	28.0	42.0	55.5	9.2	..	36.0	50.3	40 9.08	29.87	0.00	IV.	5	5.24	22 39.67	2.64	2.82	39 39.21	6 15.13
26	9	29.1	42.8	56.8	10.2	23.7	36.7	51.1	43 10.03	29.90	0.00	IV.	5	2.03	20 58.32	2.66	2.70	42 40.13	23 4 33.68
27	6.7	..	26.0	40.0	53.2	7.2	20.4	34.4	48 53.24	29.96	0.00	IV.	1	12.6	6 6.08	2.70	1.61	48 23.28	22 49 40.39
28	9	..	12.9	26.4	40.0	53.4	..	21.0	23 52 40.00	30.00	0.00	IV.	7	6.35	32 16.58	2.75	3.56	23 52 10.00	23 15 52.89
29	5.6	55.8	9.4	23.2	36.8	50.2	3.2	17.6	0 0 36.68	−30.07	0.00	IV.	8	5.57	−36 56.11	− 2.90	−3.93	0 0 6.61	−23 20 32.94

ZONE 144. OCTOBER 28. K. BELT, −23° 8'. D₀=−22° 43' 30".

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	..	..	..	..	35.3	..	1 30 8.22	−30.86	0.00	VI.	6	9.58	−28 58.78	..	−3.30	1 29 37.36	
2	9	..	21.3	..	..	..	..	..	34 48.38	30.89	0.00	IV.	2	10.18	10 10.62	..	1.85	34 17.49	
3	9	..	31.0	..	58.9	..	..	..	36 58.57	30.91	0.00	IV.	10	3.50	45 51.97	..	4.63	36 27.66	
4	9	11.8	25.2	39.7	..	..	..	..	41 52.69	30.94	0.00	IV.	3	9.3	14 31.90	..	2.18	41 21.75	
5	9	..	..	24.1	..	..	..	..	42 37.51	30.95	0.00	IV.	4	12.52	21 26.37	..	2.74	42 6.56	
6	9	..	..	36.3	..	..	..	..	43 50.08	30.96	−0.01	IV.	10	6.23	47 9.12	..	4.75	43 19.11	
7	9	25.5	..	53.0	..	..	..	..	45 6.34	30.97	+0.01	IV.	2	12.11	11 7.59	..	1.92	44 35.38	
8	9	..	..	55.4	..	..	..	..	46 8.88	30.97	0.00	IV.	5	13.48	26 53.80	..	3.15	45 37.91	
9	9	..	55.9	..	..	..	..	..	49 23.20	30.99	0.00	IV.	7	12.28	35 14.56	..	3.82	48 52.21	
10	4.5	..	42.7	56.0	10.2	..	..	..	50 9.86	30.99	0.00	VII.	7	6.5	32 1.12	..	3.54	49 38.87	
11	9	..	..	..	..	..	..	14.1	52 33.02	31.01	+0.01	VII.	3	2.47	11 21.98	..	1.94	52 2.02	
12	8.7	50.7	4.6	18.6	..	..	..	..	1 59 31.70	31.07	+0.01	IV.	2	7.13	8 37.33	..	1.70	1 59 0.64	
13	9	..	..	..	16.0	..	..	..	2 9 15.85	31.13	0.00	IV.	7	10.26	34 13.06	..	3.71	2 8 44.72	
14	9	..	..	..	13.8	..	..	..	11 13.65	31.14	0.00	IV.	2	4.37	7 18.68	..	1.64	10 42.51	
15	9	..	..	..	..	3.9	..	..	11 50.33	31.15	0.00	IV.	7	8.31	33 15.07	..	3.63	11 19.18	
16	9	..	..	48.3	..	..	..	..	14 1.48	31.16	+0.01	IV.	1	9.41	4 52.96	..	1.44	13 30.33	
17	9	..	..	..	..	..	47.9	..	14 20.80	31.16	0.00	IV.	7	9.46	33 52.89	..	3.68	13 49.64	
18	6	..	8.4	..	..	..	..	..	23 35.71	31.21	0.00	IV.	8	6.58	37 26.87	..	4.00	23 4.50	
19	5.4	..	..	0.0	13.9	..	..	..	24 13.64	31.22	0.00	IV.	6	10.11	29 5.49	..	3.30	23 42.42	
20	9	22.9	..	..	..	..	..	..	31 4.07	31.26	0.00	IV.	8	9.44	38 50.58	..	4.09	30 32.81	
21	9	..	..	30.8	..	..	..	..	2 31 43.96	−31.26	0.00	IV.	1	6.24	− 3 13.63	..	−1.30	2 31 12.70	

ZONE 145. NOVEMBER 2. K. BELT, −22° 31'. D₀=−22° 6' 30".

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	..	..	..	..	..	14.4	22 16 33.56	−32.43	−0.01	VII.	3	9.12	−14 36.12	− 6.90	−2.31	22 16 1.12	−22 21 15.33
2	9	..	..	..	..	9.8	..	..	17 56.20	32.44	−0.01	VI.	3	9.34	14 47.39	6.83	2.32	17 23.75	21 26.54
3	9	28.2	..	..	..	..	..	..	20 9.11	32.46	0.00	IV.	7	4.29	31 13.04	6.70	3.44	19 36.65	37 53.18
4	8	25.3	39.4	..	..	..	..	..	21 6.48	32.47	+0.01	IV.	9	8.53	43 23.86	6.66	4.26	20 34.02	50 4.78
5	10	..	..	..	..	28.4	..	..	21 14.80	32.47	−0.01	IV.	3	10.57	15 29.39	6.65	2.37	20 42.32	22 8.41
6	10	22.4	..	..	..	..	..	..	22 24 3.33	−32.50	0.00	IV.	7	7.26	−32 42.29	− 6.52	−3.54	22 23 30.83	−22 39 22.35

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Nov. 2,	20	f 39.31	g 0.020	+ 0.209	+ 0.209	0.000

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM.	
					At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 145	Nov. 2,	9	5	30.026	76.5	51.

REMARKS.

ZONE 145. NOVEMBER 2. K. BELT, −22° 31′. D_0=−22° 6′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
7	10	. .	. .	56.8	. .	. .	. .	. .	22 24 10.38	−32.51	−0.01	IV.	8	7.45	−37 50.57	− 6.51	−3.88	22 23 37.86	−22 44 0.96
8	10	. .	. .	. .	. .	. .	50.4	. .	24 23.48	32.51	−0.01	IV.	3	10.46	15 23.85	6.50	2.36	23 50.96	22 2.71
9	9	. .	47.3	. .	. .	. .	. .	. .	26 14.57	32.53	+0.01	IV.	10	4.49	45 51.47	6.42	4.47	25 42.05	52 32.36
10	9	46.8	. .	. .	. .	. .	. .	. .	27 27.83	32.54	+0.01	IV.	10	1.13	44 32.80	6.36	4.35	26 55.30	51 13.51
11	10	55.3	. .	. .	. .	. .	. .	. .	28 36.11	32.55	0.00	IV.	5	0.59	20 26.05	6.31	2.68	28 3.56	27 5.04
12	10	. .	. .	39.2	. .	. .	. .	. .	28 52.46	32.56	−0.01	IV.	3	9.50	14 55.60	6.29	2.33	28 19.89	21 34.22
13	9	. .	. .	. .	. .	. .	38.2	. .	29 11.29	32.56	−0.01	VI.	2	13.33	11 48.79	6.28	2.12	28 38.72	18 27.19
14	8	. .	. .	. .	. .	. .	23.7	. .	29 56.75	32.57	0.00	VI.	6	7.29	27 43.65	6.24	3.20	29 23.18	34 23.09
15	9	. .	. .	. .	5.3	. .	. .	. .	31 5.15	32.58	0.00	IV.	4	8.46	19 22.34	6.20	2.60	30 32.57	26 1.14
16	9	50.0	. .	. .	. .	. .	. .	. .	34 30.87	32.62	0.00	IV.	6	5.2	26 29.68	6.06	3.10	33 58.25	33 8.84
17	7	44.8	58.4	. .	. .	. .	. .	. .	35 25.52	32.62	0.00	IV.	4	9.34	19 46.54	6.03	2.63	34 52.90	26 25.20
18	10	. .	56.8	. .	. .	. .	. .	. .	37 23.93	32.64	0.00	IV.	6	11.10	29 35.24	5.95	3.32	36 51.29	36 14.51
19	9	8.7	. .	36.0	. .	. .	. .	. .	39 49.56	32.67	0.00	IV.	7	5.24	31 40.77	5.86	3.47	39 16.89	38 20.10
20	8	. .	. .	. .	31.9	. .	. .	. .	40 31.75	32.68	0.00	IV.	4	6.58	18 27.87	5.83	2.54	39 59.07	25 6.24
21	9	. .	. .	. .	47.9	. .	. .	. .	42 47.75	32.70	0.00	IV.	3	11.30	15 46.03	5.76	2.38	42 15.05	22 24.17
22	7	9.9	23.5	. .	. .	. .	. .	. .	44 50.65	32.72	0.00	IV.	5	6.57	23 26.57	5.70	2.89	44 17.93	30 5.16
23	11	. .	58.8	. .	. .	. .	. .	. .	46 26.00	32.73	+0.01	IV.	8	7.3	37 29.39	5.65	3.88	45 53.28	44 8.92
24	9	. .	. .	. .	58.9	. .	. .	. .	46 58.75	32.74	−0.01	IV.	1	8.4	4 4.06	5.63	1.60	46 26.00	10 41.29
25	9	47.9	1.8	. .	. .	. .	. .	. .	50 28.99	32.78	+0.01	IV.	9	9.8	43 31.42	5.53	4.28	49 56.22	50 11.23
26	10	. .	. .	. .	. .	. .	31.3	. .	56 4.36	32.84	0.00	IV.	5	6.43	23 19.51	5.41	2.89	55 31.52	29 57.81
27	8	5.5	19.4	. .	. .	. .	. .	. .	58 46.54	32.87	+0.01	IV.	8	8.5	38 0.66	5.35	3.91	58 13.68	44 39.92
28	9	. .	. .	14.0	. .	. .	. .	. .	22 59 27.19	32.88	−0.01	IV.	2	8.4	9 3.06	5.33	1.93	22 58 54.30	15 40.32
29	10	9.1	. .	. .	. .	. .	. .	. .	23 0 49.89	32.88	0.00	IV.	4	6.16	18 6.70	5.31	2.51	23 0 17.01	24 44.52
30	9	. .	. .	17.3	. .	. .	. .	. .	3 30.61	32.92	0.00	IV.	4	6.29	18 13.25	5.27	2.55	2 57.69	24 51.07
31	9	. .	. .	3.7	. .	. .	. .	. .	4 17.12	32.92	0.00	IV.	6	4.33	26 15.06	5.26	3.09	3 44.20	32 53.41
32	9	. .	53.6	7.1	. .	. .	. .	. .	5 20.75	32.93	0.00	IV.	8	9.1	38 28.89	5.25	3.22	4 47.82	45 8.06
33	10	32.8	. .	. .	. .	. .	. .	. .	7 13.59	32.95	0.00	IV.	4	6.5	18 1.15	5.22	2.51	6 40.64	24 38.88
34	9	33.3	. .	. .	. .	. .	. .	. .	8 14.23	32.96	0.00	IV.	7	8.31	33 15.07	5.20	3.58	7 41.27	39 53.85
35	8	. .	. .	. .	15.1	. .	. .	. .	8 14.95	32.96	−0.01	IV.	1	3.44	1 52.95	5.20	1.44	7 41.98	8 29.59
36	9	55.5	. .	. .	. .	. .	. .	. .	15 36.27	33.04	0.00	IV.	3	9.3	14 31.90	5.15	2.28	15 3.23	21 9.33
37	8	. .	. .	. .	44.5	. .	. .	. .	15 44.35	33.04	−0.01	IV.	1	3.4	1 32.78	5.15	1.41	15 11.30	3 9.34
38	7	. .	. .	29.9	43.2	. .	. .	. .	16 43.20	33.05	0.00	IV.	6	9.58	28 58.93	5.15	3.28	16 10.15	35 37.36
39	9	. .	. .	. .	. .	30.5	. .	. .	17 17.02	33.05	+0.01	IV.	9	5.20	41 36.45	5.14	4.12	16 43.98	48 15.71
40	9	. .	. .	. .	11.9	. .	. .	. .	18 11.75	33.06	0.00	IV.	5	4.24	22 9.42	5.14	2.80	17 38.69	28 47.36
41	6	. .	47.0	. .	. .	. .	. .	. .	19 14.11	33.07	0.00	IV.	6	6.29	27 13.55	5.13	3.15	18 41.04	33 51.83
42	9	. .	. .	. .	42.8	. .	. .	. .	19 42.65	33.08	+0.01	IV.	10	6.25	47 10.13	5.13	4.52	19 9.58	53 49.78
43	9	40.1	53.4	. .	. .	. .	. .	. .	21 20.60	33.09	0.00	IV,	2	11.58	11 1.04	5.14	2.06	20 47.51	17 38.24
44	8	. .	. .	. .	. .	. .	. .	50.9	23 10.45	33.11	0.00	IV.	9	9.2	43 28.40	5.14	4.27	22 37.34	50 7.81
45	7	. .	. .	. .	36.9	. .	. .	. .	24 36.75	33.13	0.00	IV.	7	4.28	31 12.53	5.15	3.43	24 3.62	37 51.11
46	8	. .	. .	18.8	. .	. .	. .	. .	25 32.19	33.14	0.00	IV.	5	8.33	24 14.98	5.15	2.95	24 59.05	30 53.08
47	10	. .	. .	29.0	. .	. .	. .	. .	27 42.47	33.16	0.00	IV.	6	11.5	29 32.72	5.16	3.32	27 9.31	36 11.20
48	10	. .	. .	. .	. .	. .	11.2	. .	27 44.23	33.16	0.00	IV.	7	11.6	34 33.23	5.16	3.67	27 11.07	41 12.06
49	10	. .	. .	. .	. .	52.8	. .	. .	28 39.25	33.17	0.00	IV.	4	13.18	21 39.47	5.16	2.77	28 6.08	28 17.40
50	9	. .	. .	. .	. .	59.2	. .	. .	29 45.63	33.18	0.00	IV.	5	7.29	23 42.70	5.17	2.91	29 12.45	30 20.78
51	9	. .	44.2	58.1	. .	. .	. .	. .	31 11.38	33.19	0.00	IV	5	7.0	23 28.08	5.18	2.89	30 38.19	30 6.15
52	8	. .	32.3	. .	59.6	. .	. .	. .	31 59.48	33.20	0.00	IV.	8	9.20	38 38.47	5.20	3.93	31 26.28	45 17.60
53	9	27.8	. .	55.5	. .	. .	. .	. .	36 8.78	33.24	0.00	IV.	5	11.21	25 39.68	5.25	3.05	35 35.54	32 17.98
54	9	20.4	33.8	. .	. .	. .	. .	. .	40 1.12	33.29	0.00	IV.	6	11.26	29 43.31	5.30	3.33	39 27.84	36 21.94
55	7.6	32.8	46.7	. .	. .	. .	. .	. .	23 42 13.68	−33.30	0.00	IV.	4	10.27	−20 13.26	− 5.35	−2.66	23 41 40.38	−22 26 51.27

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1847.	h. m.	in.	°	°

REMARKS.

(145) 9. Micrometer reading assumed as $3^r.49$ instead of $4^r.49$

ZONE 145. NOVEMBER 2. K. BELT, −22° 31′. D_0 = −22° 6′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
56	9	. .	. .	31.8	45.0	. .	. .	. .	23 45 44.94	−33.34	0.00	IV.	3	4.20	−12 9.20	− 5.43	−2.13	23 45 11.60	−22 13 46.76
57	6	. .	. .	57.2	. .	. .	23.4	. .	48 56.72	33.37	0.00	IV.	9	8.4	42 59.16	5.51	4.25	48 23.35	49 38.92
58	9	. .	31.8	45.3	. .	. .	. .	. .	50 58.94	33.39	0.00	IV.	8	7.0	37 27.88	5.56	3.85	49 25.55	44 7.29
59	10	. .	. .	. .	. .	28.6	. .	. .	51 15.10	33.39	0.00	IV.	8	6.50	37 22.84	5.57	3.84	50 41.71	44 2.25
60	9	. .	. .	. .	. .	19.1	. .	. .	54 5.47	33.42	0.00	IV.	2	5.30	7 45.40	5.66	1.82	53 32.05	14 22.88
61	9	. .	9.7	. .	. .	. .	. .	. .	55 36.89	33.43	0.00	IV.	8	5.56	36 55.61	5.70	3.82	55 3.46	43 35.13
62	9	. .	. .	. .	14.0	. .	. .	. .	58 3.85	33.45	0.00	IV.	1	4.39	2 20.69	5.79	1.45	57 30.40	8 57.93
63	9	. .	58.0	. .	. .	. .	. .	. .	59 24.99	33.46	0.00	IV.	3	7.6	13 32.91	5.82	2.23	58 51.53	20 10.96
64	9	. .	. .	41.7	. .	. .	. .	. .	23 59 55.22	33.47	0.00	IV.	7	8.31	33 15.07	5.84	3.57	23 59 21.75	39 54.48
65	9	. .	45.9	59.1	. .	. .	. .	. .	0 1 12.84	33.48	0.00	IV.	7	9.37	33 48.35	5.89	3.60	0 0 39.36	40 27.84
66	9	. .	. .	. .	. .	. .	32.2	. .	1 5.30	33.48	0.00	IV.	2	6.10	8 5.57	5.88	1.86	0 31.82	14 43.31
67	9	. .	. .	. .	30.5	. .	. .	. .	2 30.35	33.50	0.00	IV.	2	2.46	6 22.71	5.94	1.75	1 56.85	13 0.40
68	9	. .	. .	28.9	42.3	. .	. .	. .	3 42.33	35.51	0.00	IV.	8	10.45	39 21.34	5.99	3.98	3 8.82	46 1.31
69	9	. .	. .	10.2	. .	. .	. .	. .	5 23.91	33.52	0.00	IV.	10	6.38	47 16.69	6.06	4.55	4 50.39	53 57.30
70	9	. .	. .	. .	16.8	. .	. .	. .	7 16.65	33.54	0.00	IV.	4	6.40	17 48.55	6.13	2.53	6 43.11	24 27.21
71	10.9	54.0	. .	. .	. .	. .	. .	. .	9 34.78	33.57	0.00	IV.	4	2.37	16 16.27	6.22	2.40	9 1.21	22 54.89
72	9	. .	. .	. .	. .	48.2	. .	. .	9 34.62	33.57	0.00	IV.	4	8.46	19 22.34	6.22	2.60	9 1.05	26 1.16
73	9	. .	. .	46.9	. .	. .	. .	. .	11 0.42	33.58	0.00	IV.	7	8.35	33 17.09	6.29	3.58	10 26.84	39 56.96
74	8.9	52.0	. .	. .	. .	. .	. .	. .	12 32.92	33.60	0.00	IV.	7	5.34	31 45.82	6.37	3.47	11 59.32	38 25.66
75	8	. .	16.0	29.9	. .	. .	. .	. .	18 43.15	33.66	0.00	IV.	5	2.22	21 7.90	6.68	2.73	18 9.49	27 47.31
76	8	. .	. .	. .	17.1	30.3	. .	. .	0 19 16.84	−33.66	0.00	IV.	5	7.15	−23 35.64	− 6.70	−2.90	0 18 43.18	−22 30 15.24

ZONE 146. NOVEMBER 2. K. BELT, −22° 31′. D_0 = −22° 7′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	13.1	. .	. .	3 8 59.60	−34.86	−0.01	IV.	8	4.16	−36 5.19	−25.82	−3.80	3 8 24.73	−22 43 34.81
2	9	. .	. .	. .	. .	. .	8.7	. .	8 41.80	34.86	+0.01	IV.	3	2.29	11 13.23	25.83	2.00	8 6.95	18 41.06
3	9	3.2	17.0	. .	. .	. .	. .	. .	10 44.12	34.87	0.00	IV.	7	2.30	30 13.04	25.75	3.36	10 9.25	37 42.15
4	10	. .	45.0	. .	. .	. .	. .	. .	12 12.06	34.88	0.00	IV.	5	3.28	21 41.17	25.70	2.77	11 37.18	29 9.64
5	5.4	45.1	59.0	12.7	26.2	. .	. .	. .	13 25.94	34.88	+0.01	IV.	3	2.7	11 2.14	25.65	2.00	12 51.07	18 29.79
6	9	. .	. .	44.9	58.2	. .	. .	. .	15 58.22	34.89	0.00	IV.	7	4.8	31 2.45	25.55	3.42	15 23.33	38 31.42
7	9	. .	52.9	. .	20.0	. .	. .	. .	18 19.83	34.90	+0.01	IV.	1	8.55	4 29.77	25.45	1.55	17 44.94	11 56.77
8	9	13.2	27.1	. .	. .	. .	. .	. .	19 54.15	34.91	0.00	IV.	6	8.59	28 29.19	25.40	3.25	19 19.24	35 57.84
9	10	. .	. .	. .	5.9	. .	. .	. .	20 5.75	34.91	−0.01	IV.	7	10.13	34 6.50	25.40	3.63	19 30.83	41 35.53
10	10	. .	. .	24.5	. .	. .	. .	. .	28 37.99	34.94	0.00	IV.	7	4.59	31 28.17	25.12	3.45	28 3.05	38 56.74
11	10	. .	. .	54.4	. .	. .	. .	. .	31 7.59	34.94	+0.01	IV.	2	9.31	9 46.92	25.05	1.90	30 32.66	17 13.87
12	9	. .	. .	41.8	. .	. .	. .	. .	31 55.24	34.95	0.00	IV.	6	7.52	27 55.40	25.03	3.21	31 20.29	35 23.64
13	9	. .	. .	. .	17.5	. .	. .	. .	32 17.35	34.95	−0.01	IV.	8	8.8	38 2.17	25.03	3.91	31 42.39	45 31.11
14	9	. .	. .	3.8	17.4	. .	. .	. .	33 17.34	34.95	−0.01	IV.	9	4.38	41 15.28	25.00	4.17	32 42.38	48 44.45
15	9	. .	. .	19.4	2.9	. .	. .	. .	34 2.83	34.96	0.00	IV.	7	6.1	31 59.43	24.96	3.49	33 27.87	39 27.88
16	9	58.3	12.1	25.9	. .	. .	. .	. .	36 39.16	34.97	0.00	IV.	4	10.19	20 9.23	24.91	2.66	36 4.19	27 36.80
17	9	. .	. .	6.1	. .	. .	. .	. .	37 19.69	34.97	−0.01	IV.	8	8.12	38 4.19	24.88	3.93	36 44.71	45 33.00
18	9	. .	. .	42.9	. .	. .	. .	. .	37 56.19	34.97	0.00	IV.	4	4.45	17 20.81	24.87	2.45	37 21.22	24 48.13
19	10	. .	. .	. .	. .	21.7	. .	. .	38 8.14	34.97	0.00	IV.	5	6.0	22 57.83	24.86	2.86	37 33.17	30 25.55
20	9	. .	3.8	. .	. .	. .	. .	. .	39 30.92	34.98	0.00	IV.	6	7.12	27 35.23	24.83	3.18	38 55.94	35 3.24
21	9	. .	. .	. .	. .	43.2	. .	. .	39 29.72	34.98	−0.01	IV.	9	4.58	41 25.36	24.83	4.18	38 54.73	48 54.37
22	9	. .	57.0	. .	. .	. .	. .	. .	42 24.15	34.98	0.00	IV.	7	5.54	31 55.90	24.78	3.49	41 49.17	39 21.17
23	9	. .	. .	. .	. .	. .	51.8	. .	42 24.82	34.98	−0.01	IV.	8	3.6	35 29.89	24.78	3.75	41 49.81	42 58.42
24	10	. .	. .	48.9	. .	. .	. .	. .	3 44 2.19	−34.99	+0.01	IV.	4	4.24	−17 10.22	−24.74	−2.44	3 43 27.21	−22 24 37.40

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°

REMARKS.

(145) 57. The transit observations assumed to have been on T.'s IV and VI.
(145) 58. Minutes assumed as 49 instead of 48.
(145) 62. Transit over T. IV assumed as $4^{s}.0$ instead of $14^{s}.0$.
(145) 70. Micrometer reading assumed as $5^{r}.40$ instead of $6.^{r}40$.
(146) 1. Minutes of transit assumed as 7 instead of 8.
(146) 15. Transit over T. III assumed as $59^{s}.4$ instead of $19^{s}.4$.

ZONE 146. NOVEMBER 2. K. BELT, −22° 31′. D$_0$=−22° 7′ 0″.—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	9	. .	. .	37.7	. .	. .	. .	. .	3 45 51.41	−34.99	−0.01	IV.	10	5.35	−46 44.92	−24.72	−4.59	3 45 16.41	−22 54 14.23
26	9	. .	. .	40.3	54.6	. .	. .	. .	46 54.16	34.99	0.01	IV.	8	4.13	36 3.67	24.69	3.79	46 19.16	43 32.15
27	9	32.3	46.2	. .	. .	. .	. .	. .	48 13.37	35.00	−0.01	IV.	9	6.13	42 3.18	24.66	4.24	47 38.36	49 32.08
28	10	. .	. .	. .	30.3	. .	. .	. .	48 20.15	35.00	+0.01	IV.	2	8.44	9 23.23	24.65	1.88	47 45.16	16 49.76
29	9	. .	. .	. .	34.7	. .	. .	. .	49 47.97	35.00	+0.01	IV.	2	12.46	11 25.25	24.64	2.02	49 12.98	18 51.91
30	7	37.1	50.9	. .	. .	. .	. .	. .	55 18.06	35.01	−0.01	IV.	7	10.56	34 28.19	24.56	3.67	54 43.04	41 56.42
31	9.10	. .	53.1	. .	. .	. .	. .	. .	3 59 20.17	35.02	0.00	IV.	5	6.5	23 0.35	24.50	2.86	58 45.15	30 27.71
32	9	. .	. .	55.7	. .	. .	. .	. .	4 0 9.09	35.02	0.00	IV.	5	8.5	24 0.86	24.49	2.93	3 59 34.07	31 28.28
33	9	. .	36.9	50.8	4.0	. .	. .	. .	2 3.94	35.02	+0.01	IV.	3	11.15	16 38.96	24.48	2.42	4 1 28.93	24 5.86
34	9	. .	. .	46.8	. .	. .	. .	. .	2 59.95	35.03	+0.01	IV.	1	11.29	6 47.92	24.47	1.74	2 24.93	14 14.13
35	6.5	18.9	32.9	. .	. .	. .	. .	. .	9 59.85	35.04	0.00	IV.	5	6.27	23 11.44	24.41	2.87	9 24.81	30 38.72
36	9	. .	. .	. .	. .	. .	. .	30.8	18 49.83	35.06	+0.01	IV.	1	9.39	5 52.47	24.37	1.68	18 14.78	13 18.52
37	9	. .	2.8	. .	. .	. .	. .	. .	4 23 16.44	−35.06	−0.01	IV.	9	6.22	−43 8.23	−24.37	−4.27	4 23	−22 50 36.87

ZONE 147. NOVEMBER 5. B. BELT, −21° 53′. D$_0$=−21° 29′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	37.	51.	. .	. .	. .	. .	. .	22 28 17.71	−34.06	+0.01	III.	3	5.30	−12 44.46	−30.45	−2.22	22 27 43.66	−21 42 17.13
2	8	. .	. .	. .	. .	24.	37.1	51.	29 10.40	34.07	0.00	VII.	5	4.385	22 16.42	30.46	2.84	28 36.33	51 49.72
3	8	. .	. .	. .	. .	. .	30.	44.	35 3.27	34.13	+0.01	VII.	3	8.10	14 4.87	30.59	2.29	34 29.15	43 37.75
4	8	. .	51.	4.5	18.	. .	. .	. .	39 17.74	34.17	+0.01	IV.	1	9.22	5 13.64	30.68	1.72	38 43.58	34 46.14
5	8.9	. .	. .	. .	. .	. .	20.5	34.3	40 53.70	34.19	0.00	VII.	4	11.40	20 49.76	30.73	2.74	40 19.51	50 23.23
6	9	. .	. .	54.	7.	. .	. .	. .	44 7.02	34.22	0.00	IV.	3	8.57	14 28.88	30.82	2.32	43 32.80	44 2.02
7	9	. .	. .	. .	. .	. .	24.	38.	44 57.35	34.22	0.00	VII.	6	10.9	29 4.18	30.85	3.25	43 23.13	58 38.28
8	9	. .	59.	12.5	26.	. .	. .	. .	51 25.79	34.30	+0.01	IV.	3	3.51	11 54.57	31.06	2.16	50 51.50	40 27.79
9	9	. .	. .	. .	. .	. .	32.	46.	53 5.24	34.31	0.01	VII.	2	4.46	7 22.91	31.13	1.88	52 30.94	36 55.92
10	6	. .	. .	5.	18.	31.3	44.4	58.3	55 17.73	34.34	+0.01	VII.	2	11.26	10 44.60	31.22	2.08	54 43.40	21 40 17.90
11	9	. .	. .	14.	28.	. .	. .	. .	22 59 27.75	34.38	−0.01	V.	10	4.21	46 7.56	31.38	4.40	22 58 53.36	22 15 43.34
12	4	20.	34.	48.	1.3	14.	. .	. .	23 2 0.96	34.41	0.00	VII.	6	10.58	29 28.88	31.49	3.28	23 1 26.55	21 59 3.65
13	9	. .	. .	. .	. .	40.	53.5	7.	3 26.53	34.42	0.00	VII.	4	10.23	20 10.93	31.56	2.69	2 52.11	21 49 45.18
14	9	. .	49.	2.5	16.	29.	. .	. .	8 15.88	34.47	−0.01	VI.	8	9.58	38 57.49	31.78	3.92	7 41.40	22 8 33.19
15	9	. .	. .	. .	. .	. .	40.	54.	9 13.36	34.48	0.00	VII.	6	12.53	30 26.86	31.83	3.35	8 38.88	0 2.04
16	8	. .	. .	. .	. .	. .	. .	7.	9 26.57	34.48	0.00	VII.	6	14.10	31 35.90	31.84	3.43	8 52.09	1 12.17
17	9	. .	. .	. .	. .	40.	. .	7.	17 26.68	34.56	−0.01	VII.	10	4.48	46 20.91	32.28	4.41	16 52.11	15 57.60
18	8	. .	. .	. .	24.5	. .	51.	. .	24 24.24	34.63	−0.01	VII.	9	5.32	42 12.43	32.74	4.13	23 49.60	22 11 49.30
19	6	. .	. .	. .	. .	13.5	27.	40.5	23 26 0.00	−34.65	+0.01	VII.	3	10.4	−15 2.36	−32.84	−2.36	23 25 25.36	−21 44 37.56

ZONE 148. DECEMBER 4.* K. BELT, −25° 39′. D$_0$=−24° 0′ 6″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	4.3	18.2	. .	. .	. .	. .	22 52 31.90	+ 2.97	0.00	IV.	4	4.26	−17 11.23	. .	−2.38	23 52 34.87	
2	10	. .	. .	. .	18.3	. .	. .	. .	53 18.15	2.96	0.00	IV.	4	2.5	16 0.13	. .	2.29	53 21.11	
3	9	. .	. .	. .	. .	. .	0.3	. .	22 59 46.44	2.87	0.00	IV.	8	10.45	39 21.34	. .	4.15	23 59 49.31	
4	9	. .	55.2	9.2	. .	. .	. .	. .	23 3 22.95	2.84	0.00	IV.	5	11.35	25 46.75	. .	3.06	0 3 25.79	
5	8	. .	. .	. .	55.0	8.8	. .	. .	3 54.88	2.83	0.00	IV.	6	7.49	27 53.89	. .	3.23	3 57.71	
6	8.9	56.0	9.7	. .	. .	. .	. .	. .	5 37.76	2.81	0.00	IV.	7	10.50	33 54.90	. .	3.77	5 40 57	
7	6.7	. .	. .	. .	4.2	17.8	. .	. .	6 3.93	2.81	0.00	IV.	1	5.17	2 39.84	. .	1.22	6 6.74	
8	6	30.1	44.0	58.0	. .	. .	. .	. .	13 11.86	2.72	0.00	IV.	6	7.21	27 39.76	. .	3.21	13 14.58	
9	10	. .	46.9	. .	. .	. .	. .	. .	23 14 14.55	+ 2.71	0.00	IV.	3	6.1	−13 0.13	. .	−2.05	0 14 17.26	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Nov. 5,	21	f 40.52	g 0.025	− 0.134	+ 0.198	0.000
Dec. 4,	23	f 3.88	g 0.020			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1847. h. m.	in.	°	°
Zone 148	Dec. 4, 9 5	30.114	71.	33.5

REMARKS.

(146) 28. Transit over T. IV assumed as $20^{s}.3$ instead of $30^{s}.3$.
(146) 33. Micrometer reading assumed as $13^{r}.15$ instead of $11^{r}.15$.
(146) 34. Micrometer reading assumed as $13^{r}.29$ instead of $11^{r}.29$.
(146) 36. Micrometer reading assumed as $11^{r}.39$ instead of $9^{r}.39$.
(146) 37. Micrometer reading assumed as $8^{r}.22$ instead of $6^{r}.22$.
(147) 4. Micrometer reading assumed as $10^{r}.22$ instead of $9^{r}.22$.
(147) 16. Micrometer reading assumed as $15^{r}.10$ instead of $14^{s}.10$.
(147) 18. Micrometer reading assumed as $6^{r}.32$ instead of $5^{r}.32$
(148) 1. Hour assumed as 23 instead of 22.
(148) 3. Transit over T. V assumed to have been recorded as over T. VI.
(148) 4. Hour assumed as 0 instead of 23.
(148) 6. Micrometer reading assumed as $9^{r}.50$ instead of $10^{r}.50$.

*The hour of this Zone was not recorded, and the declination was erroneously given. There can, however, be little doubt that the Zone has now been identified.

ZONE 148. DECEMBER 4. K. BELT, −25° 39′. $D_{\circ}=-24°\ 0'\ 6''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	6	. .	. .	29.6	. .	57.2	. .	. .	23 14 43.47	+ 2.70	0.00	IV.	9	2.50	−40 20.82	. .	−4.23	0 14 46.17	
11	7.8	55.9	9.9	24.0	. .	. .	. .	. .	16 37.60	2.68	0.00	IV.	3	7.55	13 57.61	. .	2.13	16 40.28	
12	9	. .	. .	59.8	. .	27.2	. .	. .	17 13.34	2.67	0.00	IV.	4	3.49	16 52.57	. .	2.36	17 16.01	
13	10	42.0	. .	10.2	. .	. .	. .	. .	23 19 23.68	+ 2.65	0.00	IV.	2	4.41	− 7 20.69	. .	−1.59	0 19 26.33	

ZONE 149. DECEMBER 6. B. BELT, −25° 1′. $D_{\circ}=-24°\ 36''\ 30'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	34.3	48.3	. .	. .	. .	. .	. .	0 30 16.21	+ 3.15	0.00	II.	9	7.42	−42 47.90	− 6.77	−4.53	0 29 19.36	−25 19 29.2
2	10	. .	. .	. .	57.	. .	23.5	. .	31 56.41	3.13	0.00	VII.	9	10.42	44 18.47	6.81	4.66	31 59.54	20 59.9
3	10	. .	. .	. .	31.	45.	59.	. .	38 31.19	3.05	0.00	V.	7	3.50	30 53.33	6.94	3.50	38 34.24	7 33.8
4	6	. .	. .	. .	. .	. .	0.0	14.2	39 32.62	3.04	0.00	VII.	6	2.54	25 24.78	6.96	3.03	39 35.66	2 4.8
5	8	. .	. .	. .	19.	. .	. .	. .	40 18.85	3.03	0.00	V.	5	2.4	25 58.79	6.98	3.08	40 21.88	25 2 38.8
6	5	. .	. .	. .	. .	1.	14.5	28.5	41 47.05	3.01	0.00	VII.	5	1.13	20 32.74	7.02	2.62	41 50.06	24 57 12.4
7	5	. .	48.	2.	. .	. .	. .	. .	45 15.60	2.97	0.00	IV.	3	5.35	12 47.02	7.13	1.97	45 18.57	49 26.1
8	9	. .	. .	56.	. .	23.5	. .	. .	46 9.56	2.96	0.00	VI.	3	7.20	13 39.80	7.15	2.06	46 12.52	50 19.0
9	10	. .	. .	. .	. .	33.	47.	. .	47 19.35	2.95	0.00	VII.	2	4.58	7 28.90	7.19	1.52	47 22.30	44 7.6
10	9	. .	. .	15.	29.	. .	. .	. .	52 28.58	2.89	0.00	VI.	1	1.58	0 59.33	7.37	1.00	52 31.47	24 37 37.7
11	9	. .	. .	. .	. .	. .	. .	5.	53 23.62	2.88	0.00	VI.	7	8.26	28 12.39	7.41	3.25	53 26.50	25 4 53.0
12	9	. .	. .	45.5	59.	. .	. .	. .	56 59.04	2.84	0.00	IV.	6	8.10	28 4.48	7.55	3.24	57 1.88	25 4 45.3
13	.	. .	. .	. .	53.0	7.	. .	. .	0 59 52.98	2.80	0.00	VI.	2	12.26	11 15.00	7.67	1.84	0 59 55.78	24 47 54.5
14	8	. .	. .	. .	. .	. .	. .	50.	1 1 8.51	2.79	0.00	VII.	5	11.55	25 56.47	7.72	3.08	1 1 11.30	25 2 37.3
15	8	. .	. .	. .	4.	18.	. .	. .	7 4.03	2.72	0.00	VI.	6	10.18	29 9.02	8.02	3.34	7 6.75	25 5 50.4
16	8	. .	5.	19.	33.	. .	. .	. .	15 32.65	2.63	0.00	V.	4	6.41	18 19.26	8.48	2.43	14 35.28	24 55 0.2
17	6	. .	. .	10.	23.5	. .	. .	. .	16 23.56	2.62	0.00	V.	7	5.15	31 36.19	8.53	3.55	16 26.18	25 8 18.3
18	8	. .	. .	. .	28.	. .	55.	. .	20 27.72	2.57	0.00	VII.	2	12.2	11 2.70	8.77	1.80	20 30.29	24 47 43.3
19	8	. .	. .	. .	. .	50.	13.	17.	21 45.55	2.56	0.00	VII.	6	12.31	30 15.72	8.85	3.44	21 48.11	25 6 58.0
20	8	. .	36.	50.	. .	17.5	. .	. .	24 3.81	2.54	0.00	VI.	9	4.2	40 56.97	9.00	4.39	24 6.35	25 17 40.4
21	7	23.	37.	51.	5.	. .	. .	. .	26 4.65	2.51	0.00	V.	4	9.50	19 54.56	9.14	2.57	26 7.16	24 56 36.3
22	9	. .	. .	14.	28.	. .	. .	. .	28 27.87	2.49	0.00	V.	8	11.19	39 38.44	9.29	4.24	28 30.36	25 16 22.0
23	9	. .	. .	. .	43.	57.	. .	. .	30 42.97	2.46	0.00	V.	1	11.55	10 59.49	9.45	1.82	30 45.43	24 47 41.76
24	9	. .	. .	16.	29.5	43.	. .	. .	31 29.36	2.45	0.00	VI.	4	7.27	18 42.33	9.51	2.48	36 31.81	55 24.3
25	8	55.	9.	23.	. .	. .	. .	. .	39 36.47	2.36	0.00	IV.	2	9.4	9 33.31	10.10	1.68	39 38.83	24 46 15.1
26	9	. .	43.	56.5	12.	. .	. .	. .	43 10.83	2.33	0.00	V.	8	12.50	40 24.32	10.40	4.34	43 13.16	25 17 9.1
27	8	. .	. .	. .	. .	. .	. .	51.	44 9.68	2.32	0.00	VII.	8	9.3	33 30.86	10.48	3.76	44 12.00	25 10 15.1
28	8	. .	53.	7.	. .	. .	. .	. .	46 20.58	2.30	0.00	IV.	4	10.27	20 13.26	10.66	2.60	46 22.88	24 56 56.5
29	8	. .	49.	3.	. .	. .	. .	. .	49 16.53	2.27	0.00	IV.	3	10.51	15 26.36	10.90	2.20	49 18.80	52 9.5
30	7	. .	. .	. .	. .	. .	. .	0.0	49 18.45	2.27	0.00	VII.	4	12.52	21 26.01	10.90	2.70	49 20.72	24 58 9.6
31	8	3.	17.	31.	. .	. .	. .	. .	53 44.73	2.21	0.00	VII.	7	6.06	32 1.60	11.30	3.59	53 46.94	25 8 46.5
32	8	. .	45.	59.	12.5	. .	. .	. .	55 12.42	2.20	0.00	V.	2	8.32	9 17.14	11.44	2.08	55 14.62	24 46 0.7
33	8.9	. .	13.	27.	41.	. .	. .	. .	1 58 40.74	2.16	0.00	V.	6	9.39	28 49.32	11.76	3.33	1 58 42.90	25 5 34.4
34	9	. .	. .	5.	19.	. .	. .	. .	2 1 18.92	2.14	−0.01	V.	10	7.36	47 45.90	12.01	5.00	2 1 21.05	24 32.9
35	6.7	. .	. .	. .	. .	54.5	8.	. .	2 40.61	2.12	0.00	VII.	6	5.12	26 34.36	12.15	3.12	2 42.73	3 19.7
36	9	13.	27.2	41.3	. .	. .	. .	. .	4 54.83	2.10	0.00	IV.	6	4.46	26 21.62	12.37	3.10	4 56.93	3 7.1
37	8	. .	45.	59.	. .	. .	. .	. .	10 12.66	2.05	0.00	IV.	6	4.2	25 59.43	12.91	3.08	10 14.71	2 45.4
38	9	27.	41.2	55.	. .	. .	. .	. .	13 8.81	2.02	0.00	IV.	7	8.57	33 28.18	13.23	3.73	13 10.83	25 10 15.1
39	7	. .	. .	. .	. .	57.	10.	. .	18 42.84	1.97	+0.01	VII.	1	4.36	2 18.82	13.85	1.08	18 44.82	24 39 3.7
40	9	. .	. .	8.2	22.	. .	. .	. .	32 21.84	1.84	0.00	V.	5	4.52	22 23.50	15.46	2.77	32 23.68	59 11.7
41	7	. .	. .	. .	. .	0.3	13.5	28.	2 33 46.25	+ 1.83	+0.01	VII.	1	10.6	−10 4.22	−15.65	−1.70	2 33 48.09	−24 46 51.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.
Dec. 6,	23	*f* 3.43	*g* 0.000	+ 0.468	− 0.549	0.000

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM. At.	Ex.
	1847.	h.	m.	in.	°	°
Zone 149	Dec. 6,	6	5	30.294	77.	34.

REMARKS.

(149) 1. Minutes assumed as 29 instead of 30.
(149) 11. Hor. thread assumed as 6 instead of 7.
(149) 16. Minutes assumed as 14 instead of 15, and micrometer reading as 6r.41 instead of 5r.41.
(149) 23. Hor. thread assumed as 2 instead of 1.
(149) 24. Minutes assumed as 36 instead of 31, to agree with Arg. Z. 327, 27.
(149) 26. Transit observations discordant.
(149) 27. Hor. thread assumed as 7 instead of 8.
(149) 41. Micrometer thread assumed as 2 instead of 1.

ZONE 149. DECEMBER 6. B. BELT, −25° 1′. D_0=−24° 36′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
42	9	5.	19.	33.	. .	. .	. .	. .	2 37 46.64	+ 1.79	0.00	IV.	5	9.22	−24 39.68	−16.15	−2.97	2 37 48.43	−25 1 28.8
43	9	. .	. .	. .	40.	54.	. .	. .	38 40.05	1.78	−0.01	VI.	8	12.56	40 27.23	16.26	4.35	38 41.82	17 17.8
44	9	. .	47.	1.	15.	. .	. .	. .	42 14.81	1.75	−0.01	V.	8	6.43	37 19.27	16.73	4.08	42 16.55	14 10.1
45	7	. .	. .	. .	. .	. .	38.	52.	43 10.56	1.74	0.00	VII.	7	9.48	33 53.53	16.85	3.75	43 12.30	25 10 44.1
46	9	2.	16.	29.5	. .	. .	. .	. .	49 43.40	1.68	0.00	IV.	4	5.42	17 49.55	17.73	2.39	49 45.08	24 54 39.7
47	9	. .	. .	. .	. .	. .	1.	15.	50 33.58	1.68	−0.01	VII.	8	5.50	36 52.22	17.84	4.02	50 35.25	25 13 44.1
48	9	. .	. .	. .	5.2	19.	32.	47.	2 59 5.02	1.61	+0.01	VII.	2	11.21	10 42.02	19.07	1.75	2 59 6.64	24 47 32.8
49	8	. .	9.2	23.3	37.	. .	. .	. .	3 2 36.73	1.58	+0.01	V.	1	11.48	5 56.96	19.60	1.34	3 2 38.32	24 42 47.9
50	9	. .	. .	. .	. .	47.	0.0	14.5	4 33.01	1.56	−0.02	VII.	10	7.24	47 39.52	19.89	5.01	4 34.55	25 24 34.4
51	7	. .	. .	38.	52.	. .	. .	. .	11 51.60	1.50	+0.02	V.	1	4.11	2 6.52	21.01	1.03	11 53.12	24 38 58.6
52	6	. .	. .	. .	. .	15.	28.	42.	13 0.64	1.50	0.02	VII.	1	6.34	3 18.32	21.20	1.12	13 2.16	40 10.6
53	7	2.	16.2	30.2	44.	. .	. .	. .	17 43.69	1.46	+0.01	IV.	3	6.26	13 12.74	21.95	1.99	17 45.16	24 50 6.7
54	8	. .	. .	. .	. .	. .	. .	14.	22 32.81	1.42	−0.02	VII.	10	8.12	48 3.73	22.74	5.05	22 34.21	25 25 1.5
55	7	16.	30.	44.	58.	. .	. .	. .	25 57.75	1.40	0.00	V.	6	13.21	30 41.24	23.31	3.48	25 59.15	25 7 38.0
56	6	53.3	7.	21.2	35.	. .	. .	. .	28 34.71	1.38	+0.01	V.	3	3.30	11 43.94	23.75	2.09	28 36.10	24 48 39.8
57	9	. .	. .	. .	. .	. .	. .	12.	29 30.49	1.37	0.00	VII.	5	8.2	23 58.99	23.91	2.92	29 31.86	25 0 55.8
58	8	. .	24.	38.	52.	. .	. .	. .	33 51.70	1.34	0.00	V.	5	7.15	23 35.60	24.66	2.89	33 53.04	0 33.1
59	7	. .	3.5	17.5	32.	. .	. .	. .	35 31.43	1.33	0.00	V.	7	4.14	31 5.44	24.95	3.52	35 32.76	25 8 3.9
60	9	. .	. .	. .	. .	. .	45.	59.	36 17.49	1.33	+0.01	VII.	4	7.52	18 54.74	25.10	2.46	36 18.83	24 55 52.3
61	8	5.	19.2	33.1	. .	. .	. .	. .	39 46.63	1.30	+0.01	IV.	3	9.28	14 44.50	25.70	2.10	39 47.94	24 51 42.35
62	9	. .	13.2	. .	41.	. .	. .	. .	42 40.87	1.28	0.00	V.	7	4.58	31 27.62	26.22	3.55	42 42.15	25 8 27.4
63	9	. .	. .	. .	. .	. .	. .	20.	43 38.67	1.28	−0.01	VII.	8	7.10	37 32.56	26.39	4.08	43 40.94	14 33.0
64	5	. .	51.	5.	19.	32.5	46.	. .	47 18.71	1.26	0.00	VII.	6	5.12	26 34.36	27.06	3.12	47 19.97	25 3 34.5
65	9	. .	. .	. .	. .	. .	12.	26.	48 44.61	1.25	−0.01	VII.	9	7.5	42 29.04	27.32	4.58	48 45.85	19 30.9
66	7	. .	22.	35.5	49.5	3.	. .	. .	50 49.31	1.24	0.00	VI.	6	6.08	27 2.80	27.70	3.16	50 50.55	4 3.7
67	9	. .	. .	. .	22.	36.	. .	. .	53 22.02	1.22	0.00	VI.	5	6.57	23 26.41	28.18	2.88	53 23.24	0 27.5
68	9	37.5	. .	5.1	19.	. .	. .	. .	3 57 19.04	+ 1.20	−0.01	V.	8	12.48	−40 23.31	−28.91	−4.39	3 57 20.23	−25 17 26.6

ZONE 150. DECEMBER 6. B. BELT, −25° 1′. D_0=−24° 37′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	41.	55.	9.2	22.	. .	. .	. .	7 8 22.49	+ 0.99	0.00	IV.	5	10.35	−25 16.50	−25.45	−3.02	7 8 23.48	−25 2 44.97
2	8	56.	9.5	24.	37.4	. .	. .	. .	10 37.34	0.99	+0.01	IV.	3	12.19	16 10.73	26.83	2.18	10 38.34	24 53 39.74
3	5	. .	1.	15.	. .	. .	. .	. .	12 28.39	1.00	0.02	IV.	1	7.2	3 32.79	28.03	1.06	12 29.41	41 1.88
4	6	. .	. .	. .	. .	12.5	26.	40.5	12 58.64	1.00	0.02	VII.	1	7.2	3 32.43	28.35	1.06	12 59.66	41 1.84
5	10	. .	. .	18.	32.	45.5	. .	. .	16 31.67	1.02	+0.01	VI.	3	11.25	15 43.34	30.65	2.15	16 32.70	24 53 16.14
6	10	. .	. .	. .	. .	18.	32.	46.	18 4.47	1.02	−0.01	VII.	8	8.31	38 13.41	31.66	4.19	18 5.48	25 15 49.26
7	6	. .	. .	. .	. .	. .	38.5	53.	19 11.23	1.03	+0.01	VII.	4	5.45	17 50.70	32.39	2.31	19 12.27	24 55 25.40
8	8	. .	49.	3.	16.3	. .	. .	. .	22 16.34	1.04	0.02	V.	2	4.34	7 17.13	34.38	1.37	22 17.40	44 52.88
9	8	. .	. .	. .	. .	23.	36.5	. .	22 9.10	1.04	0.02	VII.	3	3.52	11 54.72	34.30	1.75	22 10.16	49 30.77
10	7	. .	. .	. .	47.	1.	14.5	. .	23 47.02	1.05	+0.01	VII.	3	5.21	12 39.59	35.36	1.84	23 48.08	24 50 16.79
11	8	. .	16.5	. .	44.	. .	. .	. .	25 44.15	1.06	0.00	V.	6	8.12	28 5.45	36.62	3.25	25 45.21	25 5 45.32
12	9	. .	31.	. .	. .	. .	. .	. .	29 58.58	1.08	0.00	III.	4	12.0	21 0.11	39.38	2.59	29 59.66	24 58 42.08
13	8	. .	. .	. .	. .	29.	42.5	. .	29 15.11	1.08	0.00	VII.	5	12.48	26 23.19	38.91	3.11	29 16.19	25 4 5.21
14	7	. .	. .	. .	. .	. .	44.	58.	30 16.50	1.08	0.00	VII.	5	5.2	22 28.22	39.56	2.75	30 17.58	0 10.53
15	6	. .	. .	. .	3.	16.5	. .	. .	32 2.76	1.09	0.00	V.	5	8.12	24 4.34	40.70	2.92	32 3.65	1 47.96
16	6	. .	. .	. .	. .	11.	24.3	. .	32 57.01	1.09	0.00	VII.	5	9.26	28 41.45	41.29	3.22	32 58.70	6 25.96
17	9	. .	. .	. .	. .	. .	20.	34.	7 34 52.58	+ 1.10	−0.01	VII.	8	9.57	−38 56.77	−42.53	−4.26	7 34 53.67	−25 16 43.56

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1847.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1847.	h. m.	in.	°	°

REMARKS.

(149) 64. Observed transit over T. IV assumed to have been at 19^s instead of 17^s.
(150) 16. Hor. thread assumed as 6 instead of 5.

ZONE 151. DECEMBER 15. B. BELT, −24° 23′. D_0=−23° 58′ 40″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	57.	11.	. .	. .	. .	. .	1 52 24.69	− 3.51	0.00	IV.	8	9.12	−43 33.44	−15.43	−4.50	1 52 21.18	−24 42 33.37
2	9	. .	. .	. .	. .	7.5	21.	. .	54 53.72	3.54	0.00	IX.	8	6.28	37 10.74	15.66	3.97	54 50.18	36 10.37
3	6	. .	. .	. .	. .	. .	27.	40.5	55 59.50	3.55	0.00	VII.	8	7.10	37 32.57	15.76	4.00	55 55.95	36 32.33
4	8	57.	11.2	25.	. .	. .	. .	. .	1 59 38.47	3.60	0.00	IV.	4	1.10	18 5.67	16.11	2.44	1 59 34.87	17 2.22
5	9	. .	. .	. .	15.3	29.	43.	. .	2 2 15.36	3.62	0.00	VII.	6	11.21	29 40.43	16.38	3.38	2 2 11.74	28 40.19
6	7	. .	45.2	59.3	13.	. .	. .	. .	8 12.73	3.69	0.00	V.	3	10.42	15 21.79	17.00	2.23	8 9.04	14 21.02
7	9	. .	. .	. .	21.	35.	48.	. .	10 20.93	3.71	−0.01	VII.	10	5.27	47 40.53	17.23	4.85	10 17.21	46 42.61
8	6	. .	. .	. .	. .	. .	57.	. .	11 29.69	3.73	0.00	VII.	4	10.42	20 20.48	17.36	2.63	11 25.96	19 20.47
9	9	. .	. .	53.5	7.	21.	. .	. .	13 7.03	3.74	0.00	VI.	4	10.44	20 21.68	17.54	2.63	13 3.29	19 21.85
10	5	3.	17.	31.	45.	. .	. .	. .	15 44.64	3.77	0.00	V.	7	4.2	30 59.39	17.87	3.48	15 40.87	30 0.74
11	8	. .	. .	53.	7.5	. .	. .	. .	19 7.02	3.82	0.00	V.	7	6.29	32 13.51	18.21	3.58	19 3.20	31 15.30
12	9	. .	. .	. .	. .	. .	59.	13.	19 31.74	3.82	0.00	VII.	7	10.52	34 25.82	18.26	3.76	19 27.92	33 27.84
13	8	. .	19.5	33.2	. .	. .	. .	. .	22 47.15	3.85	−0.01	V.	10	7.15	47 35.30	18.64	4.83	22 43.29	46 38.77
14	9	. .	. .	. .	. .	30.	43.	. .	2 25 15.97	3.88	0.00	VII.	7	5.01	31 28.82	18.93	3.52	2 25 12.09	30 31.27
15	6	22.	36.	50.	. .	. .	. .	. .	3 4 3.39	4.28	+0.01	IV.	3	9.3	14 31.90	24.23	2.16	3 3 59.12	13 38.29
16	9	. .	. .	. .	. .	52.	6.	. .	4 38.47	4.28	−0.01	VII.	8	5.38	36 56.26	24.31	3.97	4 34.18	36 4.54
17	7	. .	19.	34.	47.5	. .	. .	. .	10 46.99	4.34	+0.01	V.	1	10.32	5 18.65	25.27	1.43	10 42.66	4 25.35
18	9	. .	. .	44.	58.	. .	. .	. .	11 57.83	4.35	−0.01	V.	8	11.51	39 54.57	25.46	4.20	11 53.47	39 4.23
19	6	. .	. .	53.	7.	21.	. .	. .	13 7.00	4.36	0.01	VI.	8	13.51	40 54.95	25.65	4.27	13 2.63	40 4.87
20	9	. .	. .	. .	. .	13.5	27.	41.	13 59.78	4.37	−0.01	VII.	8	12.36	40 16.96	25.79	4.23	13 55.40	39 26.98
21	6	. .	. .	. .	. .	. .	. .	37.	14 55.53	4.37	+0.01	VII.	2	12.53	11 28.42	25.94	1.93	14 51.17	10 36.29
22	9	. .	1.	15.	28.	. .	. .	. .	23 28.24	4.45	+0.01	IV.	4	3.23	16 39.45	27.33	2.32	23 23.80	15 49.10
23	9	. .	. .	. .	. .	. .	. .	29.	23 47.79	4.45	0.00	IV.	7	3.70	16 32.90	27.39	2.34	23 43.34	15 42.59
24	9	. .	. .	. .	. .	. .	. .	46.	25 4.68	4.47	0.00	VII.	5	5.16	22 35.29	27.59	2.80	25 0.21	21 45.68
25	8	. .	. .	. .	. .	54.	. .	22.	26 40.41	4.48	+0.01	VII.	4	4.58	17 27.01	27.87	2.38	26 35.94	16 37.26
26	9	. .	. .	40.	54.	8.	. .	. .	28 53.92	4.50	0.00	VI.	6	8.31	28 14.91	28.23	3.26	28 49.42	27 26.40
27	9	. .	. .	. .	. .	50.	3.	17.3	32 36.03	4.53	−0.01	VII.	8	3.10	35 31.55	28.86	3.87	32 31.49	34 44.28
28	9	. .	9.	23.	37.	. .	. .	. .	35 36.51	4.56	+0.01	V.	2	6.52	8 56.97	29.38	1.67	35 31.96	8 8.02
29	5	36.	50.	4.	17.5	. .	. .	. .	41 17.43	4.61	0.00	V.	5	2.37	21 15.43	30.38	2.70	41 12.82	20 28.51
30	7	. .	. .	. .	. .	. .	. .	45.5	42 4.14	4.62	0.00	VII.	5	0.43	20 17.63	30.52	2.62	41 59.52	19 30.77
31	9	. .	. .	. .	43.5	57.	10.	. .	44 43.10	4.64	−0.01	VII.	7	11.26	34 42.96	31.00	3.81	3 44 38.47	33 57.77
32	8	33.	47.2	1.	. .	. .	. .	. .	52	4.70	+0.01	IV.	3	8.47	14 23.84	32.34	2.11	. . .	13 38.29
33	5	. .	9.	23.	37.	. .	. .	. .	3 53	− 4.72	0.00	V.	6	6.50	−27 24.10	−32.53	−3.19	. . .	−24 26 39.82

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1847. h.	s.	s.	s.	s.	s.
Dec. 15, 0	f 9.77	g 0.063	+ 0.760	− 1.280	0.000

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1847. h. m.	in.	°	°
Zone 151	Dec. 15, 9 5	30.042	76.	35.

REMARKS.

(151) 1. Hor. thread assumed as 9 instead of 8.
(151) 2. Transit observations incongruous. Observed transit over T. VI assumed as $21^s.0$ instead of $27^s.0$.
(151) 4. Micrometer reading assumed as 4^t $6^r.10$ instead of 4^t $1^r.10$.
(151) 23. Micrometer reading assumed to have been 4^t $2^r.7$ instead of 7^t $3^r.70$.
(151) 28. Micrometer reading assumed as $7^r.52$ instead of $6^r.52$.

ZONE 152. JANUARY 18. K. BELT, −25° 38′. D_0=−25° 13′ 50″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	27.8	. .	. .	. .	. .	. .	4 17 55.60	−49.20	0.00	.	7	2.26	−30 11.02	− 6.07	−2.48	4 17 6.40	−25 44 9.57
2	9.10	. .	7.1	21.3	. .	. .	. .	. .	25 34.69	49.26	+0.02	.	1	8.45	4 24.73	7.50	0.16	24 45.45	18 22.39
3	9.10	. .	46.3	. .	14.3	. .	. .	. .	27 14.06	49.28	0.00	.	4	5.12	17 34.42	7.82	1.34	26 24.78	31 33.58
4	9	. .	. .	. .	. .	1.7	15.0	. .	27 47.60	49.28	−0.01	.	8	9.29	38 43.01	7.93	3.28	26 58.31	52 44.22
5	9.10	. .	3.2	17.4	. .	. .	. .	. .	29 30.83	49.30	+0.01	.	2	4.9	7 4.56	8.25	0.39	28 41.54	25 21 3.20
6	9	. .	7.3	21.3	. .	. .	. .	. .	33 35.29	49.34	−0.02	.	10	4.42	46 18.20	9.03	3.96	32 45.93	26 0 21.19
7	9	0.5	14.7	28.5	. .	. .	. .	. .	40 42.20	49.45	+0.01	.	3	4.21	12 9.70	10.41	0.83	39 52.76	25 26 10.94
8	8.9	29.9	44.0	57.9	. .	. .	. .	. .	50 11.92	49.49	−0.02	. .	9	10.30	44 12.78	12.30	3.78	49 22.41	58 18.86
9	8.9	. .	. .	23.8	37.3	. .	. .	. .	4 54 37.18	−49.51	+0.03	.	1	5.49	− 2 55.98	−13.22	−0.02	4 53 47.70	−25 16 59.22

ZONE 153. JANUARY 18. K. BELT, −25° 1′. D_0=−24° 36′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	33.8	. .	7 18 6.41	−50.14	+0.02	F.	1	7.2	− 3 32.63	−10.38	−0.04	7 17 16.29	−24 40 3.11
2	9.10	25.9	39.9	. .	. .	. .	. .	. .	22 7.37	50.14	0.02	.	2	6.27	3 14.14	11.99	0.02	21 17.25	39 46.15
3	10	. .	. .	46.8	. .	. .	. .	. .	22 0.29	50.14	0.01	.	3	5.49	12 54.08	11.94	0.89	21 10.16	49 26.91
4	9	56.9	10.9	. .	. .	. .	. .	. .	24 38.38	50.14	+0.02	.	2	7.15	8 38.34	13.06	0.52	23 48.16	24 45 11.92
5	10	53.3	. .	. .	. .	. .	. .	. .	26 34.99	50.14	−0.01	.	6	10.6	29 2.93	13.89	2.37	25 44.84	25 5 39.19
6	8	26.0	40.2	. .	. .	. .	. .	. .	31 7.72	50.15	0.00	.	5	7.1	23 28.58	15.84	1.86	30 17.57	0 6.28
7	6.7	12.1	26.1	40.0	. .	. .	. .	. .	32 53.70	50.15	0.00	.	5	9.55	24 56.32	16.59	1.99	32 3.55	1 34.90
8	8	. .	46.8	0.6	. .	. .	. .	. .	7 38 14.43	−50.15	−0.01	.	7	6.40	−32 19.10	−18.88	−2.68	7 37 24.27	−25 9 0.66

ZONE 154. JANUARY 19. B. BELT, −23° 46′. D_0=−23° 21′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	. .	5.	6 8 23.95	−50.61	0.00	VII.	6	7.27	−27 42.45	− 4.55	−2.22	6 7 33.34	−23 49 39.2
2	7	. .	. .	38.	52.	5.	. .	. .	11 51.63	50.63	−0.01	V.	8	10.42	39 19.79	5.15	3.21	11 1.01	24 1 18.2
3	9	. .	12.	26.	. .	. .	. .	. .	13 39.23	50.63	+0.02	IV.	1	13.10	6 38.34	5.46	0.48	12 48.62	23 28 34.3
4	7	. .	45.	59.	. .	. .	. .	. .	15 12.29	50.64	0.01	IV.	2	14.26	12 15.66	5.71	0.95	14 21.66	34 12.3
5	8	. .	19.	33.	. .	. .	. .	. .	16 0.14	50.64	+0.02	VI.	2	8.29	9 15.51	5.99	0.70	16 9.54	23 31 12.2
6	9	. .	. .	. .	26.5	40.5	. .	. .	19 26.62	50.66	−0.02	V.	9	8.03	42 58.61	6.44	3.53	18 35.94	24 4 58.6
7	10	. .	. .	33.5	47.	. .	. .	. .	21 47.02	50.66	0.01	V.	8	7.45	37 50.53	6.85	3.10	20 56.35	23 59 50.5
8	10	22.	6.	50.	. .	. .	. .	. .	24 3.44	50.67	0.01	IV.	7	4.16	31 6.49	7.25	2.52	23 12.76	24 53 6.3
9	9	. .	. .	49.	3.	. .	. .	. .	25 2.80	50.68	−0.02	IV.	9	3.23	40 37.45	7.41	3.33	24 12.10	24 2 38.2
10	10	. .	. .	. .	16.	29.8	. .	. .	26 15.96	50.68	+0.01	V.	3	7.30	13 55.05	7.64	1.08	25 25.29	23 35 53.8
11	10	. .	. .	. .	54.	7.3	. .	. .	27 53.71	50.69	0.01	VI.	3	13.9	16 35.79	7.91	1.31	27 3.03	38 34.9
12	11	. .	. .	. .	4.	. .	27.	41.	29 59.85	50.69	+0.01	VII.	5	7.29	23 42.36	8.28	1.89	29 9.17	45 42.5
13	8	. .	. .	. .	43.2	57.	. .	. .	30 43.21	50.70	−0.01	VI.	8	7.49	37 52.44	8.40	3.10	29 52.50	59 53.9
14	6	. .	32.	45.5	59.	. .	. .	. .	32 58.92	50.70	+0.02	V.	1	10.8	5 6.54	8.81	0.34	32 8.24	27 5.7
15	6	. .	. .	. .	. .	26.	39.3	. .	34 12.21	50.71	+0.02	VII.	3	3.25	11 41.12	9.02	0.90	33 21.52	23 33 41.0
16	10	. .	18.	32.	. .	. .	. .	. .	36 45.65	50.72	−0.02	IV.	9	9.56	43 55.63	9.47	3.61	35 54.91	24 5 58.7
17	10	. .	. .	. .	. .	. .	28.5	42.9	37 1.65	50.72	−0.02	VII.	9	8.55	43 24.53	9.51	3.57	36 10.91	24 5 27.6
18	10	. .	. .	. .	. .	. .	47.	1.2	38 19.92	50.72	+0.01	VII.	3	11.43	15 52.24	9.73	1.25	37 29.21	23 37 53.2
19	9	. .	. .	. .	. .	. .	. .	10.3	39 29.14	50.73	+0.01	VII.	4	11.04	20 31.58	9.94	1.63	38 38.42	42 33.2
20	9	. .	. .	. .	. .	29.	42.	. .	41 15.07	50.73	−0.01	VII.	8	6.13	37 3.84	10.26	3.03	40 24.33	59 7.1
21	7	. .	48.	. .	. .	. .	. .	. .	44 15.45	50.74	0.01	III.	8	4.45	36 19.77	10.79	2.96	43 24.70	58 23.5
22	6	. .	. .	. .	. .	. .	. .	2.	44 21.01	50.74	−0.01	VII.	7	6.46	32 21.79	10.81	2.63	43 30.26	54 25.2
23	8	. .	. .	. .	. .	31.	44.	. .	46 17.06	50.75	+0.01	VII.	3	11.4	15 32.58	11.15	1.21	45 26.32	37 34.9
24	8	. .	. .	. .	52.5	6.	. .	. .	6 47 52.35	−50.75	−0.01	VI.	7	10.6	−34 2.83	−11.43	−2.76	6 47 1.59	−23 56 7.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Jan. 18,	6	− 55.49	g 0.039	+ 1.47	− 1.61	+ 0.01
19,	6	− 56.19	g 0.049			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(154) 5. Transits over T.'s I and II assumed as recorded over T.'s II and III, and minutes assumed as 17 instead of 16.
(154) 8. Transit over T. II assumed as 36^s instead of 34^s.

ZONE 154. JANUARY 19. B. BELT, −23° 46′. D_0 = −23° 21′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	5	. .	. .	. .	. .	. .	12.	26.	6 48 44.92	−50.75	−0.01	VII.	8	7.57	−37 56.28	−11.37	−3.11	6 47 54.16	−24 0 1.0
26	9	58.	12.	25.5	. .	. .	. .	. .	51 39.05	50.76	+0.02	IV.	3	2.41	11 19.28	12.09	0.85	50 48.31	23 33 22.2
27	9	30.	44.	58.	. .	. .	. .	. .	53 11.30	50.77	0.01	IV.	4	7.31	18 44.51	12.37	1.48	52 20.54	40 48.4
28	10	. .	. .	26.4	40.2	. .	. .	. .	54 39.95	50.77	0.01	V.	4	7.31	18 44.47	12.63	1.48	53 49.19	40 48.6
29	4	. .	9.	22.8	36.5	. .	. .	. .	57 36.26	50.78	+0.01	V.	3	9.50	14 55.56	13.15	1.16	56 45.39	23 36 59.9
30	10	. .	. .	. .	. .	. .	48.5	2.	6 58 21.19	50.78	−0.02	VII.	9	8.46	43 20.0	13.28	3.57	6 57 30.39	24 5 26.9
31	8	16.	. .	. .	. .	. .	. .	. .	7 1 57.08	50.78	+0.01	.	3	8.51	14 25.85	13.92	1.12	7 1 6.31	23 36 30.9
32	10	. .	35.	49.	. .	. .	. .	. .	3 2.48	50.79	0.00	IV.	6	8.49	28 24.15	14.10	2.29	2 11.69	50 30.5
33	7	. .	. .	. .	. .	38.	51.5	5.5	3 24.35	50.79	0.00	VII.	6	4.42	26 19.26	14.17	2.11	2 33.56	48 25.5
34	10	. .	. .	. .	. .	. .	. .	59.	4 17.96	50.79	0.00	VII.	6	9.58	28 58.59	14.33	2.34	3 27.17	51 5.3
35	11	. .	. .	. .	8.	22.	. .	. .	6 8.07	50.79	+0.01	VI.	4	11.39	21 19.71	14.65	1.68	5 17.29	43 26.0
36	8	. .	. .	. .	39.	53.	. .	. .	7 39.11	50.80	−0.01	VI.	8	5.12	36 33.27	14.98	3.00	6 48.30	58 11.3
37	7	. .	. .	. .	. .	. .	. .	17.	8 35.63	50.80	+0.02	VII.	1	7.14	3 38.50	15.09	0.18	7 44.85	25 43.8
38	7	. .	. .	. .	. .	34.	47.5	. .	10 20.30	50.80	0.02	VII.	1	13.17	6 41.53	15.39	0.46	9 29.52	28 47.4
39	8	. .	3.5	17.3	31.	. .	. .	51.	11 10.74	50.80	0.02	VII.	2	13.30	11 47.09	15.61	0.89	10 19.96	33 53.6
40	9	. .	. .	. .	. .	39.	52.5	. .	13 30.31	50.80	+0.02	IV.	2	6.12	8 6.58	15.94	0.57	12 39.53	30 13.1
41	9	. .	. .	2.	15.6	. .	. .	. .	16 15.56	50.81	−0.01	IV.	7	11.48	34 54.40	16.46	2.84	15 24 74	57 3.7
42	10	. .	. .	. .	48.5	1.5	. .	. .	17 48.10	50.81	0.01	VI.	6	12.49	30 25.01	16.72	2.47	16 57.28	23 52 34.2
43	10	. .	. .	. .	34.	47.5	. .	. .	19 33.88	50.81	−0.02	VI.	10	3.50	45 51.82	17.04	3.81	18 43.05	24 8 2.7
44	7	. .	. .	59.	. .	26.	. .	. .	21 12.21	50.82	+0.02	VI.	1	5.40	2 51.29	17.32	0.10	20 21.41	23 24 58.7
45	9	. .	10.	24.	. .	. .	. .	. .	36 37.42	50.82	0.00	IV.	5	7.22	23 39.17	20.04	1.89	35 46.60	23 45 51.1
46	11	. .	. .	. .	. .	24.	37.2	51.	37 10.18	50.83	−0.02	VII.	10	5.40	46 47.10	20.14	3.90	36 19.33	24 9 1.1
47	10	. .	. .	0.0	14.	27.	. .	. .	39 13.60	50.83	0.01	VI.	7	3.10	30 33.05	20.49	2.48	38 22.76	23 52 46.0
48	9	. .	. .	. .	23.	. .	. .	. .	40 22.85	50.83	−0.01	V.	7	4.55	31 26.11	20.70	2.56	39 32.01	53 39.4
49	10	. .	. .	. .	. .	17.	30.2	. .	41 3.16	50.83	0.00	VI.	5	10.02	24 59.71	20.82	2.00	40 12.33	47 12.5
50	9	. .	. .	. .	. .	. .	11.	. .	42 43.88	50.83	+0.02	VI.	1	12.28	6 17.01	21.10	0.40	41 53.07	28 28.5
51	8	. .	. .	14.2	28.	. .	. .	. .	44 27.64	50.83	+0.02	V.	1	6.17	3 10.06	21.41	0.14	43 36.83	23 25 21.6
52	8	. .	. .	. .	. .	. .	. .	11.	45 30.20	50.83	−0.02	VII.	10	5.20	46 37.01	21.59	3.89	44 39.35	24 8 52.5
53	9	. .	50.3	4.2	. .	. .	. .	. .	49 17.78	50.83	0.01	IV.	7	7.13	32 35.73	22.25	2.66	48 26.94	23 54 50.64
54	10	. .	. .	. .	. .	. .	. .	35.5	51 54.67	50.83	−0.02	VII.	9	11.54	44 54.79	22.83	3.74	51 3.82	24 7 11.36
55	10	. .	. .	. .	46.	0.0	. .	. .	53 46.05	50.82	+0.02	VI.	2	10.42	10 22.58	23.03	3.76	52 55.25	23 32 39.4
56	9	. .	. .	. .	. .	. .	11.	. .	55 43.88	50.82	+0.02	VII.	1	5.51	2 56.64	23.36	0.11	54 53.08	23 25 10.1
57	8	. .	. .	. .	38.	51.5	5.	. .	57 37.82	50.82	−0.02	VII.	10	9.35	48 45.60	23.68	4.04	56 46.98	24 11 3.3
58	9	. .	. .	. .	6.	19.7	. .	. .	7 59 5.96	50.82	0.01	VI.	7	10.30	34 14.93	23.94	2.79	7 58 15.13	23 56 31.7
59	4.5	19.	33.	46.9	0.5	14.	. .	. .	8 2 0.37	50.82	0.01	VI.	6	12.22	30 11.39	24.44	2.44	8 1 9.54	52 28.3
60	10	. .	. .	. .	7.5	21.	. .	. .	3 7.35	50.82	0.01	VI.	7	12.45	34 52.74	24.63	2.90	2 16.52	23 57 10.3
61	11	. .	. .	. .	. .	33.	46.2	0.0	8 4 19.16	−50.82	−0.02	VII.	9	7.07	−42 30.07	−24.83	−3.54	8 3 28.32	−24 4 48.4

ZONE 155. JANUARY 20. K. BELT, −26° 16′. D_0 = −25° 52′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	25.1	39.0	. .	. .	2 38 24.97	−50.37	0.00	.	3	11.39	−15 50.57	−10.29	−2.13	2 37 34.60	−26 8 2.99
2	9	. .	52.2	6.5	. .	. .	. .	. .	40 19.98	50.40	+0.01	.	1	11.17	5 41.37	10.52	1.20	39 29.59	25 57 53.09
3	9	. .	. .	. .	27.3	. .	. .	. .	44 27.15	50.45	−0.01	.	10	7.15	47 35.34	11.03	5.17	43 36.69	26 39 51.54
4	8	. .	. .	. .	50.3	. .	. .	. .	53 50.15	50.56	+0.01	.	1	0.43	0 21.68	12.24	1.69	52 59.60	25 52 35.61
5	9	13.9	28.2	42.3	. .	. .	. .	. .	55 55.89	50.58	0.01	.	2	8.3	9 2.55	12.50	1.51	55 5.32	26 1 16.56
6	9	. .	. .	. .	. .	23.7	37.6	. .	56 23.46	50.58	+0.01	.	2	11.39	10 51.47	12.53	1.69	55 32.89	3 5.69
7	7.8	20.8	35.0	49.2	. .	. .	. .	. .	2 59 3.00	50.63	0.00	.	6	11.8	29 34.23	12.91	3.44	2 58 12.37	21 50.58
8	9	. .	41.0	55.1	. .	. .	. .	. .	3 1 9.09	−50.65	−0.01	.	8	11.31	−39 44.53	−13.19	−4.39	3 0 18.43	−26 32 2.11

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Jan. 20,	6	− 57.81	g 0.048			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
.	1848,	h. m.	in.	°	°

REMARKS.

(154) 31. One of the threads 10^s wrong. The first assumed correct.
(154) 35. Micrometer reading assumed as $12^r.39$ instead of $11^r.39$.
(154) 39. Transits assumed as $43^s.5$, $57^s.3$, and 11^s instead of $3^s.5$, $17^s.3$, and $11^s.3$.
(154) 40. Threads V and VI assumed as 44^s and $57^s.5$ instead of 39^s and $52^s.5$.
(154) 58. Time of transit over T. II assumed as $19^s.7$ instead of $17^s.7$.
(154) 60. Micrometer reading assumed as $11^r.45$ instead of $12^r.45$.
(155) 6. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

ZONE 155. JANUARY 20. K. BELT, −26° 16′. D_0 = −25° 52′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	9	. .	. .	. .	40.9	54.8	. .	. .	3 1 50.77	−50.65	0.00	.	3	11.32	−15 47.04	−13.22	−2.14	3 1 0.12	−26 8 2.40
10	8.9	. .	. .	. .	. .	. .	2.8	. .	4 35.11	50.69	+0.01	F.	2	7.28	8 44.72	13.70	1.46	3 44.43	0 59.88
11	9	. .	. .	. .	49.3	3.0	. .	. .	5 49.07	50.70	0.00	.	3	7.51	13 55.59	13.85	1.96	4 58.37	6 11.40
12	9	. .	2.0	15.5	30.2	. .	. .	. .	7 29.91	50.73	−0.01	.	9	9.37	43 46.05	14.09	4.80	6 39.17	36 4.94
13	5.6	. .	. .	9.9	. .	38.0	. .	. .	9 24.08	50.75	−0.01	.	10	6.46	47 20.73	14.33	5.16	8 33.32	26 39 40.22
14	8	24.5	38.8	. .	. .	. .	. .	. .	13 6.47	50.79	+0.01	.	2	2.41	6 20.18	14.87	1.25	12 15.69	25 58 36.30
15	9	. .	33.0	47.3	1.9	. .	. .	. .	14 1.17	50.80	0.00	.	4	0.20	15 7.18	15.02	2.07	13 10.37	26 7 24.27
16	5.6	. .	12.7	26.7	40.8	. .	. .	. .	16 40.51	50.83	0.00	.	3	10.32	15 16.79	15.40	2.09	15 49.68	7 34.28
17	7	. .	. .	. .	36.4	. .	. .	. .	17 36.25	50.84	−0.01	.	10	6.26	47 10.64	15.53	5.15	16 45.40	39 31.32
18	7	. .	. .	15.9	30.2	. .	. .	. .	18 30.01	50.85	−0.01	.	9	5.41	41 47.04	15.67	4.61	17 39.15	34 7.32
19	8	. .	. .	3.2	17.3	. .	. .	. .	19 17.08	50.86	0.00	.	5	9.17	24 37.16	15.79	2.96	18 26.22	16 55.91
20	9	. .	. .	. .	. .	45.2	59.4	. .	19 45.32	50.86	−0.01	.	8	6.30	37 12.76	15.82	4.17	18 54.45	29 32.75
21	9	15.1	29.0	. .	. .	. .	. .	. .	21 57.00	50.91	0.00	.	4	11.37	20 48.56	16.34	2.62	22 6.09	13 7.52
22	9	. .	. .	. .	. .	. .	54.8	. .	22 27.07	50.94	0.00	.	3	13.28	16 45.51	16.76	2.23	24 36.13	9 4.50
23	9	. .	. .	. .	. .	. .	. .	38.5	26 56.55	50.95	0.00	F.	5	8.2	23 59.18	16.98	2.90	26 5.60	16 19.06
24	6	. .	. .	. .	. .	. .	. .	1.9	26 19.84	50.95	+0.01	*g	3	10.25	15 12.87	16.89	2.08	25 28.90	7 31.84
25	9	. .	. .	. .	. .	. .	. .	35.9	26 53.87	50.95	0.00	*g	4	5.38	17 47.15	16.97	2.33	26 2.92	10 6.45
26	5	. .	. .	5.9	19.8	. .	. .	. .	29 19.59	50.98	+0.01	.	3	5.51	12 55.08	17.34	1.86	28 28.62	5 14.28
27	9.8	. .	48.8	2.8	. .	. .	. .	. .	33 16.52	51.03	+0.01	.	3	7.15	13 37.44	17.94	1.92	32 25.50	5 57.30
28	9	. .	8.9	23.2	. .	. .	. .	. .	37 37.03	51.07	−0.01	.	7	11.45	34 52.89	18.66	3.95	36 45.95	27 15.50
29	6.7	. .	. .	51.0	5.0	. .	. .	. .	40 4.88	51.10	0.00	.	7	3.47	30 51.86	19.08	3.56	39 13.78	23 14.50
30	6.7	51.2	5.6	19.5	. .	. .	. .	. .	43 33.51	51.14	−0.01	.	8	6.22	37 8.72	19.66	4.16	42 42.36	26 29 32.54
31	9	. .	. .	12.2	26.2	. .	. .	. .	44 25.89	51.14	+0.01	.	1	10.51	5 28.26	19.82	1.16	43 34.76	25 57 49.24
32	10	. .	2.6	. .	. .	. .	. .	. .	46 30.37	51.17	+0.01	.	2	9.56	9 59.53	20.17	1.59	45 39.21	26 2 21.29
33	9	. .	. .	. .	. .	13.0	26.8	. .	46 59.04	51.17	0.00	.	6	13.7	30 34.23	20.25	3.53	46 7.87	22 58.01
34	9	. .	. .	. .	14.8	28.7	. .	. .	48 14.69	51.18	0.00	.	5	7.57	23 56.82	20.48	2.89	47 23.51	16 20.17
35	7.8	27.3	41.8	. .	. .	. .	. .	. .	50 9.60	51.20	0.00	.	6	11.31	29 45.83	20.80	3.45	49 18.40	22 10.08
36	9	. .	. .	. .	21.4	. .	. .	. .	50 21.25	51.20	0.00	.	6	13.19	30 40.28	20.84	3.54	49 30.05	23 4.66
37	6.7	. .	. .	. .	. .	. .	. .	53.5	50 11.84	51.20	−0.01	.	9	15.47	46 52.61	20.81	5.13	49 20.63	39 18.55
38	9	. .	. .	. .	. .	19.1	. .	. .	52 5.11	51.22	0.00	.	4	6.10	18 3.67	21.14	2.34	51 13.89	10 27.15
39	9	. .	. .	. .	. .	. .	24.3	. .	52 56.48	51.23	−0.01	F.	9	2.20	40 5.52	21.30	4.45	52 5.24	32 31.27
40	10	. .	. .	. .	. .	. .	31.6	. .	54 3.83	51.24	0.00	F.	6	7.59	27 58.76	21.48	3.28	53 12.59	20 23.52
41	10	. .	. .	7.9	. .	. .	. .	. .	57 21.91	51.28	−0.01	.	8	8.27	38 11.75	22.07	4.26	56 30.62	30 38.08
42	10	. .	. .	. .	57.3	. .	. .	. .	57 57.15	51.29	−0.01	.	7	9.4	33 31.71	22.18	3.81	57 5.85	25 57.70
43	5.6	. .	. .	. .	. .	. .	37.1	51.4	58 9.39	51.29	0.00	F.	5	6.54	23 24.89	22.21	2.85	57 18.10	26 15 49.95
44	9	. .	. .	. .	. .	42.3	. .	. .	3 59 28.23	−51.30	+0.01	.	1	5.49	− 2 55.98	−22.46	−0.91	3 58 36.94	−25 55 19.35

ZONE 156. JANUARY 20. K. BELT, −26° 16′. D_0 = −25° 51′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	19.0	33.1	. .	. .	. .	. .	. .	6 23 0.90	−52.36	+0.02	.	2	8.37	− 9 19.70	−43.13	−1.46	6 22 8.56	−26 1 24.3
2	9	. .	. .	. .	9.5	23.3	. .	. .	24 9.36	52.37	−0.01	.	7	6.28	32 13.04	43.44	3.71	23 16.98	24 20.2
3	9	. .	10.8	24.9	. .	. .	. .	. .	25 37.65	52.37	+0.01	.	4	12.21	21 10.73	43.78	2.63	24 45.29	13 17.1
4	10.9	. .	. .	. .	6.9	. .	. .	. .	26 6.75	52.37	−0.02	.	8	9.33	33 46.33	43.91	3.87	25 14.36	25 54.1
5	10	. .	1.8	. .	29.8	. .	. .	. .	27 29.73	52.38	−0.01	.	7	11.11	34 35.74	44.26	3.94	26 37.34	26 43.9
6	8	. .	. .	15.9	29.8	. .	. .	. .	28 29.65	52.39	+0.01	.	4	11.55	20 57.63	44.51	2.60	27 37.27	26 13 4.7
7	9	. .	. .	. .	. .	7.5	. .	. .	28 53.43	52.39	0.03	.	1	5.41	2 51.94	44.61	0.91	28 1.07	25 54 57.5
8	9	. .	58.1	12.8	. .	. .	. .	. .	30 26.05	52.39	+0.02	.	1	6.28	3 15.64	44.98	0.95	29 33.68	26 55 21.6
9	8	. .	42.6	. .	. .	. .	. .	. .	6 31 10.58	−52.39	−0.01	.	7	7.19	−32 38.76	−45.18	−4.74	6 30 18.18	−26 24 48.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(155) 9. Transits over T.'s IV and V assumed as $50^{s}.9$ and $4^{s}.8$ instead of $40^{s}.9$ and 54^{s} 8.
(155) 20. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.
(156) 4. Hor. thread assumed as 7 instead of 8.

In Mr. Keith's observations, when the transit wire on which the declination was observed is not recorded, the observation was made on the IV. thread. I know of no signification for the letters *g*, *g*. It is assumed that F denotes the VI. and *g* the VII. thread.

ZONE 156. JANUARY 20. K. BELT, −26° 16′. $D_0 = -25° 51' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	9	. .	. .	. .	. .	19.1	. .	. .	6 31 5.06	−52.39	+0.02	.	2	6.12	− 8 6.58	−45.15	−1.35	6 30 12.69	−26 0 13.1
11	9	. .	. .	. .	. .	59.8	. .	. .	31 45.93	52.40	−0.02	.	10	4.1	45 57.52	45.32	5.09	30 53.51	26 38 7.9
12	10	. .	. .	52.5	. .	. .	. .	. .	33 6.05	52.40	+0.02	.	2	4.48	7 24.22	45.64	1.29	32 13.67	25 59 31.2
13	9	. .	. .	48.8	. .	. .	. .	. .	34 2.75	52.41	−0.01	.	7	10.47	34 23.65	45.84	3.93	33 10.33	26 26 33.4
14	9	. .	. .	. .	17.9	. .	. .	. .	34 17.75	52.41	0.00	.	5	9.31	24 44.22	45.94	2.97	33 25.34	16 53.1
15	10	. .	. .	4.4	. .	. .	. .	. .	35 18.11	52.41	+0.01	.	4	6.29	18 13.25	46.18	2.33	34 25.71	26 10 21.8
16	9	17.3	32.0	. .	. .	. .	. .	. .	37 59.47	52.42	0.02	.	2	3.27	6 43.37	46.85	1.22	37 7.07	25 58 51.4
17	9	. .	. .	6.8	. .	. .	. .	. .	38 20.36	52.42	+0.02	.	2	6.53	8 27.25	46.93	1.39	37 27.96	26 0 35.6
18	8.9	. .	. .	. .	. .	. .	36.8	51.2	38 9.16	52.42	0.00	F.	6	6.35	27 16.41	46.90	3.22	37 16.74	19 26.5
19	10	. .	. .	. .	13.1	. .	. .	. .	40 12.95	52.43	+0.02	.	2	5.58	7 59.51	47.39	1.34	39 20.54	0 8.2
20	10	. .	. .	. .	51.8	. .	. .	. .	40 51.65	52.43	−0.02	.	9	5.36	41 44.53	47.55	4.66	39 59.20	33 56.7
21	10	6.0	20.1	. .	. .	. .	. .	. .	42 48.11	52.44	−0.01	.	7	2.27	30 11.52	48.02	3.52	41 55.66	26 22 23.6
22	7.8	. .	. .	. .	54.1	. .	. .	. .	43 53.95	52.44	+0.03	.	1	3.5	1 33.28	48.28	0.79	43 1.54	25 53 42.3
23	9.10	. .	. .	52.4	. .	. .	. .	. .	45 6.48	52.45	−0.02	.	9	9.44	43 49.58	48.57	4.87	44 14.01	26 36 3.0
24	8	44.6	59.0	13.2	. .	. .	. .	. .	46 26.92	52.45	0.01	.	6	10.42	29 21.13	48.89	3.44	45 34.46	21 33.5
25	8	. .	. .	. .	39.1	. .	. .	. .	46 38.95	52.45	−0.01	.	7	6.19	32 8.51	48.94	4.71	45 46.49	26 24 22.2
26	7.8	. .	. .	. .	. .	42.6	56.4	. .	47 28.63	52.45	+0.02	.	1	8.5	4 4.56	49.14	0.97	46 36.20	25 56 14.7
27	10	. .	19.0	33.7	. .	. .	. .	. .	51 47.38	52.47	−0.02	.	8	10.14	39 5.71	50.20	4.36	50 54.89	26 31 20.3
28	9	. .	12.7	26.9	. .	. .	. .	. .	52 40.63	52.47	0.00	.	5	5.11	22 33.11	50.41	2.75	51 48.16	14 46.3
29	9	. .	. .	11.4	. .	. .	. .	. .	53 25.41	52.47	−0.02	.	8	9.14	38 35.45	50.59	4.34	52 32.92	30 50.4
30	8.9	. .	. .	. .	49.0	. .	. .	. .	53 48.85	52.47	0.00	.	5	8.13	24 4.89	50.69	2.91	52 56.38	16 18.5
31	10	. .	. .	35.5	. .	. .	. .	. .	54 49.28	52.47	0.00	.	5	6.5	23 0.35	50.93	2.81	53 56.81	15 14.1
32	9	. .	. .	. .	10.7	. .	. .	. .	55 10.55	52.48	−0.01	.	6	8.25	28 12.04	51.02	3.31	54 18.06	20 26.4
33	9	3.8	17.9	. .	. .	. .	. .	. .	56 45.97	52.48	−0.01	.	8	5.20	36 37.45	51.41	4.15	55 53.48	28 53.0
34	9	. .	. .	. .	47.0	. .	. .	. .	56 46.85	52.48	0.00	.	5	10.32	25 14.99	51.41	3.02	55 54.37	17 29.4
35	10	. .	. .	. .	. .	. .	19.2	. .	56 51.42	52.48	−0.01	F.	6	10.7	29 3.31	51.43	3.37	55 58.93	21 18.1
36	9	. .	18.7	. .	. .	. .	. .	. .	58 46.74	52.49	0.02	.	8	11.30	39 44.03	51.90	4.47	57 54.23	32 0.4
37	10	. .	. .	. .	. .	52.8	. .	. .	6 58 38.88	52.49	−0.01	.	7	8.23	33 11.03	51.88	3.81	57 46.38	25 26.7
38	9	. .	53.2	. .	. .	. .	. .	. .	7 0 20.97	52.49	+0.02	.	2	9.13	9 37.84	52.28	1.48	59 28.50	1 51.6
39	10	. .	. .	. .	. .	45.0	. .	. .	0 30.96	52.49	+0.02	.	2	7.59	9 0.53	52.32	1.43	6 59 38.49	1 14.3
40	10	. .	. .	. .	25.9	. .	. .	. .	1 25.75	52.49	−0.01	.	7	4.55	31 26.15	52.54	3.64	7 0 33.25	23 42.3
41	6.7	. .	. .	. .	. .	2.0	. .	. .	1 48.08	52.49	−0.01	F.	7	8.49	33 23.98	52.64	3.83	0 55.58	25 40.5
42	9	. .	. .	. .	. .	. .	50.2	. .	2 22.48	52.49	+0.01	F.	3	10.48	15 24.68	52.79	2.06	1 30.00	7 39.5
43	2.1	. .	. .	. .	. .	. .	37.9	52.3	3 10.22	52.50	+0.01	F.	3	14.32	17 17.62	52.97	2.24	2 17.73	9 32.8
44	9	23.8	. .	. .	. .	. .	. .	. .	7 5.86	52.50	0.00	.	5	4.21	22 7.90	53.93	2.70	6 13.36	14 24.5
45	10	. .	. .	29.8	. .	. .	. .	. .	8 43.52	52.51	+0.01	.	4	8.20	19 9.22	54.32	2.42	7 51.02	11 26.0
46	6	. .	. .	. .	1.0	15.1	. .	. .	9 0.97	52.51	0.01	.	3	7.13	13 36.43	54.42	1.89	8 8.47	5 52.7
47	4.5	. .	. .	. .	. .	50.1	3.8	. .	9 36.09	52.51	0.02	F.	8	9.20	38 38.30	54.54	4.37	8 43.60	30 57.2
48	9	. .	. .	. .	53.7	. .	. .	. .	10 53.55	52.51	+0.02	.	9	4.58	41 25.36	54.84	4.65	10 1.06	33 44.9
49	10	45.8	. .	. .	. .	. .	. .	. .	12 27.97	52.51	−0.01	.	7	6.24	32 11.03	55.24	3.71	11 35.45	24 30.0
50	6	. .	. .	21.0	35.2	. .	. .	. .	12 35.04	52.51	−0.02	.	8	11.2	39 29.91	55.27	4.46	11 42.51	31 49.6
51	5	. .	. .	23.8	37.9	. .	. .	. .	13 37.70	52.51	0.00	.	6	5.9	26 33.21	55.51	3.15	12 45.19	18 51.9
52	9	. .	. .	. .	26.5	. .	. .	. .	14 26.35	52.51	0.00	.	5	11.9	25 33.64	55.72	3.06	13 33.84	17 52.4
53	7.8	. .	. .	5.4	. .	. .	. .	. .	15 19.34	52.51	−0.01	.	7	8.23	33 11.03	55.93	3.81	14 26.82	25 30.8
54	7	. .	. .	. .	. .	55.9	. .	. .	15 42.04	52.51	−0.03	.	10	9.51	48 54.00	56.02	5.39	14 49.50	41 15.4
55	10	. .	5.2	. .	. .	. .	. .	. .	17 32.99	52.52	+0.02	.	3	4.57	12 27.86	56.47	1.76	16 40.49	4 46.1
56	10	. .	. .	. .	14.4	. .	. .	. .	18 14.25	52.52	0.00	.	5	8.17	24 6.91	56.63	2.91	17 21.73	16 26.4
57	9	. .	54.2	. .	. .	. .	. .	. .	19 22.17	52.52	−0.01	.	7	4.4	31 0.44	56.93	3.60	18 29.64	23 21.0
58	8	36.8	51.1	. .	. .	. .	. .	. .	7 20 18.99	−52.52	0.00	.	6	7.3	−27 30.69	−57.14	−3.25	7 19 26.47	−26 19 51.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

ZONE 156. JANUARY 20. K. BELT, −26° 16′. D_0=−25° 51′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
59	8	. .	23.4	37.0	. .	. .	. .	. .	7 20 51.20	−52.52	−0.01	.	8	6.50	−37 22.84	−57.28	−4.23	7 19 58.67	−26 29 44.4
60	9	. .	. .	11.3	. .	. .	. .	. .	21 25.01	52.52	+0.01	.	4	11.6	20 32.93	57.41	2.75	20 32.50	12 53.1
61	7	5.3	19.4	. .	. .	. .	. .	. .	22 47.50	52.52	−0.02	.	8	11.43	39 50.58	57.75	4.49	21 54.96	32 12.8
62	10	. .	. .	. .	57.2	. .	. .	. .	22 57.05	52.52	+0.01	.	3	11.34	15 48.05	57.79	2.10	22 4.54	8 7.9
63	9	39.8	53.8	. .	. .	. .	. .	. .	26 21.75	52.53	+0.01	.	4	9.22	19 40.48	58.61	2.47	25 29.23	12 1.6
64	9	. .	. .	. .	26.3	. .	. .	. .	26 26.15	52.53	−0.02	.	9	7.46	42 50.08	58.63	4.79	25 33.60	35 13.5
65	6	. .	52.3	. .	20.8	. .	. .	. .	29 20.54	52.53	−0.03	.	10	10.22	49 9.64	59.33	5.43	28 27.98	41 34.4
66	6.7	. .	. .	3.8	17.4	. .	. .	. .	30 17.44	52.53	0.00	.	5	11.27	25 42.71	59.56	3.07	29 24.91	18 5.3
67	7	5.1	19.7	33.8	. .	. .	. .	. .	31 47.61	52.53	−0.01	.	8	5.2	36 28.38	59.92	4.15	30 54.07	28 52.4
68	8	18.8	32.8	. .	. .	. .	. .	. .	32 0.96	52.53	0.02	.	9	4.45	41 18.81	59.97	4.64	31 8.41	33 43.4
69	6	. .	. .	19.5	. .	47.1	. .	. .	33 33.32	52.53	0.01	.	8	2.58	35 25.85	60.34	4.04	32 40.78	27 50.2
70	7	. .	. .	. .	. .	. .	38.2	. .	34 10.38	52.53	−0.02	F.	8	9.58	38 57.46	60.49	4.41	33 17.83	31 22.4
71	9	. .	. .	. .	. .	. .	28.9	. .	35 1.15	52.53	0.00	F.	5	5.2	22 28.41	60.69	2.76	34 8.62	26 14 51.9
72	5.6	47.3	1.3	. .	. .	. .	. .	. .	37 29.14	52.53	+0.02	.	2	5.0	7 30.27	61.29	1.28	36 36.63	25 59 52.8
73	10	. .	. .	42.8	. .	. .	. .	. .	38 56.65	52.53	0.00	.	6	5.28	27 43.29	61.64	3.27	38 4.12	26 20 8.2
74	10	. .	. .	. .	40.0	. .	. .	. .	39 39.85	52.53	−0.02	.	8	11.32	39 45.04	61.81	3.48	38 47.30	32 11.3
75	10	. .	. .	25.7	. .	. .	. .	. .	40 39.80	52.53	−0.02	.	9	11.36	44 46.06	62.05	4.99	39 47.25	37 13.1
76	9	. .	. .	. .	. .	. .	33.8	. .	41 6.10	52.53	+0.02	F.	2	8.21	9 11.45	62.15	1.43	40 13.59	1 35.0
77	10	. .	. .	2.6	. .	. .	. .	. .	43 16.75	52.53	−0.03	.	10	8.21	48 8.62	62.72	5.32	42 24.19	40 36.7
78	10	. .	. .	. .	. .	. .	45.4	. .	43 17.56	52.53	−0.02	F.	9	12.7	45 1.51	62.72	5.01	42 25.01	37 29.2
79	10	. .	30.8	. .	. .	. .	. .	. .	44 58.65	52.53	+0.01	.	4	7.22	18 39.97	63.08	2.37	44 6.13	11 5.4
80	10	. .	2.2	. .	. .	. .	. .	. .	46 30.24	52.53	−0.02	.	8	9.3	38 29.90	63.44	4.34	45 37.69	30 57.7
81	9	2.7	16.5	. .	. .	. .	. .	. .	47 44.45	52.53	+0.02	.	2	8.37	9 19.70	63.73	1.43	46 51.94	26 1 44.9
82	8	55.5	9.9	. .	. .	. .	. .	. .	48 37.51	52.53	0.02	.	1	10.21	5 13.13	63.95	1.05	47 45.00	25 57 38.1
83	9	. .	12.0	. .	. .	. .	. .	. .	49 39.79	52.53	0.02	.	2	14.29	12 17.17	64.20	1.73	48 47.28	26 4 43.1
84	8	. .	. .	. .	55.1	9.0	. .	. .	49 54.96	52.53	+0.02	.	2	9.1	9 31.79	64.26	1.45	49 2.45	1 57.5
85	9	. .	. .	. .	45.5	59.6	. .	. .	50 45.50	52.53	0.00	.	6	6.38	27 18.09	64.46	3.22	49 52.97	26 19 45.8
86	9	. .	. .	. .	. .	. .	47.1	. .	51 19.43	52.53	+0.03	.	1	5.36	2 49.43	64.59	0.82	50 26.93	25 55 14.8
87	9	. .	. .	. .	52.2	. .	. .	. .	53 52.05	52.53	−0.03	.	10	10.25	49 11.15	65.20	5.44	52 59.49	26 41 41.8
88	9	. .	29.2	43.5	. .	. .	. .	. .	54 57.14	52.53	+0.01	.	4	7.4	18 30.90	65.46	1.35	54 4.62	10 57.7
89	10	. .	29.6	. .	. .	. .	. .	. .	55 57.71	52.52	−0.03	.	10	5.21	46 37.85	65.70	5.18	55 5.16	39 8.7
90	8.9	58.8	13.1	. .	. .	. .	. .	. .	58 41.11	52.52	−0.02	.	9	3.44	40 48.05	66.35	4.60	57 48.57	33 19.0
91	10	. .	. .	19.1	. .	. .	. .	. .	7 59 32.74	52.52	+0.02	.	3	7.12	13 5.68	66.55	1.79	58 40.24	5 34.0
92	9	. .	. .	. .	0.9	13.8	. .	. .	8 0 0.30	52.52	0.00	.	6	7.31	27 44.81	66.66	3.29	7 59 7.78	20 14.8
93	9	. .	2.6	16.5	. .	. .	. .	. .	1 30.69	52.52	−0.03	.	10	9.30	48 43.42	67.02	0.39	8 0 38.14	26 41 15.8
94	10	. .	. .	4.3	. .	. .	. .	. .	2 17.81	52.52	+0.03	.	1	8.27	4 15.65	67.22	0.96	1 25.32	25 56 43.8
95	10	. .	29.8	. .	. .	. .	. .	. .	4 57.59	52.52	+0.02	.	3	6.12	13 5.68	67.85	1.82	4 5.09	26 5 35.4
96	10	. .	0.5	. .	. .	. .	. .	. .	6 28.61	52.51	−0.03	.	10	6.41	47 18.20	68.21	5.25	5 36.07	39 51.7
97	10	45.8	. .	. .	. .	. .	. .	. .	11 27.87	52.51	0.00	.	5	5.42	22 48.75	69.40	2.76	10 35.36	15 20.9
98	10	. .	. .	7.8	21.6	. .	. .	. .	12 21.70	52.51	−0.03	.	10	8.24	48 10.14	69.61	5.34	11 29.16	40 45.1
99	9	. .	. .	. .	. .	58.0	. .	. .	12 44.10	52.50	0.02	F.	8	11.12	39 34.78	69.70	4.48	11 51.58	32 9.0
100	8.9	. .	50.2	4.6	. .	. .	. .	. .	8 14 18.49	−52.50	−0.02	.	9	10.40	−44 17.82	−70.08	−4.95	8 13 25.97	−26 36 52.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(156) 73. Micrometer reading assumed as $7^{r}.28$ instead of $5^{r}.28$.
(156) 91. Micrometer reading assumed as $6^{r}.12$ instead of $7^{r}.12$.

ZONE 157. JANUARY 22. K. BELT, −26° 53′. D₀=−26° 58′ 40″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	26.1	. .	. .	. .	2 57 25.94	. .	. .	.	9	12.28	−35 14.56	−32.73	−3.00		
2	9	. .	. .	. .	3.1	. .	. .	. .	3 3 2.95	. .	. .	.	1	4.22	2 12.11	31.49	+0.20		
3	8.9	. .	. .	. .	40.1	54.0	. .	. .	3 39.94	. .	. .	.	4	6.33	18 15.27	31.35	−1.35		
4	10	. .	. .	. .	. .	23.9	. .	. .	9 9.76	. .	. .	.	1	4.19	2 10.60	30.12	+0.20		
5	9	. .	. .	. .	20.5	37.3	. .	. .	10 23.32	. .	. .	.	9	5.56	41 54.61	29.85	−3.67		
6	9	. .	. .	. .	. .	11.8	25.3	. .	10 57.57	. .	. .	.	1	8.32	4 18.18	29.74	0.00		
7	7.6	31.9	46.3	0.6	14.5	28.3	42.2	57.0	15 14.24	. .	. .	.	2	8.05	9 3.56	28.82	0.45		
8	9	. .	48.9	3.0	. .	. .	. .	. .	17 17.19	. .	. .	.	10	5.23	46 38.86	28.38	4.14		
9	9	. .	15.2	29.5	. .	. .	. .	. .	19 43.56	. .	. .	.	9	12.28	45 12.26	27.86	4.00		
10	8.9	. .	. .	54.8	9.3	. .	. .	. .	20 9.08	. .	. .	.	10	5.46	46 50.47	27.77	4.16		
11	6.7	. .	. .	41.9	56.4	. .	. .	. .	20 56.20	. .	. .	.	10	11.11	49 34.34	27.60	4.44		
12	10	. .	. .	. .	46.2	. .	. .	. .	21 46.04	. .	. .	.	5	9.34	24 45.74	27.45	1.98		
13	9	. .	6.9	20.9	. .	. .	. .	. .	25 34.67	. .	. .	.	2	6.20	8 10.61	26.66	0.37		
14	10	42.5	56.6	. .	. .	. .	. .	. .	30 24.67	. .	. .	.	4	5.19	17 37.95	25.68	1.29		
15	10	. .	. .	. .	. .	. .	. .	6.3	41 25.28	−53.58	−0.01	.	8	4.33	36 13.76	23.50	3.10	3 40 31.69	−27 5 20.36
16	6	. .	. .	. .	. .	49.3	2.9	. .	42 35.13	53.59	0.00	.	4	7.4	18 30.90	23.27	1.37	41 41.54	26 47 35.54
17	9	. .	. .	58.9	. .	. .	. .	. .	45 13.00	53.62	−0.01	.	8	10.58	34 29.19	22.75	2.93	44 19.37	27 3 34.96
18	9	. .	32.2	. .	. .	. .	. .	. .	49 0.31	53.66	0.00	.	6	12.06	30 3.48	21.98	2.49	49 6.65	26 59 7.95
19	7	. .	. .	. .	14.3	28.2	. .	. .	50 14.13	53.67	+0.01	.	2	10.26	10 14.66	21.77	−0.56	49 20.47	39 16.99
20	10	. .	. .	45.3	. .	. .	. .	. .	52 58.86	53.70	+0.01	.	1	6.51	3 27.24	21.28	+0.09	52 5.17	26 32 28.43
21	9	. .	38.9	. .	. .	. .	. .	. .	54 7.16	53.72	−0.01	.	10	5.30	46 42.40	21.10	−4.16	53 13.43	27 15 47.66
22	8	17.6	31.9	46.0	. .	. .	. .	. .	55 59.95	53.74	0.00	.	6	6.39	27 18.60	20.74	2.22	55 6.21	26 56 21.56
23	10	. .	. .	58.6	. .	. .	. .	. .	57 12.61	53.75	−0.01	.	7	9.51	33 55.40	20.52	2.87	56 18.85	27 2 58.79
24	9	. .	. .	. .	11.8	25.6	. .	. .	3 58 11.60	−53.76	0.00	.	5	9.26	−14 43.50	−20.35	−0.98	3 57 17.84	−26 43 44.83

ZONE 158. JANUARY 22. K. BELT, −23° 46′. D₀=−23° 20′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	4.2	. .	. .	5 55 50.56	−54.65	−0.01	.	7	8.57	−33 28.18	− 3.64	−2.68	5 54 55.90	−23 54 14.50
2	9	. .	. .	. .	. .	20.5	. .	. .	5 57 20.35	54.65	0.00	.	6	11.31	29 45.83	3.91	2.38	56 25.90	23 50 32.12
3	7	. .	. .	15.4	29.8	. .	. .	. .	6 0 29.47	54.67	−0.03	.	10	13.1	50 29.80	4.62	4.07	5 59 34.77	24 11 18.49
4	8	. .	. .	6.8	20.1	. .	. .	. .	1 20.04	54.68	+0.02	.	2	11.47	10 55.50	4.79	0.87	6 0 25.38	23 31 41.16
5	9	. .	. .	. .	. .	3.3	. .	. .	1 49.54	54.68	0.02	.	2	8.11	9 6.58	4.89	0.73	0 54.88	29 52.20
6	9	. .	. .	. .	. .	52.2	. .	19.4	2 38.33	54.68	+0.01	.	3	10.43	15 22.33	5.06	1.23	1 43.66	36 8.62
7	9	. .	. .	. .	. .	. .	56.9	. .	3 29.71	54.69	0.00	.	5	9.7	24 32.12	5.25	1.96	2 35.02	45 19.33
8	9	. .	. .	. .	. .	. .	. .	48.8	4 7.54	54.69	+0.01	.	3	3.36	11 47.02	5.38	0.95	3 12.86	32 33.35
9	8	. .	46.3	0.2	. .	. .	. .	. .	6 13.67	54.70	0.00	.	5	8.43	24 20.02	5.82	1.94	5 18.97	45 7.78
10	9	. .	57.2	10.8	. .	. .	. .	. .	7 24.29	54.71	+0.01	.	3	4.2	12 0.13	6.07	0.96	6 29.59	32 47.16
11	7	46.9	0.9	14.8	. .	. .	. .	. .	8 28.28	54.71	0.00	.	6	9.43	28 51.37	6.30	2.31	7 33.57	49 39.98
12	9	. .	49.3	. .	. .	. .	. .	. .	9 16.60	54.72	+0.01	.	4	11.5	20 32.42	6.47	1.64	8 21.89	23 41 20.53
13	10	. .	. .	. .	36.9	. .	. .	. .	9 36.75	54.72	−0.02	.	9	6.58	42 25.87	6.54	3.41	8 42.01	24 3 15.82
14	7.8	14.6	28.3	. .	. .	. .	. .	. .	11 55.88	54.73	−0.02	.	9	3.9	40 30.40	7.03	3.25	11 1.13	24 1 20.68
15	9	. .	. .	. .	. .	. .	23.2	. .	11 55.96	54.73	+0.01	.	7	8.29	33 14.06	7.03	2.66	11 1.24	23 54 3.75
16	8	. .	16.8	30.7	. .	. .	. .	. .	13 43.99	54.73	+0.02	.	2	5.29	7 44.89	7.41	0.61	12 49.28	28 32.91
17	9	3.8	17.6	. .	. .	. .	. .	. .	14 44.96	54.74	0.00	.	5	4.20	22 7.40	7.62	1.77	13 50.22	42 56.79
18	7	. .	49.6	3.2	. .	. .	. .	. .	15 16.70	54.74	+0.01	.	3	6.54	13 26.86	7.75	1.07	14 21.97	34 15.68
19	7.8	. .	37.9	51.8	. .	. .	. .	. .	17 5.12	54.75	+0.02	.	2	10.47	10 25.25	8.14	0.83	16 10.39	23 31 14.22
20	9	. .	3.2	16.9	. .	. .	. .	. .	19 30.71	54.76	−0.02	.	9	10.15	44 5.21	8.65	3.55	18 35.93	24 4 57.41
21	9	. .	. .	. .	. .	18.4	. .	. .	6 20 4.79	−54.76	−0.02	.	9	3.52	−40 52.08	− 8.77	−3.29	6 19 10.01	−24 1 44.14

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.
Jan. 22, 6	− 60.25	g 0.051			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(157) 1–14. Found instrument insecurely clamped; declination of stars consequently doubtful. Clamped firmly.
(157) 5. Transit observations discordant; $23^s.5$ used instead of $20^s.5$.
(157) 17. Hor. thread assumed as 7 instead of 8.
(157) 18. Minutes assumed as 50 instead of 49.
(157) 24. Hor. thread assumed as 3 instead of 5.
(158) 2. Transit over T. IV assumed as recorded over T. V.

ZONE 158. JANUARY 22. K. BELT, −23° 46′. $D_0 = -23° 20′ 40″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	9	. .	23.9	37.5	. .	. .	. .	. .	6 21 51.30	−54.77	−0.01	.	8	10.4	−39 0.67	− 9.16	−3.14	6 20 56.52	−23 59 52.97
23	9	. .	. .	. .	. .	6.8	. .	. .	21 53.22	54.77	−0.02	.	10	8.40	48 18.21	9.16	3.90	20 58.43	24 9 11.27
24	9	. .	. .	. .	. .	39.3	. .	. .	22 25.59	54.77	0.00	.	4	12.42	21 21.33	9.28	1.71	21 30.82	23 42 12.32
25	9	26.6	40.4	. .	. .	. .	. .	. .	24 7.86	54.78	−0.01	.	7	6.32	32 15.07	9.65	2.59	23 13.07	53 7.31
26	10	. .	. .	. .	. .	. .	17.1	. .	23 49.88	54.78	0.01	.	7	7.45	32 51.87	9.58	2.64	22 55.09	23 53 44.09
27	9	. .	. .	53.3	. .	. .	. .	. .	25 7.07	54.79	−0.02	.	9	5.34	41 43.52	9.86	3.36	24 12.26	24 2 36.74
28	10	. .	. .	39.9	. .	. .	. .	. .	25 53.43	54.79	0.00	.	5	11.12	25 35.15	10.03	2.05	24 58.64	23 46 27.23
29	9	. .	. .	. .	20.1	. .	. .	. .	26 19.95	54.79	+0.01	.	3	9.56	14 58.63	10.12	1.20	26 25.17	35 49.95
30	10	. .	. .	3.8	. .	. .	. .	. .	27 17.13	54.80	0.02	.	2	11.13	10 38.35	10.34	0.84	26 22.35	31 29.53
31	8.9	. .	. .	44.6	58.0	. .	. .	. .	27 57.94	54.80	+0.01	.	4	5.26	17 41.48	10.48	1.41	27 3.15	23 38 33.37
32	9	. .	. .	. .	. .	. .	38.8	. .	28 11.52	54.80	−0.02	.	10	3.49	45 51.47	10.53	3.70	27 16.70	24 6 45.70
33	9	. .	. .	. .	. .	17.9	. .	. .	29 4.21	54.80	0.00	.	5	9.38	24 47.75	10.72	1.98	28 9.40	23 45 40.45
34	8	6.2	20.5	. .	. .	. .	. .	. .	30 47.77	54.80	−0.02	.	8	10.10	39 3.69	11.09	3.14	29 52.95	59 57.92
35	9	. .	. .	35.7	. .	. .	. .	. .	32 49.03	54.81	+0.02	.	2	11.3	10 33.31	11.53	1.84	31 54.24	31 25.68
36	7	. .	. .	. .	. .	16.8	30.2	. .	33 3.06	54.82	0.02	.	1	12.27	6 16.66	11.58	0.49	32 8.26	27 8.73
37	9.10	. .	. .	. .	1.2	. .	. .	. .	34 1.05	54.82	0.01	.	4	9.59	19 59.14	11.79	1.60	33 6.24	40 52.53
38	6.7	. .	. .	. .	. .	30.3	. .	. .	34 16.56	54.82	0.01	.	3	5.51	12 55.08	11.85	1.02	33 21.75	33 47.95
39	9	. .	. .	. .	. .	. .	. .	17.5	34 36.26	54.82	+0.01	.	3	6.42	13 20.81	11.92	1.05	33 41.45	23 34 13.78
40	9	8.3	. .	. .	. .	. .	. .	. .	36 49.73	54.83	−0.02	.	9	12.13	45 4.70	12.40	3.64	35 54.88	24 6 0.74
41	9	. .	38.9	. .	. .	. .	. .	. .	37 6.41	54.83	−0.02	.	9	11.11	44 33.44	12.46	3.60	36 11.56	24 5 29.50
42	10	. .	. .	. .	. .	19.4	. .	. .	37 5.74	54.83	0.00	.	6	9.59	28 59.44	12.46	2.32	36 10.91	23 49 54.22
43	9	. .	. .	. .	. .	. .	2.4	. .	37 35.22	54.83	0.00	.	4	12.31	21 15.78	12.57	1.70	36 44.39	42 10.05
44	9	. .	. .	. .	. .	38.6	. .	. .	38 24.88	54.84	+0.01	.	3	14.1	17 2.15	12.74	1.34	37 30.05	37 56.23
45	8	. .	. .	20.2	. .	. .	. .	. .	39 33.68	54.84	0.00	.	4	13.21	21 40.98	12.99	1.74	38 38.84	23 42 35.71
46	9	. .	. .	6.2	. .	. .	. .	. .	40 19.95	54.84	−0.02	.	8	13.47	40 53.10	13.16	3.29	39 25.09	24 1 49.55
47	9	. .	52.4	. .	. .	. .	. .	. .	41 19.86	54.84	0.01	.	8	8.33	38 14.78	13.38	3.07	40 24.01	23 59 11.23
48	9	36.2	. .	. .	. .	. .	. .	. .	42 17.52	54.85	−0.01	.	7	9.38	33 31.60	13.59	2.69	41 22.68	54 27.88
49	10	. .	. .	. .	15.8	. .	. .	. .	42 15.65	54.85	+0.01	.	4	11.53	20 56.62	13.59	1.67	41 20.81	41 51.88
50	8	38.2	. .	. .	. .	. .	. .	. .	44 19.56	54.86	−0.02	.	8	7.10	37 32.92	14.03	3.02	43 24.68	58 29.97
51	6.7	. .	. .	. .	25.5	. .	. .	. .	44 25.35	54.85	−0.01	.	7	9.2	33 30.70	14.05	2.69	43 30.49	54 27.44
52	9	. .	. .	. .	. .	. .	39.8	. .	45 12.67	54.86	+0.02	.	2	6.46	8 23.73	14.22	0.66	44 17.83	29 18.61
53	9	. .	. .	. .	. .	18.4	. .	. .	46 4.63	54.86	0.02	.	2	4.45	7 22.71	14.42	0.57	45 9.79	28 17.70
54	8.7	. .	. .	. .	. .	. .	48.4	. .	46 21.23	54.86	+0.01	.	4	3.30	16 42.99	14.47	1.33	45 26.38	37 38.79
55	8	. .	. .	40.8	. .	. .	. .	. .	47 54.52	54.86	−0.01	.	8	8.26	38 11.25	14.81	3.08	46 59.65	59 9.14
56	9	. .	. .	. .	. .	10.3	. .	. .	47 56.66	54.86	0.01	.	7	12.24	35 12.55	14.81	2.84	47 1.79	23 56 10.20
57	5.6	. .	. .	. .	49.4	. .	. .	. .	48 49.25	54.87	−0.02	.	8	10.11	39 4.19	15.00	3.16	47 54.36	24 0 2.35
58	8	. .	. .	. .	. .	. .	20.1	. .	48 52.91	54.87	0.00	.	5	7.25	23 40.68	15.02	1.90	47 58.04	23 44 37.60
59	9	. .	. .	. .	. .	. .	53.2	. .	49 25.92	54.87	−0.02	.	10	5.58	46 56.51	15.14	3.77	48 31.03	24 7 55.42
60	9	2.0	15.9	. .	. .	. .	. .	. .	51 43.12	54.88	+0.01	.	3	4.57	12 27.86	15.64	0.99	50 48.25	23 33 24.49
61	9	. .	. .	. .	. .	. .	53.2	. .	51 26.01	54.88	0.00	.	5	10.43	25 20.53	15.59	2.02	50 31.13	23 46 18.14
62	9	. .	. .	43.4	. .	. .	. .	. .	52 57.21	54.88	−0.02	.	9	12.40	45 48.58	15.92	3.70	53 2.31	24 6 48.21
63	9	. .	. .	. .	. .	. .	. .	56.6	53 14.43	54.88	+0.01	.	4	9.50	19 54.60	15.97	1.59	52 19.56	23 40 52.16
64	9	. .	. .	. .	. .	57.6	. .	. .	54 43.89	54.88	+0.01	.	4	9.49	19 54.10	16.30	1.59	53 49.02	23 40 51.99
65	9	. .	. .	. .	. .	. .	. .	57.3	55 16.45	54.89	−0.02	.	9	9 57	43 56.13	16.43	3.55	54 21.54	24 4 56.11
66	9	. .	15.2	. .	. .	. .	. .	. .	57 42.68	54.89	−0.02	.	8	12.10	40 4.19	16.96	3.24	56 47.77	24 1 4.39
67	4.5	. .	. .	. .	. .	54.3	. .	. .	57 40.57	54.89	+0.01	.	3	12.10	16 6.19	16.96	1.28	56 45.69	23 37 4.43
68	9	. .	. .	. .	. .	39.7	. .	. .	6 58 26.10	54.90	−0.02	.	9	11.16	44 35.97	17.11	3.61	6 57 31.18	24 5 36.69
69	7.8	20.2	34.2	. .	. .	. .	. .	. .	7 1 1.40	54.90	+0.01	.	3	11.15	15 38.46	17.68	1.24	7 0 6.51	23 36 37.38
70	9	17.2	. .	. .	. .	. .	. .	. .	7 2 58.58	−54.90	−0.02	.	8	11.50	−39 54.11	−18.11	−3.22	7 2 3.66	−24 0 55.44

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(158) 62. Minutes assumed as 53 instead of 52, and Micrometer reading assumed as $13^r.40$ instead of $12^r.40$.

ZONE 158. JANUARY 22. K. BELT, −23° 46′. D_0 = −23° 20′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
71	8.9	. .	. .	53.1	. .	. .	. .	. .	7 3 6.70	−54.91	0.00	.	6	11.4	−29 32.22	−18.14	−2.36	7 2 11.79	−23 50 32.72
72	7	. .	. .	. .	28.9	. .	. .	. .	3 28.75	54.91	0.00	.	6	6.54	27 26.16	18.22	2.19	2 33.84	48 26.57
73	9	. .	. .	8.8	. .	. .	. .	. .	4 22.27	54.91	0.00	.	5	2.23	21 8.40	18.42	1.69	3 27.36	23 42 8.51
74	8	. .	. .	. .	. .	. .	. .	55.5	4 14.65	54.91	−0.02	.	9	8.28	43 11.25	18.39	3.49	3 19.72	24 4 13.13
75	9	. .	. .	. .	. .	. .	33.7	. .	5 6.43	54.91	−0.02	.	9	12.38	45 17.31	18.59	3.67	4 11.50	24 6 19.57
76	9	. .	. .	. .	12.3	. .	. .	. .	6 12.15	54.91	0.00	.	5	5.7	22 31.10	18.83	1.80	5 17.24	23 43 31.73
77	8.9	2.2	15.8	. .	. .	. .	. .	. .	7 43.41	54.92	−0.01	.	8	7.34	37 45.03	19.16	3.04	6 48.48	58 47.23
78	8.9	. .	. .	. .	57.6	. .	. .	. .	7 57.45	54.92	0.01	.	7	12.45	35 23.14	19.22	2.85	7 2.52	23 56 25.21
79	9	53.7	. .	. .	. .	. .	. .	. .	9 35.13	54.92	−0.02	.	9	12.13	45 4.70	19.58	3.65	8 40.19	24 6 7.93
80	9	. .	43.2	. .	. .	. .	. .	. .	10 10.37	54.92	+0.02	.	1	11.37	5 51.46	19.71	0.45	9 15.47	23 26 51.62
81	8.7	. .	. .	11.4	. .	. .	. .	. .	10 24.76	54.92	+0.01	.	2	15.27	7 47.41	19.76	0.60	9 29.85	28 47.77
82	9	. .	. .	. .	27.8	. .	. .	. .	11 27.65	54.92	0.00	.	6	9.32	28 45.83	19.99	2.31	10 32.73	23 49 48.13
83	9	. .	. .	. .	. .	. .	16.8	. .	11 49.53	54.92	−0.02	.	9	10.24	44 9.75	20.07	3.57	10 54.59	24 5 13.39
84	8.9	54.2	. .	. .	. .	. .	. .	. .	13 35.28	54.93	+0.02	.	2	8.21	9 11.62	20.47	0.72	12 40.37	23 30 12.81
85	9	48.4	. .	. .	. .	. .	. .	. .	14 29.65	54.93	0.00	.	6	5.3	26 30.18	20.67	2.12	13 34.72	47 32.97
86	9	. .	16.7	. .	. .	. .	. .	. .	14 44.08	54.93	0.00	.	6	7.9	27 33.72	20.72	2.21	13 49.15	23 48 36.65
87	9	. .	. .	. .	. .	55.8	. .	. .	14 42.21	54.93	−0.02	.	10	7.3	47 29.29	20.71	3.84	13 47.26	24 8 33.84
88	7.8	38.7	. .	. .	. .	. .	. .	. .	16 20.04	54.93	−0.01	.	8	4.10	36 2.16	21.08	2.90	15 25.10	23 57 6.14
89	9	. .	20.6	. .	. .	. .	. .	. .	16 47.93	54.93	0.00	.	5	8.55	24 26.07	21.18	1.95	15 53.00	45 29.20
90	9	. .	. .	. .	. .	. .	56.4	. .	16 29.26	54.93	+0.02	.	2	9.31	9 46.92	21.11	0.75	15 34.35	30 48.78
91	9	. .	. .	38.9	. .	. .	. .	. .	17 52.53	54.94	−0.01	.	7	5.5	31 31.19	21.42	2.52	16 57.58	52 35.13
92	9	. .	. .	. .	3.8	. .	. .	. .	18 3.65	54.94	+0.01	.	4	5.5	17 30.89	21.46	1.39	17 8.72	38 33.74
93	9	. .	. .	. .	31.6	. .	. .	. .	18 31.45	54.94	+0.01	.	4	5.20	17 38.45	21.56	1.40	17 36.52	23 38 41.41
94	8	. .	10.7	. .	. .	. .	. .	. .	19 38.23	54.94	−0.02	.	10	6.13	47 4.08	21.80	3.82	18 43.27	24 8 9.70
95	9	. .	. .	. .	. .	50.9	. .	. .	19 37.16	54.94	+0.02	.	3	3.14	11 35.92	21.80	0.91	18 42.24	23 32 38.63
96	8	. .	49.4	. .	. .	. .	. .	. .	21 16.55	54.94	+0.02	.	1	7.44	3 53.97	22.7	0.28	20 21.63	23 24 56.42
97	9	. .	. .	. .	. .	32.6	. .	. .	21 19.02	54.94	−0.03	.	10	9.56	48 56.53	22.18	3.97	20 24.05	24 10 2.68
98	9	. .	. .	. .	. .	13.7	. .	. .	21 59.98	54.94	+0.01	.	4	4.59	17 27.87	22.33	1.39	21 5.05	23 38 31.59
99	9	. .	. .	. .	. .	. .	. .	37.2	22 56.19	54.94	−0.01	.	7	3.58	30 57.40	22.53	2.48	22 1.24	52 2.41
100	9	. .	. .	. .	. .	12.9	. .	. .	23 59.17	54.94	+0.01	.	3	11.52	15 57.12	22.76	1.27	23 4.24	37 1.15
101	9	. .	. .	. .	. .	. .	. .	4.2	24 23.05	54.94	0.01	.	4	11.21	20 40.48	22.85	1.66	23 28.12	41 44.99
102	9	. .	. .	. .	50.0	. .	. .	. .	25 49.85	54.95	+0.02	.	2	10.27	10 15.16	23.15	0.79	24 54.92	31 19.10
103	9	. .	33.3	. .	. .	. .	. .	. .	26 0.62	54.95	0.00	.	5	4.50	22 22.53	23.20	1.79	25 5.67	43 27.52
104	9	. .	10.5	. .	. .	. .	. .	. .	27 37.76	54.95	+0.01	.	3	11.41	15 51.57	23.55	1.26	26 42.82	36 56.38
105	9	. .	. .	57.6	. .	. .	. .	. .	28 11.32	54.95	−0.01	.	8	9.29	38 43.01	23.68	3.13	27 16.36	59 49.82
106	9	. .	. .	. .	. .	37.8	. .	. .	28 24.06	54.95	+0.01	.	3	6.34	13 16.78	23.72	1.04	27 29.12	34 21.54
107	9	. .	22.6	. .	. .	. .	. .	. .	30 49.80	54.95	0.02	.	2	8.54	9 28.27	24.24	0.73	29 54.87	30 33.24
108	9	. .	7.6	. .	. .	. .	. .	. .	31 34.90	54.95	+0.01	.	4	9.29	19 44.01	24.40	1.58	30 39.96	40 49.99
109	9	. .	. .	. .	. .	. .	46.8	. .	31 19.61	54.95	0.00	.	5	11.9	25 33.64	24.34	2.05	30 24.66	46 40.03
110	8.9	. .	. .	. .	. .	. .	. .	14.3	31 33.37	54.95	−0.01	.	8	5.51	36 53.08	24.40	2.98	30 38.41	58 0.46
111	8	25.8	. .	. .	. .	. .	. .	. .	34 7.10	54.95	−0.01	.	7	6.29	32 13.55	24.93	2.58	33 12.14	53 21.06
112	9	. .	58.2	. .	. .	. .	. .	. .	34 25.49	54.95	+0.01	.	4	7.36	18 47.04	24.99	1.50	33 30.55	39 53.53
113	8.9	. .	. .	. .	23.2	. .	. .	. .	34 23.05	54.95	+0.02	.	2	10.29	10 16.17	24.99	0.79	33 28.12	31 21.95
114	8	. .	. .	12.7	. .	. .	. .	. .	35 26.37	54.96	−0.01	.	7	11.18	34 39.27	25.20	2.79	34 31.40	55 47.26
115	9	. .	. .	. .	. .	. .	50.2	. .	35 23.01	54.96	0.00	.	5	7.3	23 29.59	25.19	1.88	34 28.05	44 36.66
116	9	. .	. .	. .	. .	. .	. .	31.2	35 50.16	54.96	0.00	.	6	8.20	28 9.52	25.30	2.26	34 55.20	49 17.08
117	9	. .	. .	. .	. .	55.3	. .	. .	36 41.61	54.96	0.00	.	5	9.42	24 49.77	25.48	1.98	35 46.65	23 45 57.23
118	9	. .	. .	. .	. .	28.3	. .	. .	37 14.72	54.96	−0.03	.	10	8.7	48 1.57	25.58	3.89	36 19.73	24 9 11.04
119	9	. .	. .	20.4	. .	. .	. .	. .	7 38 33.96	−54.96	0.00	.	6	6.15	−27 6.49	−25.86	−2.17	7 37 39.00	−23 48 14.52

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(158) 81. Micrometer thread assumed as 1 instead of 2.

ZONE 158. JANUARY 22. K. BELT, −23° 46′. D₀=−23° 20′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
120	9	. .	. .	. .	. .	5.9	. .	. .	7 38 52.15	−54.96	+0.02	.	3	1.52	−10 54.57	−25.94	−0.84	7 37 57.21	−23 32 1.35
121	9	. .	. .	. .	. .	. .	. .	40.3	38 59.02	54.96	+0.02	.	3	0.58	10 27.34	25.96	0.81	38 4.08	31 34.11
122	7.8	. .	. .	. .	26.9	. .	. .	. .	40 26.75	54.96	−0.01	.	7	7.11	32 34.72	26.26	2.61	39 31.78	53 43.59
123	9	. .	. .	. .	7.7	. .	. .	. .	41 7.55	54.96	0.00	.	6	4.15	26 5.98	26.40	2.09	40 12.59	23 47 14.47
124	9	. .	. .	. .	. .	. .	41.0	. .	41 13.72	54.96	−0.02	.	10	4.47	46 20.72	26.42	3.75	40 18.74	24 7 30.89
125	9	. .	. .	20.2	. .	. .	. .	. .	7 42 33.83	−54.96	−0.01	.	7	6.43	−32 20.61	−26.72	−2.58	7 41 38.86	−23 53 29.91

ZONE 159. JANUARY 24. B. BELT, −25° 1′. D₀=−24° 38′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	24.	38.2	. .	. .	. .	7 42 37.98	−57.02	+0.02	V.	9	5.01	−41 26.83	− 0.89	−4.50	7 41 40.98	−25 19 32.22
2	9	. .	. .	. .	. .	. .	35.	49.	48 7.59	57.02	+0.02	VII.	8	12.02	39 59.80	2.70	4.36	48 10.59	18 6.86
3	8	. .	. .	. .	17.	30.5	. .	. .	51 16.76	57.02	0.00	VII.	5	5.57	22 55.95	3.74	2.80	50 19.74	1 2.49
4	9	. .	. .	. .	. .	53.5	7.	21.	52 39.62	57.02	+0.01	VII.	7	12.35	34 47.49	4.21	3.87	51 42.61	25 12 55.57
5	9	. .	32.	45.2	. .	. .	. .	. .	54 59.19	57.02	−0.01	IV.	4	11.8	20 23.93	4.98	2.59	54 2.16	24 58 41.50
6	7	. .	. .	. .	52.5	6.	. .	. .	56 52.26	57.02	0.00	VI.	5	4.10	22 2.20	5.57	2.72	54 55.24	25 0 10.49
7	10	. .	. .	9.5	23.	37.	. .	. .	58 23.08	57.02	0.00	VI.	6	4.30	26 13.39	6.11	3.11	57 26.06	4 22.61
8	6	. .	. .	. .	. .	25.	38.2	52.	7 59 10.87	57.02	+0.01	VII.	8	9.4	38 30.05	6.37	4.24	58 13.86	25 16 40.66
9	8	. .	. .	. .	. .	. .	. .	51.	8 0 9.29	57.02	−0.02	VII.	2	9.26	9 44.04	6.69	1.61	7 59 12.25	24 47 52.34
10	10	. .	. .	. .	. .	. .	31.	45.	2 3.60	57.02	+0.02	VII.	9	7.16	42 34.59	7.32	4.61	8 1 6.60	25 20 46.52
11	8	. .	. .	. .	. .	. .	. .	28.	2 46.76	57.02	0.02	VII.	9	11.26	44 40.65	7.57	4.82	1 49.76	22 53.04
12	9	. .	. .	. .	31.	44.	. .	. .	4 30.57	57.02	0.02	VI.	10	5.2	46 28.12	8.12	4.99	3 33.57	24 41.23
13	10	. .	. .	27.	41.	. .	. .	. .	8 40.85	57.01	+0.01	V.	8	6.52	37 23.81	9.48	4.14	7 43.85	25 15 37.43
14	8	56.	10.	. .	. .	. .	. .	. .	10 37.47	57.01	−0.02	III.	2	6.41	8 21.16	10.11	1.50	9 40.44	24 46 32.77
15	9	. .	. .	. .	. .	. .	5.	19.5	10 37.68	57.01	0.03	VII.	1	12.11	1 5.69	10.11	0.84	9 40.64	39 16.64
16	9	. .	. .	. .	. .	. .	56.	10.5	12 28.72	57.01	0.01	VII.	3	11.32	15 46.68	10.71	2.16	11 31.70	53 59.55
17	8	. .	. .	. .	. .	. .	42.	56.3	14 14.64	57.01	0.01	VII.	4	8.12	19 4.83	11.35	2.46	13 17.62	57 18.64
18	9	. .	. .	. .	55.5	9.5	. .	. .	15 55.51	57.00	−0.01	VI.	4	9.49	19 53.94	11.82	2.53	14 58.50	24 58 8.29
19	10	. .	. .	. .	. .	. .	12.5	27.	16 45.30	57.00	+0.01	VII.	7	4.21	31 8.64	12.12	3.56	15 48.31	25 9 24.32
20	10	. .	. .	. .	. .	22.	36.	. .	18 8.35	57.00	−0.01	VII.	4	7.58	18 57.76	12.51	2.45	17 11.34	24 57 12.72
21	10	. .	8.2	22.	36.	. .	. .	. .	20 35.87	57.00	+0.01	IV.	8	5.35	36 45.02	13.36	4.08	19 38.88	25 15 2.46
22	10	. .	13.	27.5	. .	. .	. .	. .	22 40.64	56.99	−0.02	IV.	1	8.59	4 31.79	13.99	1.14	21 43.63	24 42 46.92
23	10	. .	28.5	42.	. .	. .	. .	. .	24 55.72	56.99	−0.02	IV.	2	11.34	10 48.95	14.78	1.70	23 58.71	24 49 5.43
24	9	. .	. .	. .	0.	14.	. .	. .	26 0.04	56.99	+0.01	VI.	7	7.5	32 31.54	15.12	3.69	25 3.06	25 10 50.35
25	10	. .	. .	56.	10.	. .	. .	. .	8 28 9.84	−56.98	+0.01	IV.	8	3.47	−35 50.56	−15.82	−3.99	8 27 12.87	−25 14 10.37

ZONE 160. JANUARY 29. B. BELT, −25° 38′. D₀=−25° 14′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	. .	. .	. .	59.	11.	. .	. .	5 44 11.61	−61.11	−0.01	X.	7	12.50	−35 29.26	−14.31	−2.99	5 44 10.49	−25 49 47.1
2	9	. .	. .	. .	. .	. .	. .	47.	46 5.35	61.12	0.00	IX.	6	11.42	29 50.38	17.08	2.45	45 4.23	44 9.9
3	7	. .	. .	. .	. .	. .	. .	44.5	47 3.03	61.13	−0.02	VII.	9	11.31	44 43.17	18.21	3.84	46 1.88	59 5.2
4	9	. .	. .	1.5	15.	. .	. .	. .	49 15.00	61.14	0.00	IV.	4	8.12	19 5.19	20.84	1.47	48 13.86	33 27.5
5	9	. .	. .	. .	. .	. .	13.	27.3	49 45.43	61.14	+0.01	VII.	3	8.00	13 59.78	21.44	0.99	48 44.30	28 22.2
6	10	. .	. .	33.2	47.	. .	. .	. .	53 46.78	61.16	0.01	V.	2	8.3	9 2.51	26.27	0.55	52 45.63	23 29.3
7	9	. .	. .	56.	10.	. .	. .	. .	55 9.70	61.18	0.01	IV.	3	5.33	12 46.01	27.93	0.89	54 8.53	27 14.8
8	10	. .	. .	. .	. .	. .	15.4	. .	55 47.81	61.18	+0.01	IV.	4	5.33	17 45.01	28.69	1.34	54 46.64	32 15.0
9	9	. .	. .	. .	. .	. .	. .	47.5	5 57 5.75	61.19	0.00	VII.	5	7.22	23 38.81	30.25	1.87	5 56 4.56	38 10.9
10	9	. .	5.	19.	. .	. .	. .	. .	6 1 32.90	−61.22	−0.01	IV.	8	9.28	−38 42.50	−35.58	−3.28	6 0 31.67	−25 53 21.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Jan. 24,	6	− 62.14	g 0.047	+ 1.35	− 1.47	+ 0.01
Jan. 29,	6	− 66.67	g 0.038			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(159) 2. Minutes assumed as 49 instead of 48.
(159) 4. Micrometer reading assumed as 11r.35 instead of 12r.35, to agree with Arg. Z. 360, 222, and Arg. Z. 362, 159.
(159) 6. Minutes assumed as 55 instead of 56.
(160) 1. Transits over T.'s III and IV assumed to have been recorded over T.'s IV and V, and minutes as 45 instead of 44.

ZONE 160. JANUARY 29. B. BELT, −25° 38′. D₀ = −25° 14′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
11	10	. .	. .	. .	. .	. .	. .	14.	6 1 32.39	−61.22	−0.01	VII.	7	8.18	−33 8.15	−35.56	−2.76	6 0 31.16	−25 47 46.5
12	8	. .	. .	. .	. .	18.	31.5	. .	3 3.99	61.23	+0.02	VII.	2	8.49	9 25.39	37.40	0.59	2 2.78	24 3.4
13	9	. .	. .	. .	53.	. .	. .	. .	4 52.85	61.23	0.00	IV.	4	13.9	21 34.94	39.58	1.69	3 51.62	36 16.2
14	9	. .	. .	. .	. .	. .	. .	0.	5 18.23	61.24	0.00	VII.	4	13.35	21 47.69	40.09	1.71	4 16.99	36 29.5
15	10	. .	. .	. .	. .	. .	27.	41.3	7 59.50	61.25	0.00	VII.	6	5.29	26 42.93	43.33	2.16	5 58.25	41 28.4
16	9	8.	22.	. .	. .	. .	. .	. .	9 49.91	61.26	−0.01	III.	8	3.2	35 27.83	45.53	2.99	8 48.64	50 16.4
17	10	. .	22.	36.	. .	. .	. .	. .	6 11 49.59	−61.27	+0.01	IV.	3	6.32	−13 15.77	−47.90	−0.93	6 10 48.33	−25 28 4.6

ZONE 161. JANUARY 29. B. BELT, −25° 38′. D₀ = −25° 14′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	. .	43.	. .	10.	. .	. .	7 15 56.34	−61.52	+0.01	VI.	4	4.9	−22 1.70	−26.67	−1.54	7 14 54.83	−25 36 50.01
2	7	. .	. .	. .	35.	. .	. .	. .	17 34.85	61.52	0.00	IV.	6	9.37	28 48.35	26.94	2.36	16 33.33	43 37.65
3	7	. .	. .	. .	. .	. .	. .	31.	17 49.14	61.52	+0.01	VII.	3	8.21	14 10.36	27.11	1.00	17 47.63	28 58.47
4	9	. .	49.	. .	17.	. .	. .	. .	20 30.85	61.52	−0.01	IV.	7	4.41	31 19.09	27.33	2.61	19 29.32	46 9.03
5	10	. .	6.	20.	. .	. .	. .	. .	22 33.94	61.53	0.02	IV.	9	4.38	41 15.28	27.68	3.55	21 32.39	56 6.51
6	7	37.5	52.	. .	. .	. .	. .	. .	29 19.63	61.54	−0.01	III.	7	7.28	32 43.25	28.71	2.73	28 18.08	47 34.69
7	10	. .	. .	. .	. .	48.5	. .	16.	29 34.47	61.54	0.00	VII.	6	7.11	27 34.36	28.76	2.25	28 32.93	42 25.37
8	7	. .	. .	16.	30.3	44.	. .	. .	33 30.11	61.54	−0.02	VI.	9	9.42	43 48.41	29.35	3.79	32 28.55	58 41.55
9	7	. .	. .	24.	38.2	. .	. .	. .	37 38.04	61.55	0.02	IV.	10	1.14	44 33.31	29.98	3.86	36 36.47	25 59 27.15
10	9	. .	47.	1.	15.	. .	. .	. .	41 14.94	61.55	−0.02	IV.	10	5.25	46 39.87	30.53	4.05	40 13.37	26 1 34.45
11	6	. .	25.	39.	53.	. .	. .	. .	42 52.73	61.55	+0.01	IV.	4	8.275	19 12.75	30.78	1.45	41 51.19	25 34 4.98
12	10	. .	. .	. .	. .	. .	7.	21.2	43 39.42	61.55	0.00	VII.	5	6.33	23 14.11	30.90	1.84	42 37.87	38 6.85
13	7	. .	. .	23.4	36.5	. .	. .	. .	48 36.84	61.56	−0.02	IV.	8	7.10	37 32.92	31.66	3.20	47 35.26	52 27.78
14	8	. .	. .	. .	. .	. .	. .	39.	49 57.42	61.56	−0.01	VII.	8	3.47	35 50.20	31.86	3.04	48 55.85	50 45.10
15	9	. .	. .	. .	. .	. .	. .	46.	50 4.18	61.56	+0.01	VII.	4	5.10	17 33.05	31.88	1.31	49 2.63	32 26.24
16	10	. .	. .	14.	28.	. .	. .	. .	52 27.84	61.56	−0.01	IV.	7	6.19	32 8.51	32.24	2.69	51 26.27	47 3.44
17	10	. .	. .	31.	45.	. .	. .	. .	54 44.78	61.56	0.00	IV.	5	9.23	24 40.18	32.58	1.97	53 43.22	39 34.73
18	8	. .	35.3	49.3	. .	. .	. .	. .	57 3.02	61.56	0.00	IV.	5	8.14	24 5.40	32.93	1.92	56 1.46	39 0.25
19	9	. .	0.	14.2	. .	. .	. .	. .	7 58 27.79	61.56	+0.01	IV.	4	12.36	21 18.31	33.14	1.65	57 26.24	36 33.10
20	9	. .	59.	13.5	. .	. .	. .	. .	8 0 26.75	61.56	+0.02	IV.	1	10.54	5 29.78	33.44	0.19	7 59 25.21	20 23.41
21	9	. .	37.	51.	. .	. .	. .	. .	2 4.94	61.56	−0.02	IV.	9	6.48	42 20.83	33.69	3.66	8 1 3.36	57 18.28
22	10	. .	. .	. .	. .	. .	56.5	. .	2 28.86	61.56	0.01	VII.	7	5.15	31 35.87	33.75	2.64	1 27.29	46 32.26
23	9	. .	. .	. .	. .	5.	19.	. .	3 51.25	61.56	−0.01	VII.	7	7.32	32 44.96	33.95	2.75	2 49.68	47 41.66
24	9	30.	. .	58.	. .	. .	. .	. .	6 11.75	61.56	0.00	IV.	5	3.1	21 27.56	34.30	1.67	5 10.19	36 23.53
25	8	. .	49.	3.2	. .	. .	. .	. .	8 16.87	61.56	0.00	IV.	6	7.11	27 34.72	34.61	2.26	7 15.31	42 31.59
26	8	. .	. .	. .	22.	. .	. .	. .	9 21.85	61.56	+0.01	IV.	4	5.28	17 42.48	34.77	1.32	8 20.30	32 38.57
27	9	. .	. .	. .	. .	21.	. .	. .	10 7.12	61.56	0.00	VI.	6	5.8	26 32.54	34.89	2.14	9 5.56	41 29.57
28	7	. .	43.5	57.5	. .	. .	. .	. .	12 11.36	61.56	−0.01	IV.	7	12.37	35 19.11	35.19	2.99	11 9.79	50 17.29
29	6	. .	. .	. .	3.	. .	. .	. .	13 2.85	61.56	−0.01	.	8	7.24	37 39.98	35.31	3.22	12 1.28	52 38.51
30	10	27.	41.5	. .	. .	. .	. .	. .	15 9.03	61.55	0.00	III.	5	6.33	23 14.43	35.62	1.84	14 7.48	38 11.89
31	9	. .	. .	. .	55.	. .	. .	. .	15 54.85	61.55	−0.01	V.	8	5.7	36 30.86	35.73	3.10	14 53.29	51 29.69
32	9	. .	. .	. .	. .	. .	56.	. .	16 28.40	61.55	+0.01	VII.	4	8.6	19 1.81	35.82	1.44	15 26.86	33 59.07
33	6	. .	. .	. .	. .	45.	58.5	. .	17 31.00	61.55	−0.01	VII.	8	6.32	37 13.41	35.98	3.17	16 29.44	52 12.56
34	10	. .	. .	. .	26.	. .	. .	. .	19 12.09	61.55	0.00	IV.	5	6.42	23 19.01	36.24	1.85	18 10.54	38 17.10
35	10	. .	48.	2.	. .	. .	. .	. .	21 15.59	61.55	+0.01	IV.	3	5.23	12 40.96	36.51	0.85	20 14.05	27 38.32
36	6	. .	. .	. .	. .	47.	1.	15.	22 33.24	61.55	0.00	VII.	5	6.34	23 14.62	36.70	1.84	21 31.69	38 13.16
37	7	. .	30.	44.	. .	. .	. .	. .	24 57.64	61.55	+0.01	IV.	4	4.58	17 27.36	37.05	1.30	23 56.10	32 25.71
38	8	. .	. .	4.	18.	. .	. .	. .	8 26 17.72	−61.54	+0.01	IV.	3	11.22	−15 41.99	−37.23	−1.13	8 25 16.19	−25 30 40.35

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1848. h. m.	in.	°	°

REMARKS.

(160) 15. Minutes assumed as 6 instead of 7.
(161) 1. Hor. thread assumed as 5 instead of 4.
(161) 3. Minutes of transit assumed as 18 instead of 17.
(161) 4. Transits over T.'s I and III assumed to be recorded as over T.'s II and IV.

ZONE 161. JANUARY 29. B. BELT, −25° 38′. D₀=−25° 14′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
39	9	. .	27.	41.2	. .	. .	. .	. .	8 27 54.84	−61.54	0.00	IV.	5	11.10	−25 34.14	−37.46	−2.06	8 26 53.30	−25 40 33.66
40	9	. .	16.	30.	. .	. .	. .	. .	29 29.93	61.54	−0.02	IV.	9	9.59	43 57.14	37.72	3.82	28 28.37	58 58.68
41	7	. .	14.	27.9	. .	. .	. .	. .	31 41.86	61.54	−0.01	IV.	8	9.34	38 45.54	38.00	3.34	30 40.31	53 46.88
42	6	. .	. .	. .	29.7	43.	57.	. .	32 29.35	61.53	0.00	VII.	6	9.52	28 55.55	38.11	2.38	31 27.82	43 56.04
43	8	. .	40.	54.2	. .	. .	. .	. .	37 7.92	61.53	−0.01	IV.	7	5.9	31 33.21	38.75	2.64	36 6.38	46 34.60
44	9	. .	. .	53.	7.	. .	. .	. .	39 6.93	61.52	0.02	IV.	9	8.48	43 21.34	39.03	3.77	38 5.39	58 24.14
45	9	. .	. .	. .	. .	. .	. .	13.5	39 31.91	61.52	0.01	VII.	7	12.15	35 7.65	39.09	2.98	38 30.38	25 50 9.72
46	8	. .	. .	. .	. .	. .	30.	. .	41 2.29	61.52	−0.03	VII.	10	11.49	49 53.15	39.30	4.38	40 0.74	26 4 56.83
47	9	. .	. .	51.	5.	. .	. .	. .	43 4.76	61.51	0.00	IV.	4	13.23	21 41.99	39.58	1.67	42 3.25	25 36 43.24
48	8	38.5	52.3	6.5	. .	. .	. .	. .	45 20.14	61.51	+0.01	IV.	4	7.15	18 36.44	39.89	1.39	44 18.64	33 37.72
49	8	. .	. .	. .	11.	25.	. .	. .	46 10.97	61.51	0.00	VI.	5	7.33	23 44.56	40.00	1.88	45 9.46	38 46.44
50	10	. .	. .	59.	13.2	. .	. .	. .	48 12.79	61.50	+0.02	IV.	3	3.44	11 51.05	40.28	0.76	47 11.31	26 52.09
51	10	. .	. .	15.	29.	. .	. .	. .	50 28.79	61.50	0.00	IV.	5	11.25	25 41.70	40.59	2.07	49 27.29	40 44.36
52	9	4.	18.3	. .	. .	. .	. .	. .	52 46.02	61.49	−0.01	III.	7	4.29	31 13.00	40.90	2.61	51 44.52	25 46 16.51
53	7	. .	. .	29.	43.	56.	. .	. .	55 42.72	61.48	0.03	VI.	10	11.00	49 28.64	41.29	4.35	54 41.21	26 4 34.28
54	8	. .	. .	. .	. .	. .	. .	4.4	56 22.92	61.48	−0.02	VII.	9	10.22	44 8.38	41.38	3.85	55 21.42	25 59 13.61
55	8	. .	. .	. .	. .	. .	37.	51.2	8 58 9.40	61.48	+0.01	VII.	4	6.58	18 27.51	41.62	1.38	57 7.93	33 30.51
56	9	. .	. .	. .	30.	43.7	. .	. .	9 0 29.82	61.47	0.00	VI.	5	6.40	23 17.84	41.93	1.85	8 59 28.35	38 21.62
57	9	35.	49.4	3.	. .	. .	. .	. .	3 17.01	61.46	−0.01	IV.	7	10.11	34 5.49	42.30	2.89	9 2 15.54	49 10.68
58	8	14.	28.	. .	. .	. .	. .	. .	9 4 55.80	−61.46	0.00	III.	5	10.54	−25 26.04	−42.51	−2.04	9 3 54.34	−25 40 30.59

ZONE 162. MARCH 29. B. BELT, −25° 38′. D₀=−25° 15′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	4.	19.	32.	. .	. .	. .	. .	8 36 46.19	−40.86	−0.01	IV.	7	5.04	−31 30.69	− 4.98	−3.57	8 36 5.32	−25 46 39.2
2	8	29.	44.	57.	. .	. .	. .	. .	37 11.17	40.86	0.00	IV.	7	2.18	30 6.98	5.05	3.44	36 30.31	25 45 15.5
3	9	. .	. .	11.	25.	. .	. .	. .	40 24.97	40.87	−0.02	IV.	10	9.57	48 57.03	5.62	5.14	39 44.08	26 4 7.8
4	9	. .	. .	30.	43.5	. .	. .	. .	42 43.51	40.88	0.00	IV.	4	12.58	21 29.39	6.03	2.70	42 2.63	25 36 38.1
5	8	. .	. .	. .	. .	45.	59.	13.	43 31.31	40.88	−0.01	VII.	8	6.17	37 5.84	6.17	4.08	42 50.42	52 16.1
6	9	. .	. .	. .	. .	13.2	27.	. .	44 59.34	40.88	0.00	VII.	4	7.4	18 30.54	6.43	2.44	44 18.46	33 39.4
7	8	. .	. .	. .	. .	. .	17.4	31.5	45 49.76	40.89	0.00	VII.	5	7.25	23 40.32	6.57	2.89	45 8.87	38 49.8
8	9	28.3	43.5	56.5	. .	. .	. .	. .	48 10.73	40.89	−0.01	V.	9	5.36	41 44.49	6.99	4.48	47 29.83	25 56 56.0
9	9	. .	. .	55.3	9.	. .	. .	. .	50 9.12	40.90	−0.02	IV.	10	10.49	49 23.26	7.34	5.18	49 28.20	26 4 35.8
10	9	43.5	58.	11.2	. .	. .	. .	. .	52 25.53	40.90	0.00	IV.	7	4.19	31 8.00	7.73	3.54	51 44.63	25 46 19.3
11	7	. .	55.	7.5	21.	. .	. .	. .	55 21.80	40.91	−0.02	IV.	10	10.53	49 25.27	8.25	5.18	54 40.87	26 4 38.7
12	7	. .	. .	. .	. .	16.	29.5	43.5	56 2.01	40.91	−0.02	VII.	9	10.20	44 7.37	8.35	4.70	55 21.08	25 59 20.4
13	9	. .	. .	. .	. .	. .	. .	31.	8 57 49.19	40.92	0.00	VII.	4	6.42	18 19.45	8.67	2.42	57 8.27	33 30.5
14	10	. .	. .	55.	9.	. .	. .	. .	9 0 8.74	40.92	0.00	V.	4	6.23	18 10.18	9.07	2.41	8 59 27.82	33 21.7
15	10	. .	. .	42.5	56.2	. .	. .	. .	2 56.21	40.93	−0.01	IV.	7	10.1	34 0.45	9.56	3.80	9 2 15.27	49 13.8
16	8	. .	. .	. .	35.	49.	2.5	. .	4 34.95	40.93	0.01	V.	7	10.58	25 28.05	9.84	3.04	3 54.01	40 40.9
17	9	. .	. .	9.5	23.	. .	. .	. .	6 23.13	40.93	−0.01	IV.	8	5.12	36 33.42	10.14	4.03	5 42.19	51 47.6
18	9	. .	. .	24.5	38.	. .	. .	. .	8 37.90	40.94	+0.02	IV.	1	11.41	5 53.47	10.52	1.35	7 56.98	21 5.3
19	9	. .	. .	56.	9.6	23.5	. .	. .	13 9.58	40.95	0.00	VI.	5	6.00	22 57.67	11.30	2.82	12 28.63	38 11.8
20	6	. .	4.5	18.2	31.5	. .	. .	. .	15 31.68	40.95	+0.02	IV.	1	9.7	4 35.82	11.68	1.24	14 50.75	19 48.7
21	9	. .	57.4	11.	25.	. .	. .	. .	17 24.83	40.95	+0.01	IV.	3	12.35	16 18.80	12.00	2.25	16 43.89	31 33.1
22	10	. .	14.5	28.	41.5	. .	. .	. .	20 41.90	40.96	−0.01	IV.	8	12.55	40 26.88	12.56	4.38	20 0.93	55 43.8
23	9	. .	. .	. .	. .	. .	12.	26.	21 44.34	40.96	0.00	VII.	6	6.38	27 17.73	12.72	3.21	21 3.38	42 33.7
24	8	. .	. .	. .	. .	56.	10.	24.	23 42.33	40.96	−0.01	VII.	9	4.13	41 2.31	13.05	4.43	23 1.36	56 19.8
25	9	. .	4.	17.	. .	. .	. .	. .	9 26 31.31	−40.97	0.00	IV.	7	3.12	−30 34.21	−13.51	−3.49	9 25 50.34	−25 45 51.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Mar. 29,	7	− 45.96	l 0.015			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(162) 16. Hor. thread assumed as 5 instead of 7.
(162) 24. Double; observed the first.

ZONE 162. MARCH 29. B. BELT, −25° 38′. D_0=−25° 15′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
26	7	. .	. .	54.	7.5	. .	. .	. .	9 30 7.37	−40.97	+0.02	IV.	1	3.37	− 2 19.68	−14.11	−0.02	9 29 26.42	−25 17 33.8
27	9	. .	. .	. .	. .	16.	30.	. .	31 2.24	40.97	+0.01	VII.	2	10.5	10 3.71	14.25	1.69	30 21.28	25 19.7
28	8	. .	. .	. .	. .	. .	36.	. .	32 8.38	40.97	0.00	VII.	6	5.17	26 36.88	14.43	3.14	31 27.41	25 41 54.5
29	9	. .	. .	. .	. .	2.5	16.	30.	46 48.51	40.98	−0.02	VII.	10	7.47	47 51.12	16.78	5.05	46 7.51	26 3 13.0
30	9	. .	. .	46.	0.	14.	. .	. .	48 59.95	40.98	0.01	V.	7	10.52	34 26.13	17.13	3.85	48 18.96	25 49 47.1
31	7	. .	12.	25.3	39.5	. .	. .	. .	50 39.46	40.98	0.01	IV.	7	12.00	35 0.45	17.40	3.90	49 58.47	50 21.8
32	10	. .	. .	. .	. .	. .	45.	59.1	51 17.46	40.98	−0.01	VII.	9	9.5	38 30.54	17.49	4.11	50 36.47	53 52.2
33	9	. .	15.2	28.5	42.3	. .	. .	. .	53 42.44	40.98	0.00	IV.	5	11.3	25 30.61	17.86	3.05	53 1.46	40 51.5
34	8	. .	. .	21.	35.	. .	. .	. .	55 34.82	40.99	0.00	IV.	6	10.40	29 20.12	18.15	3.39	54 53.83	25 44 41.7
35	10	. .	. .	. .	. .	. .	41.	55.	57 13.42	40.99	−0.02	VII.	9	11.58	44 56.78	18.39	4.79	56 32.41	26 0 20.0
36	10	. .	. .	32.	46.	. .	. .	. .	9 59 45.71	40.99	+0.01	IV.	3	9.10	14 35.43	18.79	2.08	59 4.73	25 29 56.3
37	9	. .	. .	. .	. .	. .	. .	55.	10 0 13.43	40.99	−0.01	VII.	8	5.35	36 44.66	18.85	4.05	9 59 32.43	52 7.6
38	10	. .	19.	32.2	46.	. .	. .	. .	9 45.97	40.98	−0.01	IV.	8	3.15	35 34.42	20.28	3.95	10 9 4.98	50 58.7
39	9	. .	. .	54.2	7.7	. .	. .	. .	12 7.78	40.98	0.00	IV.	6	11.16	29 38.27	20.61	3.41	11 26.80	45 2.3
40	9	. .	39.3	52.4	6.0	20.2	. .	. .	15 6.26	40.98	+0.01	IV.	3	10.9	15 5.19	21.03	2.13	14 25.29	30 28.4
41	9	4.	18.3	32.	. .	. .	. .	. .	18 45.83	40.98	0.00	IV.	4	10.55	20 27.38	21.56	2.60	18 4.85	35 51.5
42	7	49.	3.2	16.5	. .	. .	. .	. .	24 30.72	40.98	0.00	IV.	6	7.10	27 34.22	22.33	3.23	23 49.74	42 59.8
43	8	47.	2.	5.2	. .	. .	. .	. .	26 29.29	40.97	−0.01	IV.	7	11.42	34 51.38	22.60	3.89	25 48.31	25 50 17.9
44	9	. .	. .	. .	. .	. .	29.	43.	27 1.43	40.97	−0.02	VII.	10	5.53	46 53.63	22.67	4.98	26 20.44	26 2 21.3
45	10	. .	. .	. .	. .	. .	. .	46.	28 4.19	40.97	+0.01	VII.	4	6.12	18 4.32	22.82	2.39	27 23.23	25 33 29.5
46	7	. .	. .	. .	41.	. .	. .	. .	29 40.85	40.97	+0.01	IV.	8	8.48	38 22.34	23.03	4.22	28 59.87	53 49.6
47	10	17.	31.	. .	. .	. .	. .	. .	32 58.72	40.97	+0.01	III.	3	11.36	15 49.02	23.45	2.20	32 17.76	25 31 14.7
48	9	. .	55.5	8.4	22.3	. .	. .	. .	34 22.67	40.97	−0.02	IV.	9	11.28	44 42.01	23.63	4.78	33 41.68	26 0 10.4
49	9	. .	32.	45.	. .	. .	. .	. .	36 59.48	40.96	0.02	IV.	9	13.2	45 29.41	23.97	4.85	36 18.50	26 0 58.2
50	8	8.	23.	36.4	. .	. .	. .	. .	39 50.42	40.96	−0.01	IV.	8	13.39	40 49.07	24.34	4.43	39 9.45	25 56 17.9
51	9	. .	25.	38.5	. .	. .	. .	. .	41 38.50	40.96	0.00	IV.	4	11.58	20 59.14	24.58	2.64	40 57.94	36 26.4
52	9	. .	45.3	58.5	12.3	. .	. .	. .	46 12.53	40.95	0.00	IV.	7	5.13	31 35.22	25.09	3.60	45 31.58	47 3.9
53	8	. .	. .	. .	. .	42.	56.	. .	47 28.25	40.95	−0.01	VII.	9	4.59	41 25.51	25.25	4.49	46 47.29	25 56 55.3
54	10	. .	. .	. .	. .	. .	. .	50.	48 8.53	40.94	0.02	VII.	10	2.29	45 10.77	25.32	4.84	47 27.57	26 0 40.9
55	9	9.5	24.4	37.4	. .	. .	. .	. .	52 51.74	40.93	0.01	IV.	9	7.00	42 26.88	25.89	4.59	52 10.80	25 57 57.4
56	8	. .	. .	35.5	49.5	3.4	. .	. .	10 55 49.49	40.93	0.02	V.	9	12.30	45 43.49	26.23	4.88	55 8.54	26 1 14.6
57	7	. .	53.3	6.2	20.1	. .	. .	. .	11 5 20.46	40.91	−0.01	IV.	9	10.9	44 2.19	27.32	4.73	4 39.54	25 59 34.2
58	9	. .	. .	20.	33.5	48.	. .	. .	6 33.72	40.91	0.00	V.	5	7.11	23 33.58	27.47	2.88	5 52.81	39 3.9
59	9	. .	. .	8.	22.	. .	. .	. .	10 21.63	40.90	+0.01	IV.	1	6.30	3 16.66	27.90	1.08	9 40.74	18 45.6
60	9	. .	23.5	36.5	51.	. .	. .	. .	11 50.83	40.90	0.00	IV.	7	4.17	31 6.99	28.06	3.56	11 9.93	46 38.6
61	9	. .	. .	20.	34.	. .	. .	. .	15 33.86	40.89	−0.01	IV.	7	11.35	34 47.85	28.48	3.89	14 52.96	50 20.2
62	8	. .	32.	45.5	. .	. .	. .	. .	21 59.38	40.87	+0.01	IV.	4	2.52	16 23.83	29.17	2.24	21 18.52	31 55.2
63	9	. .	. .	. .	. .	. .	. .	49.	22 7.20	40.87	0.00	VII.	4	8.16	14 7.84	29.18	2.03	21 26.33	29 39.0
64	6	. .	24.5	37.5	51.	. .	. .	. .	41 51.56	40.80	−0.01	IV.	8	10.43	39 20.33	31.25	4.32	41 10.75	25 54 55.9
65	9	. .	. .	24.5	38.	52.5	. .	. .	46 38.35	40.79	−0.01	V.	9	11.46	44 51.06	31.71	4.83	45 57.55	26 0 27.6
66	9	. .	8.2	21.3	35.1	. .	. .	. .	49 35.31	40.78	0.00	IV.	5	12.51	26 25.06	32.02	3.13	48 54.53	25 42 0.2
67	10	. .	. .	. .	. .	49.	3.	. .	50 35.25	40.78	0.00	VII.	5	12.20	26 9.07	32.11	3.10	49 54.47	41 44.3
68	9	. .	58.	11.5	. .	. .	. .	. .	53 25.38	40.77	+0.01	IV.	3	12.50	16 26.36	32.37	2.23	52 44.62	32 1.0
69	8	. .	. .	. .	. .	15.	. .	43.	54 1.17	40.76	0.00	VII.	5	6.16	23 5.54	32.43	2.83	53 20.41	38 40.8
70	9	. .	53.	6.	19.5	. .	. .	. .	11 59 19.88	−40.74	0.00	IV.	4	6.24	−18 10.73	−32.93	−2.38	10 58 39.14	−25 33 46.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(162) 26. Micrometer reading assumed as $4^{r}.37$ instead of $3^{r}.37$.
(162) 32. Hor. thread assumed as 8 instead of 9.
(162) 43. Transit over T. III assumed as $15^{s}.2$ instead of $5^{s}.2$.
(162) 51. Transits over T.'s III and IV assumed as recorded over T.'s II and III.
(162) 56. Micrometer reading assumed as $13^{r}.30$ instead of $12^{r}.30$.
(162) 63. Hor. thread assumed as 3 instead of 4.

ZONE 163. MAY 3. B. BELT, −25° 38′. D₀=−25° 15′ 10″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	. .	52.	5.	. .	. .	14 3 51.51	+47.15	0.00	VI.	8	9.48	−38 52.43	− 8.52	−3.24	14 4 38.66	−25 54 4.2
2	9	. .	. .	. .	. .	. .	45.	59.5	5 17.60	47.16	0.00	VII.	6	5.1	26 28.81	8.60	2.14	6 4.76	41 49.6
3	9	. .	. .	. .	. .	32.	45.	0.	14 17.93	47.22	0.00	VII.	6	3.1	25 28.30	9.06	2.05	15 5.15	25 40 49.4
4	9	. .	. .	. .	20.5	34.4	. .	. .	16 20.48	47.23	0.00	V.	10	7.33	47 44.38	9.16	4.04	17 7.71	26 3 7.6
5	7	. .	38.4	52.	5.5	. .	. .	. .	20 5.58	47.25	0.00	IV.	1	10.11	5 8.09	9.33	0.24	20 52.83	25 20 27.7
6	9	. .	. .	. .	. .	25.5	39.	. .	21 11.50	47.26	0.00	VII.	7	8.44	33 21.27	9.38	2.75	21 58.76	48 43.4
7	9	. .	. .	55.	9.	. .	. .	. .	25 8.67	47.28	0.00	IV.	2	6.59	8 30.28	9.52	0.54	25 55.95	25 23 50.3
8	7	. .	. .	55.	9.4	23.3	. .	. .	30 9.28	47.31	0.00	V.	10	9.53	48 54.97	9.72	4.17	30 56.59	26 4 18.9
9	7	. .	. .	. .	. .	. .	23.	37.	30 55.31	47.32	0.00	VII.	4	11.53	20 56.26	9.74	1.62	31 42.63	25 36 17.6
10	8	38.	51.5	5.5	. .	. .	. .	. .	34 19.24	47.34	0.00	IV.	2	3.48	6 53.96	9.84	0.40	35 6.58	22 14.2
11	5	31.	45.1	58.4	12.5	26.5	. .	. .	38 12.45	47.37	0.00	V.	3	3.53	11 55.54	9.96	0.84	39 0.22	25 27 16.3
12	9	. .	. .	. .	38.6	52.4	. .	. .	42 38.52	47.40	0.00	V.	9	11.28	44 41.97	10.09	3.78	43 25.92	26 0 5.8
13	7	40.5	55.	8.4	22.	. .	. .	. .	47 22.27	47.42	0.00	V.	5	10.8	25 2.84	10.21	2.00	14 48 9.69	25 40 25.1
14	8	. .	51.	3.2	17.3	. .	. .	. .	14 59 17.72	47.51	0.00	V.	8	11.24	39 40.96	10.46	3.33	15 0 5.23	55 4.8
15	7	. .	. .	. .	38.	52.	15.5	19.5	15 0 37.92	47.51	0.00	VII.	6	12.2	30 1.10	10.48	2.46	1 25.43	45 24.0
16	7	31.	46.	59.	13.	. .	. .	. .	4 13.02	47.54	0.00	IV.	5	4.32	22 13.46	10.52	1.74	5 0.56	37 35.7
17	8	18.	32.3	46.	59.3	. .	. .	. .	7 59.72	47.57	0.00	V.	6	3.54	25 55.35	10.57	2.08	8 47.29	41 18.0
18	7	. .	32.5	46.	59.5	. .	. .	. .	10 59.66	47.59	0.00	IV.	2	11.31	10 47.43	10.61	0.73	11 47.25	26 8.8
19	7	. .	52.	5.	. .	. .	. .	. .	27 19.47	47.70	0.00	IV.	9	10.6	44 0.68	10.66	3.74	28 7.17	59 25.1
20	5.6	. .	. .	. .	. .	. .	8.	22.5	27 40.61	47.70	0.00	VII.	7	4.56	31 26.30	10.66	2.59	28 28.31	46 49.6
21	9	. .	32.3	46.	. .	. .	. .	. .	36 59.76	47.77	0.00	IV.	3	9.16	14 38.46	10.61	1.05	37 47.53	30 0.1
22	7	. .	. .	. .	. .	. .	3.	16.9	37 35.23	47.77	0.00	VII.	3	6.50	8 25.38	10.61	0.52	38 23.00	23 46.4
23	8	. .	18.	31.	45.	. .	. .	. .	40 45.18	47.80	0.00	IV.	7	10.29	34 14.57	10.58	2.85	41 32.98	25 49 38.0
24	8	. .	. .	59.	12.5	. .	. .	. .	42 12.72	47.81	+0.01	IV.	10	9.21	48 38.87	10.57	4.16	43 0.54	26 4 3.6
25	5	56.5	11.5	24.3	. .	52.	6.	20.	15 45 38.47	+47.83	0.00	VII.	7	9.40	−33 49.50	−10.53	−2.81	15 46 26.30	−25 49 12.8

ZONE 164. JUNE 6. B. BELT, −25° 38′. D₀=−25° 13′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		r.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	54.	7.3	21.5	15 4 39.84	+20.87	0.00	VII.	5	7.29	−23 42.34	−25.89	−2.89	15 5 0.71	−25 37 41.1
2	9	45.	59.5	13.	. .	. .	. .	. .	8 26.97	20.88	0.00	V.	6	6.43	27 20.57	25.88	3.21	8 47.85	41 19.7
3	10	. .	. .	4.	17.5	. .	. .	. .	10 17.52	20.88	0.00	IV.	5	4.8	22 1.35	25.88	2.74	10 38.40	36 0.0
4	8	. .	. .	. .	. .	41.	54.	. .	11 26.74	20.88	0.00	VI.	3	4.41	12 19.63	25.87	1.90	11 47.62	26 17.4
5	9	. .	. .	. .	25.	39.1	52.	. .	13 24.81	20.89	−0.01	VII.	1	7.6	3 34.45	25.86	1.15	13 45.69	17 31.5
6	9	. .	. .	2.5	16.2	30.3	. .	. .	15 16.24	20.90	0.00	VI.	6	4.44	26 20.45	25.85	3.12	15 37.14	40 19.4
7	7	. .	. .	36.2	50.	4.	. .	. .	23 49.84	20.92	−0.01	V.	1	6.36	3 19.65	25.80	1.12	24 10.75	17 16.6
8	9	. .	. .	6.3	20.5	34.	. .	. .	26 20.22	20.93	0.00	V.	7	9.32	33 45.79	25.77	3.78	26 41.15	47 45.3
9	8	. .	. .	54.4	8.2	22.	. .	. .	28 8.14	20.93	0.00	V.	7	7.39	32 48.81	25.76	3.69	28 29.07	46 48.3
10	10	. .	1.	14.5	28.	. .	. .	. .	32 28.28	20.95	0.00	IV.	6	3.30	25 43.29	25.71	3.06	32 49.23	39 42.1
11	10	. .	. .	40.	54.	. .	. .	. .	33 53.94	20.95	+0.01	IV.	10	3.22	45 37.85	25.69	4.82	34 14.90	59 38.4
12	10	. .	. .	50.	3.5	17.	. .	. .	36 3.46	20.96	0.00	V.	8	2.45	35 19.26	25.66	3.92	36 24.42	49 18.8
13	10	. .	. .	25.	. .	53.2	. .	. .	37 39.13	20.96	0.00	V.	8	5.44	36 49.52	25.64	4.05	38 0.09	50 49.2
14	7	. .	. .	. .	. .	. .	1.	14.5	38 33.04	20.97	0.00	VII.	4	4.22	17 8.85	25.63	2.32	38 54.01	31 6.8
15	8	30.	45.	58.2	. .	. .	. .	. .	41 12.30	20.97	0.00	IV.	8	3.17	35 35.43	25.59	3.94	41 33.27	49 35.0
16	9	. .	22.	35.5	49.	. .	. .	. .	45 49.12	20.99	−0.01	IV.	1	12.3	6 4.56	25.50	1.36	46 10.10	20 1.4
17	8	. .	. .	. .	. .	55.3	9.	23.	46 41.31	20.99	0.00	VII.	3	10.59	15 30.04	25.48	2.18	47 2.30	29 27.7
18	4	44.5	59.	12.5	26.	40.	. .	. .	49 26.28	21.00	0.00	V.	6	5.23	26 40.22	25.43	3.15	49 47.28	40 38.8
19	10	. .	. .	. .	. .	0.	13.5	27.2	50 45.85	21.00	0.00	VII.	7	3.39	30 47.47	25.40	3.51	51 6.85	44 46.4
20	9	. .	36.	49.	. .	16.5	. .	. .	15 53 3.07	+21.01	0.00	V.	6	10.58	−29 29.15	−25.35	−3.39	15 53 24.08	−25 43 27.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
May 3,	11	+ 42.83	l 0.157	− 0.08	+ 0.41	0.00
June 6,	15	+ 17.09	l 0.116	− 0.07	+ 0.66	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(163) 15. Transit over T. VI assumed as $5^{s}.5$ instead of $15^{s}.5$.
(163) 22. Hor. thread assumed as 2 instead of 3.
(163) 23. Minutes of transit assumed as 40 instead of 45.
(163) 24. Minutes of transit assumed as 42 instead of 47.

ZONE 164. JUNE 6. B. BELT, $-25° 38'$. $D_0 = -25° 13' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	5	. .	. .	. .	. .	. .	23.5	37.5	15 53 55.78	+21.01	0.00	VII.	3	5.12	−12 35.06	−25.33	−1.91	15 54 16.79	−25 26 32.3
22	10	. .	. .	. .	. .	. .	5.3	19.2	55 37.64	21.02	0.00	VII.	8	5.32	36 43.15	25.29	4.04	55 58.66	50 42.5
23	7	56.5	11.5	24.4	38.2	. .	. .	. .	15 58 38.64	21.03	+0.01	IV.	9	4.22	41 7.21	25.22	4.43	15 58 59.68	25 55 6.9
24	9	. .	. .	. .	17.	31.	. .	. .	16 0 17.03	21.03	+0.01	VII.	10	8.45	48 20.37	25.18	5.08	16 0 38.07	26 2 20.6
25	9	. .	58.5	12.2	25.5	40.	. .	. .	2 25.83	21.04	0.00	VI.	3	10.17	15 9.06	25.13	2.14	2 46.87	25 29 6.3
26	10	. .	. .	11.	25.	39.	. .	. .	4 24.99	21.05	+0.01	V.	8	11.51	39 54.57	25.07	4.33	4 46.05	53 54.0
27	9	41.	. .	9.	. .	. .	. .	. .	7 22.66	21.06	0.00	IV.	3	9.58	14 59.63	24.99	2.12	7 43.72	28 56.7
28	8	14.	28.3	41.7	55.5	. .	. .	. .	9 55.54	21.07	−0.01	V.	2	8.32	9 17.14	24.92	1.62	10 16.60	23 13.7
29	9	54.5	9.	22.	36.	. .	. .	. .	17 36.30	21.10	+0.01	IV.	9	3.35	40 43.51	24.69	4.40	17 57.41	54 42.6
30	9	. .	. .	9.2	23.	37.	. .	. .	22 22.98	21.12	0.00	VII.	6	5.55	26 56.04	24.54	3.17	22 44.10	40 53.8
31	8	. .	6.	19.	33.	. .	. .	. .	30 33.16	21.14	0.00	V.	7	5.3	31 30.14	24.25	3.59	30 54.30	25 45 28.0
32	9	. .	. .	. .	. .	. .	14.3	28.	34 46.58	21.16	+0.01	VII.	10	8.32	48 13.82	24.10	5.08	35 7.75	26 2 13.0
33	6	. .	. .	. .	19.	33.	. .	. .	37 18.92	21.17	−0.01	V.	1	2.4	1 2.49	24.01	0.0	37 40.08	25 14 56.6
34	9	. .	. .	33.5	47.	. .	. .	. .	39 46.88	21.18	0.01	IV.	1	6.40	3 21.70	23.94	1.11	40 8.05	17 16.8
35	8	. .	. .	4.	17.5	. .	. .	. .	42 17.37	21.19	0.01	IV.	1	4.55	2 28.75	23.83	1.03	42 38.55	16 23.6
36	7	. .	. .	. .	. .	. .	10.	24.2	42 42.35	21.19	−0.01	VII.	2	5.5	6 31.92	23.81	1.47	43 3.53	20 27.2
37	7	. .	. .	. .	. .	. .	. .	29.	44 47.22	21.20	0.00	VII.	5	1.10	20 31.23	23.73	2.61	45 8.42	34 27.6
38	9	. .	. .	. .	. .	. .	1.5	16.	46 34.12	21.21	0.00	VII.	7	5.3	31 29.82	23.67	3.59	46 55.33	45 27.1
39	9	. .	. .	27.	41.1	. .	. .	. .	48 40.92	21.21	0.00	V.	7	12.25	35 13.01	23.59	3.92	49 2.13	49 10.5
40	8	. .	58.9	12.5	26.	. .	. .	. .	54 26.15	21.24	0.00	IV.	3	7.33	14 47.03	23.37	2.00	54 47.39	28 42.4
41	7	. .	. .	. .	. .	. .	36.	50.2	16 55 8.37	21.24	−0.01	VII.	2	13.11	11 37.48	23.34	1.80	16 55 29.60	25 32.6
42	9	. .	. .	. .	. .	. .	. .	44.	17 0 1.98	21.26	0.01	VII.	1	3.26	6 42.59	23.15	1.37	17 0 23.23	20 37.1
43	9	. .	. .	11.5	25.2	. .	. .	. .	2 25.07	21.27	0.01	V.	3	10.32	15 16.75	23.05	2.14	2 46.33	29 11.9
44	9	. .	. .	. .	. .	. .	. .	26.	2 44.13	21.27	−0.01	VII.	3	7.28	13 43.63	23.04	1.99	3 5.39	27 38.7
45	10	. .	. .	8.	22.	. .	. .	. .	6 21.93	21.29	+0.01	VI.	9	9.26	43 40.34	22.88	4.68	6 43.23	57 37.9
46	10	. .	. .	. .	. .	26.3	40.	54.	10 12.42	21.30	0.01	VII.	8	8.10	38 2.82	22.72	4.18	10 33.73	25 51 59.7
47	9	. .	. .	. .	43.5	57.2	. .	. .	12 43.38	21.32	+0.01	V.	10	11.21	49 39.34	22.61	5.23	13 4.71	26 3 37.2
48	9	. .	50.2	3.1	17.	. .	. .	. .	17 17.28	21.34	0.00	IV.	7	10.55	34 27.68	22.40	3.86	17 38.62	25 48 23.9
49	8	21.	35.	48.5	2.	. .	. .	. .	19 2.28	21.35	−0.01	VII.	2	7.41	8 51.09	22.32	1.56	19 23.62	22 45.0
50	10	. .	30.	43.	57.	. .	. .	. .	30 57.05	21.39	0.00	IV.	4	6.40	18 18.80	21.74	2.41	31 18.44	32 13.0
51	9	34.	48.5	. .	. .	. .	. .	. .	49 16.13	21.48	0.00	IV.	7	8.42	33 20.62	20.78	3.76	49 37.61	47 15.2
52	8	. .	. .	. .	. .	. .	4.2	18.1	49 36.52	21.48	0.00	VII.	7	10.9	34 4.13	20.76	3.83	49 58.00	47 58.7
53	9	. .	15.	28.	42.2	. .	. .	. .	53 42.30	21.50	+0.01	IV.	8	13.24	40 41.50	20.53	4.43	54 3.81	54 36.5
54	8	. .	. .	. .	10.	24.	37.2	. .	55 9.84	21.51	0.00	VI.	5	5.2	22 28.42	20.45	2.78	55 31.35	36 21.7
55	8	. .	. .	. .	54.5	9.	. .	. .	56 54.70	21.51	−0.01	V.	3	10.5	15 3.13	20.35	2.11	57 16.20	28 55.6
56	8	. .	. .	. .	. .	10.	24.	38.	57 56.23	21.52	0.00	VII.	4	11.55	20 57.27	20.30	2.65	58 17.75	34 50.2
57	6	. .	. .	. .	. .	. .	43.	57.5	17 59 15.54	21.53	−0.01	VII.	3	10.53	15 27.01	20.22	2.15	17 59 37.06	29 19.4
58	8	. .	. .	12.	26.2	. .	. .	. .	18 1 25.95	21.54	0.00	IV.	7	8.40	33 19.61	20.10	3.76	18 1 47.44	47 13.5
59	9	. .	4.	17.	30.5	. .	. .	. .	4 30.80	21.55	−0.01	V.	2	3.45	6 52.41	19.92	1.39	4 52.34	20 43.7
60	8	. .	. .	. .	. .	46.	0.	14.	5 32.33	21.56	+0.01	VII.	9	3.54	35 53.73	19.87	3.99	5 53.90	49 47.6
61	9	. .	. .	45.	58.6	. .	. .	. .	7 58.48	21.57	−0.01	V.	2	9.00	9 31.25	19.72	1.61	8 20.04	23 22.6
62	8	. .	. .	. .	3.	17.1	. .	. .	9 3.02	21.58	0.00	V.	5	10.46	25 22.01	19.66	3.04	9 24.60	39 14.7
63	10	. .	. .	. .	. .	. .	. .	12.	9 30.22	21.58	0.00	VII.	4	11.6	20 32.57	19.64	2.60	9 51.80	34 24.8
64	9	. .	. .	. .	5.	19.	. .	. .	11 4.96	21.59	0.00	V.	4	5.50	17 53.54	19.55	2.36	11 26.55	31 45.5
65	9	. .	. .	. .	. .	. .	20.	34.	11 52.29	21.59	−0.01	VII.	3	11.00	15 30.54	19.50	2.15	12 13.87	29 22.2
66	10	. .	. .	. .	. .	. .	44.	58.	13 16.28	21.60	−0.01	VII.	3	9.5	14 32.55	19.42	2.05	13 37.87	25 28 24.0
67	10	. .	. .	. .	. .	35.5	49.5	. .	15 21.75	21.61	+0.01	VII.	10	6.2	46 58.18	19.30	5.00	15 43.37	26 0 52.5
68	3.4	. .	54.	7.	21.2	. .	. .	. .	18 21.10	21.62	−0.01	IV.	4	2.10	16 2.65	19.12	2.19	18 42.71	25 29 54.0
69	7	. .	. .	. .	45.	59.2	. .	. .	18 19 45.04	+21.63	−0.01	VI.	2	3.48	−6 53.80	−19.04	−1.39	18 20 6.66	−25 20 44.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1848. h. m.	in.	°	°

REMARKS.

(164) 36. Micrometer reading assumed as $3^r.5$ instead of $5^r.5$.
(164) 40. Micrometer reading assumed as $9^r.33$ instead of $7^r.33$.
(164) 42. Hor. thread assumed as 2 instead of 1.
(164) 56. Double.
(164) 59. Minutes of transit assumed as 4.
(164) 60. Hor. thread assumed as 8 instead of 9.

ZONE 164. JUNE 6. B. BELT, −25° 38′. D₀=−25° 13′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	9	. .	. .	. .	. .	. .	9.	23.2	18 20 41.44	+21.63	0.00	VII.	6	1.33	−24 43.93	−18.99	−2.97	18 21 3.07	−25 38 35.9
71	9	. .	. .	14.3	. .	42.	. .	. .	23 27.86	21.65	−0.01	V.	1	6.33	3 18.13	18.82	1.06	23 49.50	17 8.0
72	9	. .	. .	. .	. .	. .	35.	49.	24 7.30	21.65	0.00	VII.	4	8.48	19 22.98	18.78	2.50	24 28.95	33 14.3
73	9	. .	32.	45.5	59.	. .	. .	. .	26 59.17	21.66	−0.01	.	2	13.48	11 56.50	18.61	1.81	27 20.82	25 46.9
74	8	. .	. .	. .	. .	. .	5.5	19.5	28 37.80	21.67	0.00	VII.	4	7.33	18 45.16	18.51	2.43	28 59.47	32 36.1
75	8	. .	. .	. .	. .	29.	42.5	57.	30 15.08	21.68	0.00	VII.	5	8.19	24 7.56	18.41	2.92	30 36.76	37 58.9
76	10	. .	. .	. .	15.5	29.7	. .	. .	33 15.57	21.70	0.00	V.	5	8.49	24 23.01	18.23	2.95	33 37.27	38 14.2
77	10	. .	37.	50.	4.5	. .	. .	. .	35 4.20	21.71	−0.01	IV.	4	3.59	16 57.61	18.11	2.28	35 25.90	30 48.0
78	10	. .	. .	. .	. .	56.	9.5	25.	37 42.35	21.72	−0.01	VII.	2	6.58	8 29.41	17.95	1.51	38 4.06	22 18.9
79	10	. .	35.5	48.5	3.	. .	. .	. .	40 2 84	21.72	0.00	IV.	7	7.39	32 48.84	17.81	3.72	40 24.56	46 40.4
80	10	. .	. .	. .	. .	. .	13.	27.3	41 45.40	21.74	−0.01	VII.	2	5.55	7 57.64	17.70	1.47	42 7.13	21 46.8
81	10	. .	6.2	19.5	33.3	. .	. .	. .	47 33.45	21.77	0.00	V.	6	3.00	25 28.12	17.33	3.05	47 55.22	39 18.5
82	10	. .	54.	8.	21.5	. .	. .	. .	49 21.46	21.77	−0.01	V.	2	2.2	6 0.48	17.22	1.29	49 43.22	19 49.0
83	10	. .	. .	. .	. .	36.	50.	. .	51 22.25	21.79	+0.01	VI.	9	5.38	41 45.37	17.09	4.54	51 44.05	55 37.0
84	10	. .	. .	. .	. .	. .	15.	29.3	52 47.55	21.79	+0.01	VII.	8	12.3	40 0.30	17.00	4.39	53 9.35	53 51.7
85	7.8	. .	44.3	54.7	. .	. .	39.	. .	55 11.68	21.81	−0.01	VII.	3	6.4	13 1.29	16.84	0.92	55 33.48	26 49.1
86	10	. .	. .	. .	. .	2.3	16.	30.	18 57 48.31	21.82	−0.01	VII.	3	9.35	14 47.68	16.67	2.08	18 58 10.12	28 36.4
87	10	. .	. .	. .	. .	. .	35.	49.	19 3 7.40	21.85	+0.01	VII.	9	4.20	41 5.84	16.30	4.49	19 3 29.26	54 56.6
88	7	17.	31.3	45.	58.8	. .	. .	. .	5 58.75	21.86	0.00	V.	4	3.47	16 51.52	16.09	2.27	6 20.61	30 39.9
89	10	. .	. .	. .	. .	4.	18.	32.	6 50.24	21.86	0.00	VII.	5	4.32	22 13.10	16.04	2.74	7 12.10	36 1.9
90	10	. .	. .	. .	. .	. .	. .	47.	8 5.72	21.87	+0.01	VII.	8	4.31	36 12.39	15.94	4.04	8 27.60	50 2.4
91	10	. .	. .	. .	. .	. .	. .	5.	9 43.19	21.88	0.00	VII.	4	6.32	18 14.41	15.85	2.38	10 5.07	32 2.6
92	10	. .	. .	. .	24.	38.	. .	. .	11 23.99	21.89	+0.01	V.	7	11.7	34 33.69	15.71	3.89	11 45.89	48 23.3
93	10	. .	. .	. .	. .	22.5	36.6	50.5	13 8.82	21.90	0.00	VII.	7	4.54	31 25.29	15.59	3.61	13 30.72	45 14.5
94	10	. .	. .	. .	. .	. .	. .	15.4	14 33.66	21.90	0.00	VII.	5	8.19	24 7.56	15.48	2.92	14 55.56	37 56.0
95	10	30.	44.4	57.6	11.3	. .	. .	. .	17 11.76	21.92	+0.01	IV.	8	9.22	38 39.48	15.30	4.27	17 33.69	52 29.1
96	10	1.	16.2	29.	43.	. .	. .	. .	19 42.87	21.93	0.00	IV.	7	6.51	32 24.64	15.12	3.70	20 4.80	46 13.5
97	10	. .	. .	. .	40.5	54.3	8.3	. .	20 40.49	21.93	0.00	VI.	7	3.42	30 49.18	15.05	3.54	21 2.42	44 37.8
98	10	. .	. .	3.	16.3	30.5	. .	. .	23 16.48	21.95	0.00	VI.	5	6.12	23 3.72	14.86	2.83	23 38.43	36 51.4
99	10	. .	. .	27.	40.3	. .	. .	. .	25 40.35	21.96	−0.01	IV.	3	5.53	12 56.09	14.7	1.90	26 2.30	26 42.7
100	10	. .	. .	. .	32.	46.3	. .	. .	28 32.10	21.97	−0.01	VII.	2	10.58	10 30.43	14.5	1.66	28 54.06	24 16.6
101	10	. .	. .	. .	. .	42.	55.	9.	33 27.65	22.00	+0.01	VII.	8	10.26	39 11.40	14.1	4.33	33 49.66	52 59.8
102	10	. .	. .	. .	41.5	55.5	. .	. .	35 41.49	22.01	0.00	VII.	6	12.16	30 8.16	14.0	3.49	36 3.50	43 55.7
103	9	. .	. .	42.5	. .	9.5	23.5	. .	37 55.99	22.02	+0.01	VII.	9	4.30	41 10.89	13.8	4.51	38 18.02	54 59.2
104	9	. .	. .	. .	. .	25.	39.	. .	41 11.25	22.05	0.00	VII.	6	6.3	27 0.08	13.6	3.18	41 33.30	40 46.9
105	10	. .	49.3	3.	16.3	30.5	. .	. .	43 16.52	22.06	−0.01	VI.	2	7.31	8 46.25	13.4	1.51	43 38.57	22 31.2
106	10	. .	. .	. .	. .	53.3	. .	. .	19 47 39.36	+22.08	−0.01	VI.	3	9.21	−15 11.06	−13.1	−2.06	19 48 1.43	−25 28 56.2

ZONE 165. JUNE 13. B. BELT, −26° 16′. D₀=−25° 51′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	18.	32.	. .	. .	16 4 17.89	+27.37	−0.01	VI.	1	3.42	− 1 51.77	−23.4	−0.97	16 4 45.25	−25 54 6.1
2	9	. .	. .	56.	10.	. .	37.	. .	14 9.56	27.40	−0.01	VI.	1	5.15	2 38.66	22.6	1.02	14 36.95	25 54 52.3
3	8	. .	. .	. .	. .	. .	. .	43.1	15 1.30	27.41	0.00	VII.	8	2.8	35 0.26	22.6	3.92	15 28.71	26 27 16.8
4	8	. .	. .	. .	. .	. .	. .	53.5	16 11.51	27.41	0.00	VII.	5	1.54	20 53.40	22.5	2.63	16 38.92	13 8.5
5	.	. .	. .	. .	45.4	. .	. .	. .	45.25										
6	4	. .	18.	32.1	45.	59.3	13.	. .	19 45.33	27.42	−0.01	VI.	.	.	. . .	22.2	. .	16 20 12.74	
7	7	. .	16.	29.3	43.	. .	. .	. .	21 43.25	27.43	0.00	V.	4	10.15	20 7.17	22.0	2.56	22 10.68	12 21.7
8	10	40.	54.	. .	. .	. .	. .	. .	16 26 21.90	+27.44	0.00	III.	3	9.9	−14 34.89	−21.7	−2.06	16 25 49.34	−26 6 48.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
June 13,	15	+ 23.60	l 0.130			

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(164) 75. Triplet.
(164) 78. Minutes not certain.
(164) 91. Transit over T. VII assumed as 15 instead of 5.
(164) 106. Micrometer reading assumed as $10^{r}.21$ instead of $9^{r}.21$.
(165) 8. Minutes assumed as 25 instead of 26.

ZONE 165. JUNE 13. B. BELT, −26° 16′. $D_0 = -25° 51' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	8	. .	. .	. .	. .	49.	. .	17.	16 25 34.98	+27.44	0.00	VII.	4	4.52	−17 23.96	. .	−2.32	16 26 2.42	
10	9	. .	3.5	17.	. .	. .	. .	. .	30 31.01	27.45	0.00	IV.	4	3.46	16 51.06	−21.3	2.27	30 58.46	−26 9 4.6
11	8	. .	. .	. .	. .	. .	. .	14.	30 31.87	27.45	−0.01	VII.	2	8.4	9 2.68	21.3	1.57	30 59.31	1 15.6
12	9	42.5	57.	. .	. .	. .	. .	. .	33 24.70	27.46	0.00	III.	4	5.24	17 40.43	21.1	2.34	33 52.16	9 54.9
13	8	. .	. .	. .	8.5	22.	36.	. .	34 8.21	27.47	+0.01	VII.	8	9.36	38 46.17	21.0	4.27	34 35.69	31 1.4
14	7	. .	38.8	52.0	6.	. .	. .	. .	36 6.16	27.47	0.00	IV.	6	11.29	29 44.82	20.8	3.42	36 33.63	21 59.0
15	10	6.5	22.	. .	49.	. .	. .	. .	37 49.25	27.48	+0.01	IV.	9	12.1	44 58.65	20.7	4.83	38 16.74	37 14.2
16	9	45.	0.0	13.2	. .	. .	. .	. .	40 27.47	27.49	0.00	IV.	8	4.30	36 12.25	20.5	4.03	40 54.96	28 26.8
17	9	. .	. .	. .	. .	. .	26.	40.	40 58.18	27.49	0.00	VII.	6	10.33	29 16.21	20.5	3.39	41 25.67	21 30.1
18	8	. .	. .	58.	11.5	26.	. .	. .	43 11.81	27.50	0.00	V.	8	7.5	37 30.36	20.3	4.16	43 39.31	29 44.7
19	8	25.	39.8	53.	7.	. .	. .	. .	45 7.04	27.50	0.00	IV.	4	4.57	17 26.86	20.1	2.31	45 34.54	9 39.3
20	9	. .	15.7	29.	. .	. .	. .	. .	47 43.32	27.51	0.00	IV.	7	10.36	34 18.11	19.0	3.86	48 10.83	26 31.9
21	10	. .	. .	31.5	45.	. .	. .	. .	48 45.00	27.52	0.00	IV.	3	9.45	14 53.08	19.9	2.08	49 12.52	7 5.0
22	9	. .	. .	. .	. .	58.	12.	26.	49 44.07	27.52	0.00	VII.	4	2.13	16 3.78	19.7	2.19	50 11.59	8 15.7
23	9	. .	. .	. .	. .	. .	7.5	21.	51 39.44	27.53	0.00	VII.	7	7.32	32 44.94	19.5	3.71	52 6.97	24 58.2
24	9	. .	. .	38.	51.5	. .	. .	. .	54 51.48	27.54	−0.01	V.	2	11.30	10 46.89	19.2	1.72	55 19.01	2 57.8
25	8	. .	. .	6.5	20.	. .	. .	. .	56 20.12	27.55	0.00	V.	6	11.52	29 56.38	19.1	3.44	56 47.67	22 8.9
26	7	. .	. .	. .	. .	22.	35.5	50.	57 7.95	27.55	0.00	VII.	5	12.7	26 2.50	19.0	3.09	57 35.50	18 14.6
27	9	. .	. .	. .	50.	. .	17.5	. .	16 58 49.75	27.56	+0.01	VII.	10	3.47	45 50.08	18.9	4.91	16 59 17.32	38 3.9
28	9	. .	39.5	53.	6.5	. .	. .	. .	17 1 6.84	27.56	0.00	IV.	5	6.32	23 13.97	18.7	2.84	17 1 34.40	15 25.5
29	9	. .	. .	. .	. .	. .	18.	32.5	1 50.46	27.57	+0.01	VII.	8	8.55	38 25.49	18.6	4.25	2 18.04	30 38.3
30	8	45.	0.0	. .	. .	. .	. .	. .	5 27.54	27.58	0.00	IV.	6	9.48	28 53.89	18.2	3.36	5 55.12	21 5.5
31	7	. .	. .	. .	. .	. .	8.	22.	5 40.18	27.58	0.00	VII.	6	12.42	30 21.25	18.2	3.50	6 7.76	22 33.0
32	8	. .	. .	. .	. .	7.	20.5	34.5	7 52.83	27.59	0.00	VII.	7	11.31	35 15.70	18.0	3.91	8 20.42	27 27.6
33	9	. .	47.	0.5	. .	. .	. .	. .	10 14.73	27.60	0.00	IV.	7	11.4	34 32.22	17.8	3.88	10 42.33	26 43.9
34	8	. .	. .	. .	. .	58.	12.	26.	10 44.29	27.60	0.00	VII.	7	4.26	31 11.15	17.7	3.57	11 11.89	23 22.4
35	8	. .	. .	. .	. .	. .	. .	21.3	11 39.42	27.61	0.00	VII.	6	8.45	28 21.75	17.6	3.32	12 7.03	20 32.7
36	10	. .	. .	. .	17.	. .	45.	. .	14 17.07	27.62	−0.01	VI.	3	4.50	12 24.16	17.4	1.86	14 44.68	4 33.4
37	8	. .	37.	50.5	4.4	. .	. .	. .	17 4.44	27.63	0.00	IV.	4	8.49	19 23.85	17.1	2.48	17 32.07	11 33.4
38	9	. .	34.5	47.4	1.5	. .	. .	. .	19 1.80	27.63	+0.01	IV.	9	9.27	43 41.00	16.9	4.73	19 29.44	35 52.6
39	8	16.	30.9	44.	58.	. .	. .	. .	21 58.07	27.64	0.00	IV.	4	3.30	16 42.99	16.6	2.23	22 25.71	8 51.8
40	9	15.	30.5	. .	57.9	. .	. .	. .	24 57.89	27.65	+0.01	IV.	10	3.32	45 42.90	16.3	4.92	25 25.55	37 54.1
41	8	. .	. .	55.5	9.4	23.5	. .	. .	34 9.34	27.69	0.00	V.	5	3.27	21 40.63	15.4	2.69	34 37.03	13 48.7
42	9	. .	11.	24.5	38.5	. .	. .	. .	36 38.45	27.70	0.00	V.	3	11.46	15 54.06	15.1	2.16	37 6.15	8 1.3
43	10	. .	. .	. .	. .	0.5	13.5	28.	37 46.11	27.71	0.00	VII.	5	9.59	24 57.96	15.0	3.00	38 13.82	17 6.0
44	10	. .	49.	. .	16.	. .	. .	. .	40 16.45	27.72	+0.01	IV.	9	6.45	42 19.32	14.7	4.61	40 44.18	26 34 28.6
45	10	. .	. .	20.5	34.	. .	. .	. .	43 33.94	27.73	−0.01	IV.	1	11.9	5 37.34	14.4	1.24	44 1.66	25 57 43.0
46	10	. .	. .	. .	. .	. .	5.	19.	17 44 37.12	27.74	0.00	VII.	4	9.32	19 45.15	14.3	2.52	17 45 4.86	26 11 52.0
47	9	. .	. .	9.	22.5	. .	. .	. .	18 5 22.61	27.83	0.00	IV.	6	9.41	28 50.36	12.0	3.36	18 5 50.44	20 55.7
48	8	. .	. .	. .	. .	. .	19.	33.	5 51.18	27.83	0.00	VII.	6	11.27	29 43.43	11.9	3.44	6 19.01	26 21 48.8
49	8	. .	. .	. .	55.	. .	. .	. .	9 54.85	27.84	−0.01	V.	1	15.9	7 38.30	11.4	1.42	10 22.68	25 59 41.1
50	9	. .	. .	. .	. .	. .	0.0	14.2	12 32.31	27.86	+0.01	VII.	8	5.31	36 42.62	11.1	4.10	13 0.18	26 28 47.8
51	8	. .	. .	. .	. .	. .	. .	28.	13 46.02	27.86	0.00	VII.	5	4.11	22 2.48	11.0	2.71	14 13.88	26 14 6.2
52	9	. .	. .	39.5	53.5	. .	. .	. .	16 53.21	27.88	−0.01	IV.	2	5.22	7 41.36	10.6	1.42	17 21.08	25 59 43.4
53	9	. .	. .	. .	21.	35.	. .	. .	18 20.94	27.88	0.00	V.	5	7.53	23 54.76	10.4	2.90	18 48.82	26 15 58.1
54	8	. .	. .	. .	. .	. .	. .	50.5	19 8.86	27.89	+0.01	VII.	10	8.22	48 8.75	10.3	5.18	19 36.76	40 14.2
55	9	. .	59.	12.	25.5	. .	. .	. .	22 26.17	27.90	+0.01	VI.	9	8.53	43 24.20	9.9	4.64	22 54.08	35 28.7
56	8	. .	. .	. .	. .	32.	46.	0.0	23 18.11	27.91	0.00	VII.	5	10.42	25 19.65	9.8	3.03	23 46.02	17 22.5
57	10	. .	. .	. .	. .	16.5	30.	. .	25 2.39	27.92	+0.01	VII.	9	8.8	43 0.79	9.6	4.70	25 30.32	35 5.1
58	9	. .	. .	47.5	1.5	. .	. .	. .	18 27 1.39	+27.92	0.00	V.	7	6.31	−32 14.52	− 9.3	−3.68	18 27 29.31	−26 24 17.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(165) 31. Double.
(165) 32. Micrometer reading assumed as 12$^{\text{r}}$.31 instead of 11$^{\text{r}}$.31.
(165) 54. Double.
(165) 55. Micrometer reading assumed as 10$^{\text{r}}$.53 instead of 8$^{\text{r}}$.53.

ZONE 166. JUNE 15. B. BELT, −25° 1′. D_o=−24° 37′ 50″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	38.2	51.4	6.	. .	. .	15 4 51.78	+29.94	0.00	VI.	6	5.15	−26 36.19	− 6.9	−2.13	15 5 21.62	−25 4 35.2
2	8	. .	. .	. .	. .	. .	. .	38.	5 56.32	29.94	−0.01	VII.	3	2.42	11 19.43	7.2	0.94	6 26.25	24 49 17.6
3	8	. .	. .	5.	19.	32.	. .	. .	9 18.42	29.94	−0.01	VI.	1	3.53	1 57.32	8.3	0.22	9 48.35	39 55.8
4	9	. .	0.0	13.	26.5	. .	. .	. .	11 26.87	29.94	0.00	V.	5	8.50	24 23.51	8.9	1.95	11 56.81	25 2 24.4
5	8	. .	. .	45.5	59.	. .	. .	. .	12 58.96	29.94	−0.01	IV.	3	13.14	16 38.46	9.4	1.36	13 28.89	24 54 39.2
6	8	34.	48.5	2.	15.3	. .	. .	. .	15 15.68	29.94	0.00	IV.	6	10.46	29 23.15	10.1	2.35	15 45.62	25 7 25.6
7	9	. .	. .	27.5	41.2	. .	. .	. .	16 41.13	29.94	0.00	V.	6	5.21	26 39.21	10.6	2.13	17 11.07	25 4 41.9
8	9	. .	36.	49.2	2.5	. .	. .	. .	21 2.81	29.93	−0.01	V.	2	6.38	8 19.65	11.9	0.70	21 32.73	24 46 22.3
9	8	. .	14.5	27.3	41.	. .	. .	. .	23 41.32	29.93	+0.01	IV.	8	9.44	38 50.58	12.7	3.09	24 11.26	25 16 56.4
10	8	7.5	22.	35.4	49.	. .	. .	. .	25 49.25	29.93	0.01	IV.	8	2.40	35 16.78	13.4	2.82	26 19.19	13 23.0
11	8	. .	. .	20.8	34.5	. .	. .	. .	27 34.54	29.93	+0.01	IV.	9	8.42	43 18.32	14.0	3.46	28 4.48	25 21 25.8
12	9	27.6	41.5	55.	9.	. .	. .	. .	30 8.87	29.93	−0.01	IV.	3	7.33	13 46.52	14.7	1.12	30 38.79	24 51 52.3
13	8	. .	. .	. .	10.	24.	37.4	51.5	31 10.01	29.93	0.00	VII.	6	7.32	27 44.96	15.1	2.22	31 39.94	25 5 52.3
14	7	1.5	16.	29.5	43.2	. .	. .	. .	33 43.19	29.93	0.00	IV.	4	5.06	17 31.40	15.8	1.42	34 13.12	24 55 38.6
15	8	36.	50.8	4.	17.3	. .	. .	. .	36 17.70	29.94	0.00	V.	5	5.48	22 51.73	16.6	1.83	36 47.64	25 1 0.2
16	8	. .	. .	39.	53.	. .	. .	. .	37 52.90	29.94	+0.01	VII.	9	13.1	45 28.54	17.1	3.65	38 22.85	23 39.3
17	5.6	40.5	1.	14.	27.3	41.5	. .	. .	41 27.76	29.94	+0.01	VI.	8	10.9	39 3.03	18.1	3.12	41 57.71	25 17 14.3
18	6	25.	40.	53.	6.5	20.5	34.	. .	44 6.68	29.94	−0.01	VII.	3	8.18	14 8.85	18.9	1.15	44 36.61	24 52 18.9
19	6	. .	. .	. .	. .	. .	. .	50.5	45 8.80	29.94	0.01	VII.	2	8.35	9 18.33	19.2	0.77	45 38.73	47 28.3
20	8	. .	. .	. .	55.	9.	. .	. .	51 54.97	29.94	−0.01	V.	2	5.42	7 51.41	21.3	0.66	52 24.90	24 46 3.4
21	6	. .	. .	33.	46.5	1.	14.	. .	53 46.77	29.94	+0.01	VI.	10	8.31	48 13.51	21.8	3.87	54 16.72	25 26 29.2
22	10	. .	13.5	27.	40.3	. .	. .	. .	57 40.66	29.94	0.00	IV.	6	5.10	26 33.71	23.0	2.13	58 10.60	25 4 48.8
23	10	. .	. .	. .	10.	24.	. .	. .	15 59 10.01	29.94	0.00	V.	4	9.52	19 55.57	23.5	1.59	15 59 39.95	24 58 10.7
24	10	. .	. .	25.4	37.	53.	. .	. .	16 0 39.00	29.94	0.00	V.	4	9.19	19 38.93	23.9	1.57	16 1 8.94	24 57 54.4
25	10	. .	. .	. .	. .	. .	. .	2.	1 20.56	29.94	0.00	VII.	6	10.12	29 5.64	24.1	2.33	1 50.50	25 7 22.1
26	8	36.5	51.2	4.2	18.	. .	. .	. .	5 18.19	29.94	0.00	V.	6	6.32	27 15.03	25.2	2.18	5 48.13	25 5 32.4
27	9	. .	. .	. .	. .	27.	40.5	54.	6 12.81	29.94	−0.01	VII.	2	1.41	5 49.56	25.5	0.50	6 42.74	24 44 5.6
28	9	. .	19.5	32.4	46.	. .	. .	. .	9 46.50	29.94	+0.01	V.	10	2.8	45 0.50	26.5	3.60	10 16.45	25 23 20.6
29	6	53.	7.	21.	34.	48.	. .	. .	11 34.47	29.94	+0.01	VI.	8	2.53	35 23.17	27.1	2.83	12 4.42	13 43.1
30	10	. .	. .	13.	26.	. .	. .	. .	14 26.26	29.94	0.00	V.	6	1.31	24 43.24	27.9	1.98	14 56.20	3 3.1
31	10	. .	. .	. .	. .	. .	50.	4.	15 22.50	29.95	0.00	VII.	5	3.50	21 51.91	28.2	1.75	15 52.45	0 11.9
32	8	. .	. .	. .	37.	51.2	. .	. .	18 37.13	29.95	0.00	VII.	6	8.59	28 28.83	29.1	2.28	19 7.08	25 6 50.2
33	9	. .	. .	. .	23.	. .	. .	. .	20 22.85	29.95	−0.01	IV.	2	10.39	10 21.22	29.6	0.84	20 52.79	24 48 41.7
34	6	. .	. .	. .	. .	. .	. .	17.	20 35.28	29.95	0.01	VII.	2	6.54	8 27.40	29.7	0.69	21 5.22	46 47.8
35	9	. .	. .	22.	35.5	. .	. .	. .	24 35.35	29.95	−0.01	V.	1	4.49	2 25.69	30.8	0.22	25 5.29	24 40 46.7
36	10	. .	. .	0.5	14.	. .	. .	. .	16 26 14.02	+29.95	0.00	V.	6	3.13	−25 34.67	−31.3	−2.05	16 26 43.97	−25 3 58.0

ZONE 167. JUNE 16. P. BELT, −9° 20′.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	35.5	. .	1.4	13.6	. .	. .	. .	18 57 13.66	+29.23	0.00	III.	4	4.4	−17 0.13	. .	−1.71	18 57 42.89	
2	10	43.	56.1	. .	. .	. .	. .	. .	19 0 21.26	29.24	−0.01	II.	3	3.56	11 57.05	. .	1.51	19 0 50.49	
3	10	. .	. .	. .	23.9	. .	49.	. .	1 23.76	29.24	0.00	IV.	6	8.4	28 1.46	. .	2.11	1 52.00	
4	10	. .	. .	. .	. .	. .	51.9	. .	4 26.69	29.25	0.00	VI.	4	10.12	20 5.65	. .	1.81	4 55.94	
5	8	. .	. .	. .	35.5	. .	0.9	. .	5 35.53	29.25	−0.01	VI.	2	5.20	7 40.30	. .	1.35	6 4.77	
6	9	. .	. .	23.9	. .	49.9	. .	. .	8 36.63	29.26	−0.01	V.	1	3.2	1 31.76	. .	1.12	9 5.88	
7	10	. .	12.9	. .	. .	. .	. .	. .	10 38.23	29.27	0.00	I.	5	3.20	21 37.02	. .	1.87	11 7.50	
8	10	. .	. .	. .	19.9	. .	34.6	. .	11 19.57	29.27	0.00	IV.	4	6.2	17 59.64	. .	1.73	11 48.84	
9	10	. .	. .	. .	27.4	. .	. .	. .	19 14 27.26	+29.28	0.00	IV.	8	6.00	−36 57.63	. .	−2.46	19 14 56.54	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
June 15,	15	+ 26.30	g 0.008	− 0.19	+ 0.71	0.00
16,	15	+ 25.76	l 0.032	− 0.37	+ 0.94	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(166) 17. Transit over T. I assumed as $45^s.5$ instead of $40^s.5$.
(166) 24. Transit over T. IV assumed as 39^s instead of 37^s.
(166) 29. Double; time of transit over T. I assumed as 53^s instead of 55^s.
(167) 8. One of these transits is erroneous by 10^s. T. IV is assumed to be correctly observed.

ZONE 167. JUNE 16. P. BELT, −9° 20′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	10	38.1	51.4	. .	. .	. .	. .	. .	19 18 16.56	+29.29	0.00	II.	6	7.44	−27 51.32	. .	−2.11	19 18 45.85	
11	9	35.2	48.1	. .	. .	. .	. .	. .	19 13.50	29.29	0.00	II.	7	9.51	33 55.35	. .	2.34	19 42.79	
12	9	. .	. .	. .	. .	6.4	. .	. .	19 53.74	29.29	0.00	VII.	6	12.12	30 6.38	. .	2.19	20 23.03	
13	11	. .	. .	. .	33.9	. .	. .	. .	25 33.76	29.31	−0.01	V.	1	7.44	3 53.96	. .	1.20	26 3.06	
14	10	. .	. .	. .	. .	. .	. .	2.9	27 24.95	29.32	0.00	VII.	7	11.30	34 55.29	. .	2.38	27 54.27	
15	10	. .	. .	. .	8.9	. .	. .	46.3	32 8.58	29.33	+0.01	IV.	8	8.25	38 10.74	. .	2.50	32 37.92	
16	10	. .	. .	. .	. .	17.2	. .	. .	34 4.61	29.34	+0.01	V.	9	8.30	43 12.26	. .	2.70	34 33.96	
17	10	46.9	. .	. .	. .	. .	. .	. .	36 25.03	29.34	−0.01	I.	2	8.14	9 7.98	. .	1.40	36 54.36	
18	11	. .	. .	. .	. .	. .	33.	. .	40 7.77	29.36	0.00	VI.	6	9.15	28 37.20	. .	2.14	40 37.13	
19	10	. .	. .	. .	. .	. .	. .	13.9	40 35.84	29.36	0.00	VII.	6	5.50	26 53.76	. .	2.07	41 5.20	
20	10	. .	. .	. .	. .	. .	48.1	. .	42 22.89	29.36	0.00	VI.	4	7.52	18 55.05	. .	1.77	42 52.25	
21	10	. .	. .	38.5	. .	. .	. .	33.5	44 50.62	29.37	0.00	III.	4	5.23	17 39.95	. .	1.72	45 19.99	
22	10	. .	36.5	. .	. .	. .	. .	. .	47 1.81	29.38	0.00	III.	4	5.54	17 55.59	. .	1.73	47 31.19	
23	10	. .	. .	. .	. .	. .	. .	40.4	47 2.20	29.38	0.00	VII.	4	6.2	17 59.52	. .	1.73	47 31.58	
24	10	36.5	. .	. .	. .	. .	. .	. .	49 14.81	29.39	0.00	I.	8	6.2	36 58.52	. .	2.46	49 44.20	
25	10	. .	. .	. .	. .	. .	46.5	. .	49 21.26	29.39	+0.01	VI.	8	8.8	38 2.12	. .	2.50	49 50.66	
26	10	. .	. .	50.4	. .	. .	15.8	. .	50 1.77?	29.39	0.00	IV.	6	6.21	27 9.51	. .	2.09	50 31.16	
27	10	. .	. .	. .	. .	. .	7.8	. .	52 42.58	29.40	0.00	VI.	5	9.42	24 49.72	. .	1.99	53 11.98	
28	10	. .	. .	. .	. .	. .	43.5	. .	55 18.28	29.41	0.00	VI.	5	7.37	23 46.69	. .	1.95	55 47.69	
29	10	. .	14.6	. .	. .	. .	. .	. .	57 39.83	29.41	−0.01	VII.	1	9.12	4 38.22	. .	1.22	58 9.23	
30	10	. .	. .	. .	. .	. .	. .	55.5	19 58 17.34	29.42	0.00	VII.	4	12.9	21 4.57	. .	1.85	19 58 46.76	
31	10	. .	. .	. .	. .	. .	24.9	. .	20 1 59.66	29.43	+0.01	VI.	8	13.35	40 47.00	. .	2.61	20 2 29.10	
32	5	. .	. .	. .	. .	. .	. .	11.9	2 33.82	29.43	0.00	VI.	5	13.15	26 37.11	. .	2.06	3 3.25	
33	9	. .	. .	. .	. .	. .	. .	26.9	4 48.48	29.44	−0.01	VII.	1	7.27	3 45.27	. .	1.17	5 17.91	
34	10	. .	. .	. .	. .	. .	. .	16.9	6 39.00	29.45	0.00	VII.	8	7.3	37 29.27	. .	2.48	7 8.45	
35	10	. .	. .	. .	. .	. .	30.1	. .	9 4.87	29.46	0.00	VI.	6	9.47	28 53.34	. .	2.16	9 34.33	
36	10	. .	45.6	. .	10.8	. .	. .	. .	11 10.74	29.46	−0.01	IV.	1	8.29	4 16.66	. .	1.19	11 40.19	
37	9	19.5	. .	. .	. .	10.5	. .	. .	13 57.79	29.47	0.00	I.	6	7.3	27 30.57	. .	2.10	14 27.26	
38	9	30.1	. .	55.6	. .	. .	. .	. .	16 8.23	29.48	0.00	III.	5	9.10	24 33.62	. .	1.98	16 37.71	
39	9	. .	. .	. .	. .	. .	. .	58.9	24 20.81	29.51	0.00	VII.	5	12.25	26 11.88	. .	2.05	24 50.32	
40	10	44.5	. .	10.4	. .	. .	. .	. .	30 22.73	29.54	0.00	III.	3	6.2	13 0.63	. .	1.52	30 52.27	
41	10	. .	. .	. .	22.5	. .	. .	. .	31 22.36	29.54	−0.01	IV.	1	9.40	4 52.46	. .	1.21	31 51.89	
42	9	. .	. .	7.8	. .	32.3	. .	. .	32 19.93	29.54	0.00	V.	4	9.10	19 34.42	. .	1.78	32 49.47	
43	8	. .	. .	. .	. .	32.5	. .	. .	33 19.83	29.55	0.00	V.	6	7.58	27 58.41	. .	2.12	33 49.38	
44	10	. .	. .	2.3	. .	. .	. .	. .	35 14.60	29.56	−0.01	III.	1	10.27	5 16.15	. .	1.22	35 44.15	
45	10	. .	. .	. .	. .	. .	. .	30.5	35 52.22	29.56	0.00	VII.	2	15.45	12 55.37	. .	1.53	36 21.78	
46	10	. .	. .	. .	. .	2.9	. .	. .	38 50.13	29.57	−0.01	V.	2	9.12	9 37.33	. .	1.39	39 19.69	
47	10	20.2	. .	. .	. .	. .	. .	. .	40 58.47	29.58	0.00	II.	6	12.16	30 8.47	. .	2.20	41 28.05	
48	9	. .	. .	. .	. .	12.1	. .	. .	44 59.39	29.58	0.00	V.	4	12.58	21 39.38	. .	1.87	41 28.97	
49	6	25.4	. .	. .	4.9	. .	. .	. .	44 4.25	29.59	+0.01	I.	9	6.15	42 4.07	. .	2.67	44 33.85	
50	10	. .	33.9	. .	. .	. .	. .	. .	45 59.33	29.60	0.00	II.	8	5.29	36 41.94	. .	2.46	46 28.93	
51	10	. .	34.9	. .	. .	. .	. .	. .	49 0.31	29.61	0.00	II.	8	0.30	34 11.18	. .	2.36	49 29.92	
52	10	. .	53.9	. .	14.8	. .	. .	. .	52 16.90	29.63	−0.01	II.	2	1.20	5 39.28	. .	1.23	52 46.52	
53	9	. .	. .	59.1	. .	. .	. .	. .	20 56 11.70	+29.64	0.00	III.	7	0.16	−29 5.46	. .	−2.17	20 56 41.34	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(167) 21. The two transits are discordant by about 5ˢ; transit over T. VII assumed as 28ˢ.5 instead of 33ˢ.5.
(167) 52. The transits are discordant by about 5ˢ; time of transit over T. IV assumed as 19ˢ.8 instead of 14ˢ.8.

ZONE 168. JUNE 20. B. BELT, −24° 23′. D_0=−24° 0′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	11.	24.5	. .	15 10 57.22	+26.14	0.00	VII.	5	10.35	−25 16.15	−24.5	−2.02	15 11 23.36	−24 25 42.7
2	9	. .	. .	. .	. .	13.	26.5	. .	16 59.22	26.13	0.00	VII.	6	6.1	26 59.08	24.1	2.15	17 25.35	27 25.3
3	8	. .	. .	15.	28.4	42.2	. .	. .	18 28.52	26.13	0.00	V.	8	8.16	38 6.17	24.0	3.01	18 54.65	38 33.2
4	10	. .	. .	. .	51.	5.	. .	. .	19 51.03	26.18	0.00	V.	3	10.2	15 1.62	23.9	1.24	20 17.16	15 26.8
5	9	. .	. .	. .	6.4	20.2	. .	. .	21 6.40	26.12	0.00	VI.	10	4.41	46 17.53	23.8	3.64	21 32.52	46 45.0
6	10	. .	32.	44.5	58.2	. .	. .	. .	23 58.59	26.12	0.00	V.	7	3.4	30 30.14	23.6	2.41	24 24.71	30 56.2
7	8	. .	. .	. .	. .	48.2	1.6	15.5	24 34.36	26.12	0.00	VII.	8	3.18	35 35.58	23.5	2.82	25 0.48	36 1.9
8	9	. .	. .	. .	. .	. .	13.	26.3	25 45.39	26.12	0.00	VII.	8	3.3	35 28.62	23.4	2.82	26 11.51	35 54.2
9	8	. .	. .	48.2	1.2	15.5	. .	. .	29 1.43	26.11	0.00	VI.	2	8.12	9 6.93	23.2	0.80	29 27.53	9 30.9
10	10	. .	. .	. .	. .	29.3	43.3	. .	33 15.77	26.11	0.00	VI.	9	11.11	34 33.28	22.8	2.74	33 41.88	34 58.8
11	8	47.	1.2	14.4	28.2	. .	. .	. .	36 28.20	26.10	0.00	IV.	3	8.3	14 1.65	22.6	1.16	36 54.30	14 25.4
12	9	. .	. .	. .	. .	38.5	52.	. .	37 24.70	26.10	0.00	VII.	1	3.36	1 48.57	22.5	0.27	37 50.80	2 11.3
13	7	. .	. .	. .	. .	52.2	6.	. .	38 38.57	26.10	0.00	VI.	9	10.45	34 20.18	22.4	2.72	39 4.67	34 45.3
14	9	. .	. .	. .	35.	48.5	2.	. .	40 34.76	26.10	0.00	X.	9	3.47	40 48.16	22.3	3.22	41 0.86	41 13.7
15	10	. .	. .	39.5	53.5	. .	. .	. .	42 53.27	26.09	0.00	V.	7	4.46	31 21.58	22.1	2.48	43 19.36	31 46.2
16	6.7	. .	. .	. .	13.	27.	40.5	. .	45 13.10	26.09	0.00	VI.	10	6.45	47 20.06	21.9	3.71	45 39.19	47 45.7
17	8	. .	. .	. .	. .	2.	15.5	. .	47 48.22	26.09	0.00	IV.	10	8.465	48 21.49	21.7	3.79	48 14.31	48 47.0
18	6.7	. .	. .	. .	. .	23.	36.5	50.5	49 9.20	26.08	0.00	VII.	5	6.385	23 16.89	21.6	1.86	49 35.28	23 40.4
19	9	. .	. .	15.	28.4	. .	. .	. .	51 28.39	26.08	0.00	V.	5	2.53	21 23.49	21.4	1.73	51 54.47	21 46.6
20	8	. .	. .	. .	. .	. .	. .	40.	52 58.98	26.08	0.00	VII.	10	3.49	45 51.12	21.2	3.60	52 25.06	46 15.9
21	8	. .	. .	. .	. .	. .	52.	6.	53 24.74	26.08	0.00	VII.	8	2.14	35 3.32	21.2	2.77	53 50.82	35 27.3
22	6.7	. .	. .	. .	. .	. .	. .	9.3	54 27.92	26.08	0.00	VII.	4	6.7	18 1.81	21.1	1.47	54 54.00	18 24.4
23	9	17.	31.5	. .	. .	. .	. .	. .	56 58.77	26.08	0.00	II.	7	4.12	31 4.31	20.9	2.46	57 24.85	31 27.7
24	7	. .	58.7	12.2	25.5	. .	. .	. .	15 58 25.60	26.07	−0.01	IV.	1	5.50	2 56.48	20.7	0.36	15 58 51.66	3 17.5
25	7.8	. .	. .	29.3	43.	56.3	. .	. .	16 0 42.67	26.07	0.01	V.	2	10.54	10 28.74	20.5	0.90	16 1 8.73	10 50.1
26	6.7	. .	. .	4.5	18.	32.	. .	. .	4 17.92	26.07	−0.01	V.	1	3.23	1 42.31	20.2	0.27	4 43.98	2 2.8
27	9	. .	. .	. .	55.	. .	. .	. .	6 54.85	26.07	0.00	IV.	8	4.26	36 10.23	20.0	2.86	7 20.92	36 33.1
28	10	. .	. .	. .	. .	. .	46.	59.5	7 18.47	26.06	0.00	VII.	7	5.585	31 57.82	19.9	2.54	7 44.53	32 20.3
29	9	. .	0.	13.	26.4	. .	. .	. .	12 26.87	26.06	0.00	IV.	8	6.13	37 4.18	19.5	2.93	12 52.93	37 26.6
30	10	. .	. .	. .	50.	15.5	. .	. .	14 49.84	26.06	+0.01	V.	8	11.41	39 49.53	19.3	3.14	15 15.91	40 12.0
31	9	. .	. .	. .	. .	8.3	22.	35.	15 54.25	26.06	−0.01	VII.	2	13.2	6 34.04	19.2	0.61	16 20.30	6 53.8
32	9	13.	27.5	41.	55.	8.4	. .	. .	18 54.69	26.05	0.00	V.	5	8.15	24 5.86	18.9	1.93	19 20.74	24 26.7
33	9	. .	. .	. .	22.3	. .	. .	. .	20 22.15	26.05	+0.01	IV.	8	8.30	38 13.27	18.8	3.02	20 48.21	38 35.1
34	6	. .	. .	. .	. .	. .	. .	20.5	20 39.49	26.05	0.01	VII.	10	4.59	46 26.42	18.7	3.65	21 5.55	46 48.8
35	9	58.	13.	. .	. .	. .	. .	. .	24 40.10	26.05	+0.01	II.	9	2.42	40 16.63	18.3	3.18	25 6.16	40 38.1
36	7	. .	37.2	51.	4.5	18.	. .	. .	32 4.36	26.04	−0.01	V.	2	9.52	9 57.47	17.6	0.86	32 30.39	10 15.9
37	10	. .	. .	. .	. .	25.	39.	. .	37 11.47	26.04	0.00	VII.	8	1.20	35 6.59	17.1	2.78	37 37.51	35 26.5
38	9	. .	. .	. .	. .	. .	8.	21.5	38 40.39	26.04	0.00	VII.	3	9.40	14 50.21	16.9	1.22	39 6.43	15 8.3
39	7	. .	. .	. .	. .	. .	38.	52.	40 10.65	26.04	0.00	VII.	4	3.585	21 56.20	16.8	1.76	40 36.69	22 14.8
40	8	. .	. .	. .	. .	0.	13.5	27.5	41 46.25	26.04	0.00	VII.	7	9.54	33 56.57	16.6	2.69	42 12.29	34 15.9
41	9	. .	. .	7.5	21.	35.	. .	. .	44 21.21	26.04	+0.01	V.	10	4.11	48 33.77	16.4	3.71	44 47.26	48 53.9
42	9	. .	. .	. .	23.4	37.	50.5	. .	45 23.22	26.04	0.00	VI.	3	10.22	15 11.58	16.3	1.26	45 49.26	15 29.1
43	9	. .	. .	. .	. .	. .	. .	42.	46 0.60	26.03	0.00	VII.	4	4.43	17 19.45	16.2	1.41	48 26.63	17 37.1
44	8	. .	5.5	18.2	32.	. .	. .	. .	50 32.36	26.03	+0.01	IV.	9	11.52	44 54.12	15.7	3.53	50 58.40	45 13.4
45	10	0.	14.5	27.	. .	. .	. .	. .	52 41.23	26.03	0.00	IV.	3	12.55	16 28.88	15.5	1.36	54 7.26	16 45.7
46	10	. .	50.5	3.3	14.	. .	. .	. .	54 18.00	26.03	0.00	IV.	8	6.24	37 9.73	15.3	2.94	54 44.03	37 28.0
47	9	. .	. .	. .	55.8	10.5	. .	. .	55 56.19	26.03	0.00	VI.	4	11.2	20 30.75	15.1	1.66	56 22.22	20 47.5
48	10	. .	. .	. .	. .	31.	44.	58.2	16 57 16.93	26.03	0.00	VII.	4	11.33	20 46.19	15.0	1.68	16 57 42.96	21 2.9
49	8	. .	46.	58.5	12.5	26.	. .	. .	17 1 12.35	+26.03	+0.01	VI.	9	11.42	−44 48.92	−14.6	−3.52	17 1 38.39	−24 45 7.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
June 20,	17	+ 22.47	g 0.062	− 0.26	+ 0.77	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h, m.	in.	°	°

REMARKS.

(168) 20. Minutes assumed as 51 instead of 52.
(168) 30. Transit over T. V is assumed to have been at $3^s.5$ instead of $15^s.5$.
(168) 31. Hor. thread assumed as 1 instead of 2.
(168) 37. Micrometer reading assumed as $2^r.20$ instead of $1^r.20$.
(168) 39. Micrometer thread assumed as 5 instead of 4.
(168) 41. Micrometer reading assumed as $9^r.11$.
(168) 43. Minutes assumed as 48 instead of 46.
(168) 45. Minutes assumed as 53 instead of 52.
(168) 46. Transit over T. IV assumed as 19^s instead of 14^s.
(168) 49. Double; observed second; other, first magnitude.

ZONE 168. JUNE 20. B. BELT, −24° 23′. $D_0 = -24° 0′ 0″$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	10	. .	. .	6.	19.5	33.5	. .	. .	17 3 19.50	+26.03	0.00	VI.	3	12.34	−16 18.14	−14.3	−1.34	17 3 45.53	−24 16 33.8
51	10	. .	. .	9.5	23.	. .	. .	. .	5 23.03	26.03	0.00	IV.	7	7.14	32 36.24	14.1	2.58	5 49.06	32 52.9
52	10	. .	. .	. .	45.	. .	. .	. .	6 44.85	26.03	+0.01	IV.	10	8.19	48 7.62	14.0	3.78	7 10.89	48 25.4
53	7.9	. .	. .	. .	. .	. .	59.5	13.5	7 32.04	26.03	+0.01	VII.	8	8.39	38 17.46	13.9	3.02	7 58.08	38 34.4
54	10	. .	. .	. .	. .	51.3	. .	19.	9 37.58	26.02	0.00	VII.	4	9.52	19 55.26	13.6	1.61	10 3.60	20 10.5
55	9	. .	. .	. .	29.	45.	. .	. .	11 30.07	26.02	0.00	V.	7	4.32	31 14.52	13.4	2.47	11 56.09	31 30.4
56	9	. .	. .	. .	. .	. .	6.4	19.5	12 38.75	26.02	+0.01	VII.	10	7.38	47 46.59	13.3	3.75	13 4.78	48 3.6
57	7	49.	3.	16.	30.	. .	. .	. .	15 29.93	26.02	−0.01	IV.	1	11.29	5 47.42	13.0	0.56	15 55.94	6 1.0
58	6	. .	. .	. .	. .	0.	13.	. .	15 45.95	26.02	0.01	V.	1	3.25	1 43.32	13.0	0.25	17 11.96	1 56.6
59	10	. .	56.5	. .	23.5	. .	. .	. .	19 23.61	26.02	0.01	V.	3	4.125	12 5.38	12.6	1.03	19 49.62	12 19.0
60	10	. .	. .	10.	23.2	37.2	. .	. .	23 23.28	26.02	−0.01	VI.	3	3.585	11 58.19	12.1	1.01	23 49.29	12 11.3
61	10	. .	. .	. .	. .	49.	2.5	. .	24 35.22	26.02	+0.01	VII.	9	3.34	40 42.66	12.0	3.21	25 1.25	40 57.9
62	9	. .	. .	. .	. .	10.	23.5	37.5	17 25 56.24	+26.02	0.00	VII.	7	4.005	−30 58.32	−11.9	−2.45	17 26 22.26	−24 31 12.7

ZONE 169. JUNE 26. P. BELT, −20°. $D_0 = -19° 35′ 0″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	37.4	51.9	. .	17.4	. .	. .	. .	15 42 17.82	+29.09	0.00	IV.	7	5.3	−31 30.18	−64.0	−2.37	15 42 46.91	−20 7 36.6
2	4	. .	. .	56.2	. .	22.9	. .	. .	44 9.31	29.09	−0.01	V.	2	4.29	6 44.33	63.8	0.98	44 38.39	19 42 49.1
3	10	. .	. .	. .	. .	48.9	. .	. .	45 35.67	29.08	+0.01	V.	10	4.14	46 4.05	63.6	3.21	46 4.76	20 22 10.9
4	10	. .	. .	54.9	. .	21.9	. .	. .	47 8.50	29.08	+0.01	V.	10	0.43	44 47.90	63.4	3.11	47 37.59	20 54.4
5	9	43.4	. .	9.9	. .	. .	. .	. .	56 23.32	29.07	0.00	III.	5	11.24	25 41.17	62.3	2.04	56 52.39	1 45.5
6	3	. .	. .	19.9	. .	. .	. .	13.	15 57 33.24	29.07	+0.01	III.	8	11.33	39 15.26	62.1	2.81	15 58 2.32	15 20.2
7	11	. .	53.5	. .	19.9	. .	. .	. .	16 0 19.99	29.07	0.00	IV.	8	5.32	36 43.51	61.8	2.66	16 0 49.06	12 48.0
8	10	. .	. .	. .	42.9	. .	9.9	. .	1 43.08	29.07	0.00	VI.	5	7.59	23 57.71	61.6	1.94	2 12.15	20 0 1.2
9	11	. .	. .	. .	. .	. .	. .	7.	5 26.83	29.06	0.00	VII.	3	9.30	14 45.24	61.1	1.43	5 55.89	19 50 47.8
10	8	. .	18.4	31.9	44.2	. .	. .	. .	7 44.60	29.06	−0.01	IV.	2	5.15	7 37.83	60.9	1.01	8 13.65	43 39.7
11	8	12.4	25.4	. .	. .	. .	. .	. .	9 52.21	29.06	0.00	II.	3	9.31	14 45.88	60.6	1.43	10 21.27	50 47.9
12	8	. .	23.	. .	49.1	. .	. .	. .	10 49.21	29.06	−0.01	II.	1	9.17	4 40.72	60.5	0.85	11 18.26	40 42.1
13	10	. .	. .	. .	. .	. .	. .	55.	11 14.77	29.06	0.01	VII.	2	8.9	9 5.30	60.4	1.09	11 43.82	45 6.8
14	3	11.9	24.2	37.9	. .	. .	. .	. .	14 51.13	29.06	−0.01	VI.	1	10.42	4 53.36	60.0	0.88	15 20.18	19 40 54.2
15	10	. .	. .	53.9	. .	20.	. .	. .	23 7.10	29.05	+0.01	V.	10	11.1	49 29.27	58.9	3.44	23 36.16	20 25 31.6
16	11	39.	. .	. .	. .	. .	. .	. .	26 19.12	29.05	0.00	I.	4	11.0	20 29.62	58.5	1.75	26 48.17	19 56 29.9
17	10	. .	57.9	. .	24.9	. .	. .	. .	27 24.69	29.05	0.00	IV.	8	8.21	38 8.72	58.3	2.77	27 53.74	20 14 9.8
18	6	35.1	49.2	3.1	15.2	. .	. .	. .	31 15.65	29.05	0.00	II.	6	13.10	30 35.62	57.8	2.32	31 44.70	20 6 35.7
19	10	. .	. .	45.5	. .	12.2	. .	. .	32 58.71	29.04	0.00	III.	4	5.20	17 38.42	57.6	1.57	33 27.75	19 53 37.6
20	10	. .	. .	. .	. .	. .	. .	57.	34 17.31	29.04	+0.01	VII.	10	8.39	48 17.43	57.4	3.37	34 46.36	20 24 18.2
21	9	58.1	12.2	25.3	. .	. .	. .	. .	37 38.41	29.04	0.00	III.	3	7.44	13 21.79	56.9	1.33	38 7.45	19 49 20.0
22	9	. .	2.9	15.	. .	. .	. .	. .	39 28.72	29.04	0.00	III.	3	4.33	11 45.46	56.7	1.23	39 57.76	47 43.4
23	10	. .	. .	. .	. .	. .	. .	8.9	39 28.70	29.04	0.00	VII.	3	4.33	11 45.24	56.7	1.23	39 57.74	19 47 43.2
24	10	. .	. .	33.9	. .	0.1	. .	. .	41 47.11	29.04	+0.01	V.	10	3.46	45 49.93	56.4	3.22	42 16.16	20 21 49.6
25	8	24.9	39.8	51.8	. .	. .	. .	. .	44 5.53	29.04	0.00	II.	6	9.2	33 30.58	56.0	2.50	44 34.57	20 9 29.1
26	11	. .	54.5	. .	20.1	. .	. .	. .	46 20.50	29.04	0.00	IV.	3	10.48	15 24.85	55.7	1.44	46 49.54	19 51 22.0
27	11	. .	. .	. .	22.9	. .	. .	. .	48 9.46	29.04	−0.01	IV.	1	6.19	2 40.85	55.4	0.71	48 38.49	38 37.0
28	11	. .	. .	. .	. .	39.9	. .	. .	50 26.54	29.04	0.00	V.	4	6.30	18 13.73	55.1	1.60	50 55.58	19 54 10.4
29	10	13.5	27.6	. .	. .	. .	. .	. .	51 54.04	29.04	0.00	II.	8	5.3	36 28.76	54.9	2.67	52 23.08	20 12 26.3
30	9	. .	. .	. .	. .	. .	. .	34.9	52 54.98	29.04	0.00	VII.	7	5.3	31 29.90	54.8	2.38	53 24.02	7 27.1
31	9	55.2	. .	22.9	. .	. .	. .	. .	54 35.88	29.04	0.00	III.	8	11.2	39 29.87	54.6	2.85	55 4.92	15 27.3
32	10	. .	. .	. .	. .	. .	. .	8.9	16 54 29.02	+29.04	0.00	VII.	7	11.7	−34 33.45	−54.6	−2.56	16 54 58.06	−20 10 30.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
June 26,	17	+ 25.51	l 0.010	− 0.22	+ 0.75	

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(168) 58. Minutes assumed as 16 instead of 17.
(169) 2. Micrometer reading assumed as $3^{r}.29$ instead of $4^{r}.29$.
(169) 4. Micrometer reading assumed as $1^{r}.43$ instead of $0^{r}.43$.
(169) 6. Micrometer reading assumed as $10^{r}.33$ instead of $11^{r}.33$.
(169) 12. Double.
(169) 14. Micrometer reading assumed as $11^{r}.42$ instead of $12^{r}.42$.
(169) 19. Double; other two near.
(169) 21. Micrometer reading assumed as $6^{r}.44$ instead of $7^{r}.44$.
(169) 22. Micrometer reading assumed as $3^{r}.33$ instead of $4^{r}.33$. } Evidently the same star.
(169) 23. Micrometer reading assumed as $3^{r}.33$ instead of $4^{r}.33$. }
(169) 25. Hor. thread assumed as 7 instead of 6.
(169) 27. Transit over T. V assumed as recorded over T. IV, and micrometer reading as $5^{r}.19$ instead of $6^{r}.19$.
(169) 32. Right ascension differs $3^{s}.9$ from Arg. Z. 211, 60; 305, 71, and declination 20′.

ZONE 169. JUNE 26. P. BELT, −20°. $D_0 = -19° 35' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	10	. .	. .	. .	. .	. .	49.9	3.5	16 55 23.54	+29.04	+0.01	VI.	8	13.37	−40 47.94	−54.4	−2.93	16 55 52.59	−20 16 45.3
34	10	. .	. .	. .	. .	49.9	. .	17.9	57 37.04	29.04	−0.01	V.	1	8.4	4 4.03	54.1	0.79	58 6.07	19 39 58.9
35	9	. .	. .	. .	. .	24.9	. .	51.2	16 59 11.37	29.04	0.00	V.	5	10.1	24 59.32	53.9	2.00	16 59 40.41	20 0 55.2
36	9	. .	. .	46.4	. .	13.1	. .	. .	17 7 59.80	29.04	0.00	V.	8	8.11	38 3.65	53.5	2.77	17 2 28.84	20 13 59.9
37	10	. .	. .	43.5	. .	8.8	. .	. .	3 56.29	29.04	+0.01	V.	10	8.28	48 12.12	53.2	3.38	4 25.34	24 8.7
38	10	. .	29.5	. .	55.5	. .	. .	. .	5 55.76	29.04	0.00	II.	6	11.45	29 52.77	52.9	2.28	6 24.80	5 48.0
39	10	. .	58.5	. .	. .	38.1	. .	. .	9 25.01	29.04	0.00	V.	7	12.5	36 3.44	52.4	2.58	9 54.05	20 11 58.4
40	9	. .	. .	. .	. .	53.4	. .	. .	10 40.01	29.04	0.00	V.	3	7.0	13 29.85	52.2	1.33	11 9.05	19 49 23.4
41	10	. .	. .	3.	. .	. .	. .	. .	12 16.24	29.04	0.00	III.	6	10.15	29 7.48	52.0	2.24	12 45.28	20 5 1.7
42	10	. .	. .	. .	20.	. .	. .	. .	13 19.85	29.04	0.00	IV.	6	9.0	28 29.69	51.8	2.20	13 48.89	4 23.7
43	10	. .	. .	. .	. .	. .	. .	14.5	13 34.52	29.04	0.00	VII.	6	7.52	27 55.12	51.8	2.16	14 3.56	20 3 49.1
44	11	. .	. .	. .	48.1	. .	. .	. .	15 47.95	29.04	0.00	IV.	5	4.1	21 57.82	51.4	1.83	16 16.99	19 57 51.1
45	11	. .	. .	. .	. .	3.	. .	. .	17 49.72	29.04	0.00	V.	7	12.4	35 2.44	51.1	2.59	18 18.76	20 10 56.1
46	11	. .	. .	. .	. .	14.9	. .	. .	19 1.64	29.04	0.00	V.	8	10.28	39 12.73	50.9	2.84	19 30.68	15 6.5
47	10	. .	. .	. .	. .	35.9	. .	. .	22 22.59	29.04	0.00	V.	6	10.27	29 13.56	50.4	2.24	22 51.63	5 6.2
48	10	. .	. .	2.9	. .	. .	. .	. .	25 16.22	29.04	0.00	III.	7	12.10	34 50.34	50.0	2.60	25 45.26	10 42.9
49	9	. .	. .	. .	. .	58.1	. .	. .	26 44.84	29.04	+0.01	V.	8	12.16	40 7.19	49.8	2.90	27 13.89	20 15 59.9
50	10	. .	20.2	. .	. .	. .	. .	. .	28 46.76	29.04	0.00	II.	3	13.47	16 54.98	49.5	1.52	29 15.80	19 52 46.0
51	10	. .	. .	. .	. .	34.5	. .	. .	32 34.35	29.04	0.00	VII.	4	4.50	17 23.05	48.9	1.55	33 3.39	19 53 13.5
52	10	. .	. .	. .	. .	. .	35.8	. .	33 9.31	29.04	0.00	VI.	6	3.13	25 34.59	48.8	2.04	33 38.35	20 1 25.4
53	10	. .	. .	2.9	. .	30.	. .	. .	36 16.45	29.04	0.00	V.	7	7.145	32 21.59	48.4	2.46	36 45.49	20 8 12.5
54	10	. .	. .	. .	19.4	. .	45.4	. .	39 19.10	29.04	0.00	VI.	3	5.8	12 33.28	47.9	1.27	39 48.14	19 48 42.5
55	10	. .	. .	. .	. .	. .	. .	52.9	40 12.82	29.04	0.00	VII.	5	2.54	21 23.76	47.8	1.78	40 41.86	19 57 13.3
56	10	. .	. .	. .	. .	59.9	. .	27.1	42 46.84	29.04	0.00	VII.	6	3.34	25 45.03	47.4	2.05	43 15.88	20 1 34.5
57	10	. .	. .	. .	. .	38.1	. .	4.9	44 24.73	29.04	0.00	VII.	3	10.13	15 6.92	47.1	1.42	44 53.77	19 50 55.4
58	11	. .	24.1	. .	. .	. .	17.	. .	46 50.64	29.04	0.00	VI.	7	11.30	34 45.21	46.8	2.58	47 19.68	20 10 34.6
59	11	. .	. .	27.4	. .	53.5	. .	. .	49 40.38	29.05	0.00	III.	5	13.27	26 43.18	46.3	2.10	50 9.43	20 2 31.6
60	10	. .	. .	30.	. .	. .	. .	. .	51 43.12	29.05	0.00	III.	4	11.27	15 44.49	46.0	1.44	52 12.17	19 51 30.9
61	10	. .	. .	. .	. .	. .	. .	25.	51 44.92	29.05	0.00	VII.	4	12.31	21 15.50	46.0	1.78	52 13.97	57 3.3
62	10	2.5	. .	29.5	. .	. .	. .	. .	54 42.54	29.05	0.00	III.	3	5.22	12 40.43	45.5	1.26	55 11.59	48 27.2
63	9	. .	45.5	. .	. .	. .	. .	. .	56 12.01	29.05	−0.01	II.	3	0.42	10 19.16	45.3	1.12	56 41.05	46 5.6
64	10	. .	. .	. .	. .	. .	. .	14.	56 33.74	29.05	−0.01	VII.	2	4.23	7 11.33	45.3	0.94	57 2.78	42 57.6
65	10	24.9	. .	. .	. .	. .	. .	. .	59 5.00	29.05	0.00	I.	4	4.10	17 2.88	44.8	1.52	17 59 34.05	52 49.2
66	6	. .	. .	. .	42.9	. .	. .	. .	17 59 42.75	29.05	0.00	IV.	4	5.28	17 42.48	44.7	1.56	18 0 11.80	53 28.7
67	7	12.9	26.2	. .	. .	. .	. .	. .	18 1 52.88	29.05	0.00	I.	4	2.22	16 8.42	44.4	1.47	2 21.93	51 54.3
68	10	55.	9.	. .	. .	. .	. .	. .	3 35.25	29.05	−0.01	II.	2	2.55	10 59.41	44.1	1.16	4 4.29	46 44.7
69	10	19.5	. .	46.4	. .	. .	. .	. .	5 59.59	29.06	0.00	III.	5	5.16	22 35.61	43.7	1.86	6 28.65	58 21.2
70	10	. .	. .	. .	. .	. .	. .	1.	6 20.87	29.06	0.00	VII.	4	4.24	17 9.94	43.7	1.53	6 49.93	52 55.2
71	9	. .	. .	. .	. .	31.9	. .	58.	8 18.11	29.06	−0.01	V.	2	4.59	7 29.74	43.4	0.96	8 47.16	43 14.1
72	9	. .	. .	. .	12.	. .	38.1	. .	10 11.76	29.06	0.01	VI.	2	5.11	11 37.72	43.1	1.20	10 40.81	47 22.0
73	10	. .	. .	. .	. .	. .	. .	19.	11 38.74	29.06	0.01	VII.	2	4.57	7 28.48	42.8	0.95	12 7.79	43 12.2
74	11	. .	. .	19.4	. .	45.5	. .	. .	13 32.27	29.06	0.01	.	3	8.30	14 15.27	42.5	1.36	14 1.32	49 59.1
75	10	. .	. .	. .	. .	1.5	. .	28.1	14 47.93	29.06	−0.01	.	1	7.48	1 54.96	42.3	0.62	15 16.98	37 37.9
76	10	33.5	. .	59.9	. .	. .	. .	. .	19 13.27	29.07	0.00	I.	3	12.7	16 4.40	41.6	1.46	19 42.34	51 47.5
77	10	. .	. .	. .	. .	34.9	. .	1.	20 21.06	29.07	−0.01	VII.	1	2.58	5 58.21	41.4	0.89	20 50.12	19 41 40.5
78	10	. .	. .	. .	37.9	. .	. .	. .	22 37.75	29.07	0.00	IV.	6	6.52	27 25.15	41.1	2.14	23 6.82	20 3 8.4
79	10	. .	. .	2.1	. .	28.9	. .	. .	24 15.39	29.07	0.00	V.	4	12.32	21 16.26	40.8	1.78	24 44.46	19 56 58.8
80	8	. .	. .	. .	. .	. .	29.9	45.8	25 3.56	29.07	0.00	VII.	4	5.42	17 49.27	40.6	1.57	25 32.63	53 31.4
81	10	4.5	18.2	. .	. .	. .	. .	. .	18 27 44.69	+29.08	0.00	II.	4	5.35	−17 45.90	−40.2	−1.57	18 28 13.77	−19 53 27.7

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1848. h. m.	in.	°	°

REMARKS.

(169) 39. Micrometer reading assumed as $14^{r}.5$ instead of $12^{r}.5$.
(169) 48. Micrometer reading assumed as $11^{r}.40$ instead of $12^{r}.10$.
(169) 51. Transit over T. III assumed as recorded over T. IV, to agree with Mural Z., 1849, June 22.
(169) 53. Micrometer reading assumed as $6^{r}.45$ instead of $7^{r}.145$.
(169) 60. Hor. thread assumed as 3 instead of 4.
(169) 68. Micrometer reading assumed as $11^{r}.55$ instead of $2^{r}.55$.
(169) 72. Micrometer reading assumed as $13^{r}.11$ instead of $5^{r}.11$.
(169) 75. Micrometer reading assumed as $3^{r}.48$ instead of $7^{r}.48$.
(169) 77. Hor. thread assumed as 2 instead of 1, and micrometer reading as $1^{r}.58$ instead of $2^{r}.58$.
(169) 80. T. VII assumed as $43^{s}.8$ instead of $45^{s}.8$.

ZONE 169. JUNE 26. P. BELT, −20°. $D_0 = -19° 35' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
82	9	. .	. .	. .	31.9	. .	57.9	. .	18 28 31.61	+29.08	−0.01	IV.	2	5.55	− 7 58.00	−40.1	−0.97	18 29 0.68	−19 43 39.1
83	9	. .	. .	. .	. .	44.5	. .	10.1	30 30.73	29.08	+0.01	V.	8	4.396	36 17.06	39.7	2.69	30 59.82	20 11 59.5
84	9	. .	. .	. .	. .	15.5	. .	. .	33 2.30	29.08	+0.01	V.	10	13.40	51 19.69	39.3	3.55	33 31.39	20 27 2.5
85	8	. .	14.9	. .	40.2	. .	. .	. .	36 40.73	29.08	−0.01	IV.	2	9.239	9 43.33	38.7	1.07	37 9.80	19 45 23.1
86	9	. .	. .	. .	. .	30.1	. .	. .	38 16.77	29.09	0.00	V.	5	11.10	25 34.11	38.4	2.04	38 45.86	20 1 14.6
87	10	. .	. .	12.	. .	38.	. .	. .	40 25.02	29.09	0.00	V.	7	11.30	34 45.30	38.0	2.60	40 54.11	20 10 25.9
88	10	. .	. .	. .	. .	0.9	. .	27.2	41 47.29	29.09	0.00	V.	3	12.50	11 27.22	37.8	1.18	42 16.38	19 47 6.2
89	10	. .	1.9	. .	. .	40.	. .	. .	44 27.58	29.10	0.00	II.	5	5.31	22 43.08	37.3	1.86	44 56.68	19 58 22.2
90	11	. .	. .	. .	. .	. .	. .	6.	45 26.02	29.10	0.00	VII.	6	7.4	27 0.67	37.2	2.12	45 55.12	20 2 40.0
91	10	. .	. .	. .	. .	33.5	. .	. .	47 20.11	29.10	−0.01	V.	3	7.13	13 36.40	36.9	1.30	47 49.20	19 49 14.6
92	10	. .	. .	. .	. .	. .	54.5	. .	48 28.03	29.10	0.00	VI.	4	6.49	18 23.22	36.7	1.59	48 57.13	54 1.5
93	9	. .	50.1	3.1	. .	. .	. .	. .	51 16.41	29.10	0.00	III.	4	2.9	16 2.12	36.2	1.44	51 45.51	51 39.8
94	9	. .	19.5	. .	. .	59.9	. .	. .	53 46.19	29.11	−0.01	V.	1	1.54	0 57.45	35.8	0.55	54 15.29	36 33.8
95	9	. .	. .	. .	51.	. .	. .	. .	55 50.85	29.11	0.00	IV.	4	7.42	18 50.06	35.4	1.62	56 19.96	54 27.1
96	10	. .	. .	. .	. .	. .	41.	. .	57 14.53	29.11	0.00	VI.	4	4.45	17 20.69	35.2	1.52	57 43.64	52 57.4
97	9	. .	. .	. .	53.5	. .	20.	. .	18 58 53.45	29.11	−.010	IV.	3	9.46	14 53.59	34.9	1.37	18 59 22.55	19 50 29.9
98	9	. .	. .	. .	28.4	. .	. .	. .	19 0 28.35	29.12	0.00	IV.	5	12.475	26 23.30	34.6	2.08	19 0 57.47	20 2 0.0
99	10	. .	. .	3.9	59.9	. .	. .	. .	2 17.18	29.12	0.00	IV.	7	10.19	34 9.53	34.3	2.57	2 46.30	20 9 46.4
100	9	. .	. .	. .	. .	. .	. .	. .	3 46.48	29.12	−0.01	III.	2	7.5	8 18.14	34.1	1.00	4 15.59	19 43 53.2
101	9	27.2	. .	54.1	. .	. .	. .	. .	6 7.34	29.12	0.00	III.	6	5.35	26 46.29	33.7	2.11	6 36.46	20 2 22.1
102	10	. .	. .	15.1	. .	41.9	. .	. .	8 28.26	29.13	0.00	V.	4	5.40	17 48.51	33.3	1.56	8 57.49	19 53 23.4
103	10	. .	. .	. .	. .	. .	56.6	. .	9 30.11	29.13	0.00	VI.	5	7.30	23 43.09	33.1	1.92	9 59.24	19 59 18.1
104	10	. .	. .	. .	5.	. .	31.	. .	12 4.67	29.13	0.00	VI.	7	9.54	33 56.80	32.6	2.55	12 33.80	20 9 32.0
105	10	. .	. .	. .	. .	. .	18.9	. .	13 52.37	29.14	+0.01	VI.	8	9.11	38 33.81	32.3	2.84	14 21.52	14 9.0
106	10	. .	. .	. .	. .	. .	. .	46.5	15 6.46	29.14	0.00	VII.	5	9.2	24 29.32	32.1	1.97	15 35.60	20 0 3.4
107	9	. .	. .	49.	. .	15.	. .	. .	26 1.86	29.16	0.00	V.	4	6.46	18 21.80	30.3	1.59	26 31.02	19 53 53.7
108	8	. .	. .	30.5	. .	57.	. .	. .	31 43.87	29.17	+0.01	V.	10	4.34	45 43.88	29.3	3.29	31 13.05	20 21 16.5
109	10	. .	. .	. .	. .	. .	. .	53.5	32 13.51	29.17	0.00	VII.	6	5.15	27 6.21	29.2	2.12	32 42.68	2 37.5
110	10	. .	. .	. .	. .	11.5	. .	. .	34 58.17	29.17	0.00	V.	5	9.36	24 46.72	28.8	1.99	35 27.34	0 17.5
111	4	. .	41.5	54.	. .	20.1	. .	. .	37 7.42	29.18	0.00	V.	6	15.54	31 28.15	28.4	2.44	37 36.60	6 59.0
112	8	57.1	. .	. .	. .	. .	50.	. .	42 37.90	29.19	0.00	V.	6	9.36	28 47.82	27.5	2.25	43 7.09	20 4 17.6
113	10	. .	35.2	. .	1.2	. .	. .	. .	45 1.39	29.19	−0.01	IV.	2	12.56	11 30.29	27.0	1.15	45 30.57	19 46 58.4
114	8	. .	. .	. .	. .	23.4	. .	. .	46 9.97	29.19	−0.01	V.	1	11.16	5 40.84	26.9	0.81	46 39.15	41 8.5
115	9	. .	. .	. .	26.6	. .	. .	. .	48 26.45	29.20	0.00	IV.	4	9.27	19 43.00	26.5	1.66	48 55.65	19 55 11.2
116	10	. .	. .	. .	. .	16.9	. .	. .	50 3.57	29.20	0.00	V.	5	9.15	24 36.12	26.2	1.98	50 32.77	20 0 4.3
117	9	. .	. .	. .	. .	15.5	. .	. .	57 2.14	29.20	0.00	V.	4	8.40	19 19.28	25.0	1.64	57 31.34	19 54 45.9
118	9	. .	. .	. .	. .	. .	. .	18.	19 58 37.68	29.20	−0.01	VII.	1	5.47	1 54.19	24.7	0.57	59 6.87	37 19.5
119	10	. .	. .	. .	. .	. .	. .	47.4	20 0 7.25	29.22	0.01	VII.	3	11.37	15 49.28	24.4	1.41	19 0 36.46	51 15.1
120	9	. .	. .	. .	. .	. .	. .	54.9	1 14.72	29.22	−0.01	VII.	3	7.2	13 30.61	24.2	1.27	20 1 43.93	19 48 56.1
121	11	. .	. .	. .	. .	. .	. .	16.9	3 37.05	29.23	+0.01	VII.	8	6.12	37 3.40	23.8	2.75	4 6.29	20 12 30.0
122	8	. .	. .	4.9	. .	31.9	. .	. .	11 18.52	29.25	+0.01	V.	10	5.55	46 54.97	22.5	3.39	11 47.78	20 22 20.9
123	9	. .	. .	. .	. .	. .	30.	. .	25 3.55	29.28	−0.01	VI.	3	4.58	12 28.24	20.1	1.20	25 32.82	19 47 49.5
124	10	. .	9.9	. .	. .	48.5	. .	. .	20 27 35.73	+29.28	+0.01	.	9	3.41	−45 18.82	−19.7	−3.30	20 28 5.02	−20 20 41.8

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(169) 84. Micrometer reading assumed as $14^r.40$ instead of $13^r.40$.
(169) 88. Hor. thread assumed as 2 instead of 3.
(169) 90. Micrometer reading assumed as $6^r.4$ instead of $7^r.4$.
(169) 99. Transits entirely discordant and incongruous; transit at $59^s.9$ assumed to belong to following star and to T. V.
(169) 100. Micrometer reading assumed as $6^r.35$ instead of $7^r.5$.
(169) 108. Minutes assumed as 30 instead of 31, and micrometer reading as $3^r.34$ instead of $4^r.34$.
(169) 109. Micrometer reading assumed as $6^r.15$ instead of $5^r.15$.
(169) 111. Micrometer reading assumed as $14^r.54$ instead of $15^r.54$.
(169) 112. Transit over T. VI is assumed to have been 5^s instead of 50^s.
(169) 118. Micrometer reading assumed as $3^r.47$ instead of $5^r.47$.
(169) 124. Micrometer reading assumed as $12^r.41$ instead of $3^r.41$.

ZONE 170. JULY 3. P. BELT, −20° 30′. D$_{\circ}$=−20° 8′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	54.5	. .	21.3	34.9	. .	. .	. .	16 34 34.62	+11.04	0.00	III.	3	12.39	−16 20.79	− 2.82	−1.50	16 34 45.66	−20 24 25.11
2	10	. .	. .	. .	. .	21.5	. .	. .	39 8.17	11.05	0.00	VII.	7	6.57	32 27.38	2.48	2.45	39 19.22	40 32.31
3	10	. .	. .	. .	. .	17.9	. .	. .	42 4.47	11.05	0.00	V.	3	7.506	13 55.36	2.25	1.35	42 15.52	21 58.96
4	7	. .	. .	. .	22.9	. .	49.5	. .	44 22.88	11.06	−0.01	VI.	1	3.7	1 34.17	2.07	0.63	44 33.93	9 36.87
5	10	. .	57.4	. .	23.4	. .	. .	. .	49 23.68	11.06	0.00	IV.	5	9.255	24 41.44	1.68	1.98	49 34.74	32 45.10
6	10	. .	4.5	17.1	. .	. .	. .	57.4	51 30.71	11.06	−0.01	VI.	3	5.51	12 54.96	1.51	1.29	51 41.76	20 57.76
7	10	. .	. .	. .	. .	11.9	. .	38.8	52 58.49	11.07	0.00	V.	3	8.22	14 11.20	1.39	1.36	53 9.56	22 13.95
8	8	. .	. .	. .	41.5	. .	7.9	. .	16 55 41.37	11.07	−0.01	V.	2	7.19	8 40.35	1.16	1.04	55 52.43	16 42.53
9	10	. .	. .	. .	14.5	. .	. .	. .	17 5 14.35	+11.08	0.00	IV.	4	2.26	−16 10.72	− 0.37	−1.48	17 5 25.43	−20 24 12.57

ZONE 171. JULY 10. P. BELT, −20° 30′. D$_{\circ}$=−20° 7′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	26.3	. .	53.5	. .	. .	17 16 39.88	+15.67	0.00	V.	7	3.13	−30 34.71	−13.16	−2.34	17 16 55.55	−20 38 20.2
2	10	. .	. .	. .	. .	. .	38.1	. .	18 11.56	15.67	0.00	V.	3	10.5	15 3.14	13.12	1.40	18 27.23	22 47.7
3	11	15.5	. .	42.3	. .	. .	. .	. .	22 55.60	15.66	0.00	III.	4	10.55	20 2.39	13.01	1.70	23 11.26	27 47.1
4	10	. .	47.4	0.5	13.4	27.4	. .	. .	24 13.83	15.66	0.00	V.	6	16.46	32 24.62	12.99	2.45	24 29.49	40 10.1
5	11	. .	. .	. .	. .	. .	23.1	. .	26 56.56	15.66	0.00	V.	3	6.48	8 24.70	12.93	0.99	27 12.22	16 8.6
6	8	. .	. .	. .	. .	. .	. .	59.2	28 19.10	15.66	0.00	VII.	6	7.21	27 39.48	12.91	2.16	28 34.76	35 24.6
7	10	. .	. .	. .	. .	19.1	. .	. .	30 5.76	15.65	0.00	V.	6	11.5	29 32.69	12.86	2.29	30 21.41	37 17.8
8	10	. .	. .	. .	. .	. .	. .	18.5	31 38.47	15.65	0.00	VII.	7	9.49	38 53.22	12.82	2.75	31 54.12	46 38.8
9	9	38.9	52.5	5.4	18.2	. .	. .	. .	38 18.87	15.64	+0.01	IV.	8	10.12	39 4.70	12.66	2.86	38 34.52	46 50.2
10	9	. .	48.5	0.9	14.4	27.4	. .	. .	40 14.50	15.64	+0.01	V.	8	10.38	39 17.78	12.61	2.87	40 30.15	47 3.3
11	10	. .	. .	30.9	44.4	. .	. .	. .	42 44.12	15.64	0.00	IV.	3	11.35	15 48.55	12.53	1.44	42 59.76	23 32.5
12	10	. .	. .	. .	. .	. .	16.4	. .	43 49.78	15.64	+0.01	VII.	8	14.34	41 16.52	12.50	3.00	44 5.43	49 2.0
13	10	. .	. .	. .	50.4	. .	17.4	. .	45 50.56	15.63	0.00	VII.	3	9.7	14 33.64	12.44	1.37	46 6.19	22 17.5
14	9	45.4	59.1	. .	. .	38.5	. .	. .	48 25.57	15.63	0.00	V.	6	8.52	28 25.63	12.39	2.20	48 41.20	36 10.2
15	8	9.2	22.4	. .	48.5	. .	. .	. .	50 48.90	15.63	−0.01	IV.	3	3.5	11 31.38	12.31	1.17	51 4.52	19 14.9
16	10	. .	. .	. .	. .	. .	21.4	. .	51 54.83	15.63	0.00	V.	5	5.26	22 40.65	12.28	1.86	52 10.46	30 24.8
17	8	. .	. .	. .	. .	. .	51.4	3.9	53 24.35	15.62	0.00	VI.	8	4.37	36 15.66	12.24	2.70	53 39.97	44 0.6
18	10	. .	. .	23.4	. .	50.1	. .	. .	55 36.79	15.62	0.00	V.	8	5.24	41 38.44	12.18	3.02	55 52.41	49 23.6
19	10	. .	. .	. .	21.4	. .	. .	. .	57 21.25	15.62	0.00	IV.	4	10.30	20 14.78	12.14	1.71	57 36.87	27 58.6
20	9	. .	. .	. .	38.5	. .	. .	. .	17 59 38.35	15.62	+0.01	IV.	10	8.43	48 19.72	12.05	3.45	17 59 53.98	56 5.2
21	10	31.4	. .	58.5	. .	. .	. .	. .	18 2 11.84	15.61	0.00	III.	8	5.8	36 31.37	11.99	2.71	18 2 27.45	44 16.1
22	9	. .	. .	. .	. .	. .	11.9	. .	2 45.34	15.61	0.00	VI.	4	8.39	19 18.69	11.98	1.66	3 0.95	27 2.3
23	10	. .	. .	. .	52.5	. .	. .	. .	4 52.35	15.61	0.00	IV.	7	9.17	33 38.26	11.90	2.53	5 7.96	41 22.7
24	5	. .	. .	. .	. .	13.5	. .	40.1	6 0.17	15.61	+0.01	VII.	8	8.56	38 26.10	11.87	2.82	6 15.79	46 10.8
25	7	. .	. .	. .	. .	. .	50.	3.5	7 23.41	15.61	0.00	VII.	6	7.14	27 35.96	11.83	2.16	7 39.02	35 20.0
26	11	42.5	56.1	9.2	. .	. .	. .	. .	18 11 22.51	+15.60	−0.01	III.	2	7.31	− 8 46.38	−11.71	−1.01	18 11 38.10	−20 16 29.1

ZONE 172. JULY 15. K. BELT, −25° 1′. D$_{\circ}$=−24° 37′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	53.6	. .	20.8	. .	. .	. .	. .	16 53 34.71	+16.47	0.00	.	3	5.2	−12 30.38	− 5.4	−1.02	16 52 51.18	−24 49 56.9
2	9	. .	. .	37.4	. .	5.2	. .	. .	53 51.06	16.47	−0.01	.	2	7.57	8 59.52	5.6	0.74	54 7.52	24 46 25.9
3	8.9	. .	. .	0.4	. .	27.1	. .	. .	55 13.90	16.47	+0.01	.	10	8.19	48 7.62	6.3	3.87	55 38.38	25 25 37.8
4	10	. .	. .	. .	. .	6.9	20.4	. .	55 53.02	16.47	0.01	.	8	8.36	38 16.30	6.6	3.06	56 9.50	15 46.0
5	10	. .	. .	. .	. .	35.2	. .	. .	16 58 21.44	+16.47	+0.01	.	8	7.22	−37 38.97	− 7.9	−3.01	16 58 37.92	−25 15 9.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
July 3,	17	+ 7.60	*l* 0.141			
July 10,	17	+ 12.22	*g* 0.016			
July 15,	16	+ 12.91	*l* 0.060	− 0.28	+ 0.82	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(170) 6. Transit over T. VI is assumed to have been erroneously recorded as over T. VII.
(171) 1. Nos. 4, 7, 9, 10, and 12 seem to be in error by quantities from 20″ to 40″ in declination.
(171) 5. Hor. thread assumed as 2 instead of 3.
(171) 8. Hor. thread assumed as 8 instead of 7.
(171) 18. Hor. thread assumed as 9 instead of 8.
(172) 1. Minutes of transit assumed as 52 instead of 53.

ZONE 173. JULY 17. K. BELT, −25° 1′. D₀=−24° 37′ 20″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	. .	50.3	. .	18 14 22.88	+23.71	−0.01	VI.	3	6.52	−12 55.44	−13.3	−1.04	18 14 46.58	−24 50 29.8
2	8	. .	. .	. .	. .	. .	. .	24.2	19 42.94	23.71	+0.01	VII.	9	8.37	43 15.44	12.9	3.55	20 6.66	25 20 51.0
3	9	. .	. .	. .	. .	38.7	. .	6.5	21 24.91	23.71	0.00	V.	5	3.30	21 42.15	12.7	1.72	21 48.62	24 59 16.6
4	9	. .	52.3	5.7	. .	. .	. .	. .	29 19.50	23.70	−0.01	.	3	5.00	12 29.37	12.0	0.96	29 43.19	24 50 2.3
5	9	. .	32.3	45.6	. .	. .	. .	. .	31 59.65	23.70	0.00	.	6	11.35	29 47.85	11.8	2.41	32 23.35	25 7 22.1
6	10	. .	49.2	2.1	. .	. .	. .	. .	33 16.39	23.69	0.00	.	7	7.34	32 46.33	11.7	2.67	33 40.08	10 20.7
7	6.7	30.9	45.5	58.6	. .	. .	. .	. .	35 12.73	23.69	0.00	.	7	7.39	31 48.34	11.5	2.67	35 36.42	25 9 22.5
8	9	52.7	7.0	. .	. .	. .	. .	. .	38 34.43	23.69	0.00	.	4	8.29	18 13.25	11.2	1.51	38 58.12	24 55 46.0
9	10	. .	28.8	. .	55.9	. .	. .	. .	39 55.99	23.69	−0.01	.	1	9.28	4 46.40	11.1	0.32	40 19.67	42 17.8
10	9	. .	. .	. .	. .	50.1	. .	17.9	40 36.22	23.69	0.01	.	2	11.28	10 45.91	11.1	0.82	40 59.90	48 17.8
11	9	. .	. .	. .	16.3	. .	44.2	. .	42 16.47	23.68	−0.01	.	2	13.51	11 58.01	10.9	0.92	42 40.14	49 29.8
12	9	5.9	20.2	. .	. .	. .	. .	. .	44 47.63	23.68	0.00	.	4	8.38	19 18.30	10.7	1.51	45 11.31	24 56 50.5
13	9	. .	56.5	9.4	. .	. .	. .	. .	46 23.73	23.68	+0.01	.	8	5.5	36 29.89	10.5	2.98	46 47.42	25 14 3.4
14	9	. .	. .	. .	8.4	22.2	. .	. .	47 8.28	23.68	−0.01	.	2	11.59	11 1.55	10.5	0.82	47 31.95	24 48 32.9
15	7.8	. .	17.3	30.8	44.5	. .	. .	. .	48 44.59	23.68	0.00	.	5	13.30	26 44.73	10.3	2.14	49 8.27	25 4 17.2
16	7.8	7.0	21.3	. .	. .	. .	. .	. .	50 48.85	23.68	0.00	.	6	14.14	31 8.01	10.2	2.52	51 12.53	25 8 40.7
17	9	. .	. .	. .	. .	. .	. .	7.2	55 25.58	23.68	−0.01	.	3	11.11	15 36.44	9.8	1.21	55 49.25	24 53 7.5
18	8.9	. .	. .	. .	. .	. .	. .	44.8	56 3.18	23.68	0.00	.	3	12.15	16 8.71	9.7	1.25	56 26.86	24 53 39.7
19	8	. .	. .	. .	. .	. .	59.9	. .	57 32.42	23.67	0.00	.	6	10.13	29 6.50	9.6	2.35	57 56.09	25 6 38.5
20	6.7	. .	. .	. .	. .	54.5	8.2	. .	18 58 40.70	23.67	−0.01	VII.	3	11.21	15 41.12	9.5	1.22	18 59 4.36	24 53 11.8
21	9	31.5	. .	59.0	. .	. .	. .	. .	19 3 12.66	23.67	−0.01	.	1	12.43	6 24.73	9.1	0.44	19 3 36.32	43 54.3
22	8	48.5	. .	15.7	. .	. .	. .	. .	6 29.70	23.66	0.00	.	4	11.40	20 50.07	8.8	1.64	6 53.36	58 20.5
23	9	. .	. .	31.4	. .	. .	. .	. .	10 44.93	23.66	−0.01	.	3	11.20	16 41.49	8.4	1.22	11 8.58	54 11.1
24	5.6	. .	. .	. .	. .	58.5	. .	. .	15 44.58	23.66	0.01	VII.	1	8.19	10 10.77	8.0	0.75	16 8.23	47 31.5
25	6.7	. .	. .	. .	. .	. .	. .	32.8	15 51.10	23.66	−0.01	VII.	2	9.5	4 34.45	8.0	0.29	16 14.75	24 42 2.7
26	5	. .	. .	. .	. .	. .	. .	52.2	19 27 10.83	+23.65	+0.01	VII.	7	12.16	−35 8.16	− 7.0	−2.88	19 27 34.49	−25 12 38.0

ZONE 174. JULY 18. P. BELT, −25° 1′. D₀=−24° 40′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	34.5	49.6	. .	. .	. .	. .	. .	16 37 16.77	+24.22	0.00	II.	7	10.44	−34 21.98	−19.5	−2.74	16 37 40.99	−25 15 4.2
2	10	. .	51.4	4.3	. .	. .	. .	. .	39 18.60	24.21	0.00	III.	7	9.6	33 32.68	19.4	2.68	39 42.81	25 14 14.8
3	9	. .	. .	. .	1.2	. .	28.4	. .	40 1.03	24.21	−0.01	VI.	2	5.11	7 35.65	19.4	0.63	40 25.23	24 48 15.7
4	10	. .	. .	1.1	. .	28.4	. .	. .	42 14.78	24.21	0.00	V.	8	4.37	35 45.48	19.3	3.28	42 38.99	25 16 28.1
5	10	. .	. .	. .	. .	47.4	. .	15.1	43 33.55	24.21	0.00	VII.	4	10.3	20 0.80	19.2	1.61	43 57.76	0 41.6
6	9	26.1	41.2	54.2	8.1	. .	. .	. .	46 8.20	24.20	0.00	IV.	7	15.2	36 32.21	19.1	2.93	46 32.40	25 17 14.2
7	7	41.4	55.6	. .	. .	. .	. .	. .	50 23.00	24.19	−0.01	II.	2	11.38	10 50.80	18.9	0.88	50 47.18	24 51 30.6
8	6	. .	. .	. .	. .	. .	. .	15.5	50 33.73	24.19	0.01	II.	1	9.34	4 49.28	18.9	0.39	50 57.91	45 28.6
9	10	. .	. .	. .	. .	40.9	. .	9.9	52 27.60	24.19	−0.01	V.	2	8.44	9 23.19	18.8	0.76	52 51.78	24 50 2.8
10	8	. .	. .	. .	22.5	. .	50.5	. .	54 22.65	24.19	+0.01	IV.	10	8.15	48 5.60	18.7	3.88	54 46.85	25 28 48.2
11	10	. .	. .	. .	. .	. .	. .	27.1	55 45.73	24.18	0.00	VII.	7	12.9	35 4.63	18.6	2.81	56 9.91	15 46.0
12	9	. .	46.4	59.9	. .	. .	. .	. .	58 13.91	24.18	0.00	III.	7	11.3	34 31.67	18.5	2.76	16 58 38.09	15 12.9
13	10	17.4	32.5	. .	. .	. .	. .	. .	16 59 59.73	24.18	+0.01	II.	8	11.50	39 53.95	18.4	3.21	17 0 23.92	25 20 35.6
14	10	. .	46.9	. .	14.9	. .	. .	. .	17 1 14.54	24.18	−0.01	IV.	1	8.58	4 31.28	18.4	0.37	1 38.71	24 45 10.1
15	7	. .	. .	. .	6.5	. .	. .	. .	3 37.04	24.17	0.00	IV.	5	6.18	23 6.90	18.3	1.85	3 1.21	25 3 47.1
16	9	. .	. .	. .	. .	. .	50.5	. .	3 23.06	24.17	0.00	V.	4	7.8	18 32.87	18.3	1.49	3 47.23	24 59 12.7
17	10	20.	. .	53.4	. .	. .	. .	. .	6 4.17	24.17	−0.01	III.	2	6.6	8 3.52	18.1	0.66	6 28.33	24 48 42.3
18	8	. .	. .	. .	. .	3.9	17.1	. .	6 49.86	24.17	0.00	V.	6	6.235	27 10.73	18.1	2.18	7 14.03	25 7 51.0
19	11	. .	. .	59.9	. .	. .	. .	. .	17 9 13.49	+24.16	0.00	IV.	4	10.4	−20 1.67	−17.9	−1.61	17 9 37.65	−25 0 41.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
July 17,	19	+ 20.31	l 0.001			
July 18,	19	+ 20.73	l 0.009	− 0.36	+ 0.75	0.00

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(173) 1. Micrometer reading assumed as $5^{r}.52$ instead of $6^{r}.52$.
(173) 7. Micrometer reading assumed as $5^{r}.39$ instead of $7^{r}.39$.
(173) 8. Micrometer reading assumed as $6^{r}.29$ instead of $8^{r}.29$.
(173) 23. Micrometer reading assumed as $13^{r}.20$ instead of $11^{r}.20$.
(173) 24. Hor. thread assumed as 2 instead of 1, and micrometer reading as $10^{r}.19$ instead of $8^{r}.19$.
(173) 25. Hor. thread assumed as 1 instead of 2.
(174) 4. Micrometer reading assumed as $3^{r}.37$ instead of $4^{r}.37$.
(174) 15. Transit over T. VI assumed as recorded over T. IV, and minutes as 4.5 instead of 6.5.
(174) 17. The two transits are discordant by 5^{s}, and the right ascension therefore probably erroneous by $2^{s}.5$.

ZONE 174. JULY 18. P. BELT, −25° 1′. D₀=−24° 40′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	11	. .	51.4	. .	18.4	. .	. .	. .	17 11 18.56	+24.16	−0.01	IV.	2	6.26	− 8 13.64	−17.8	−0.66	17 11 42.71	−24 48 52.1
21	2	. .	. .	. .	23.5	37.7	. .	. .	12 23.58	24.16	−0.01	IV.	2	10.3	10 3.06	17.8	0.80	12 47.73	50 41.7
22	9	. .	. .	. .	. .	46.5	. .	13.9	13 32.46	24.16	0.00	V.	3	12.12	16 7.16	17.7	1.30	13 56.62	24 56 46.2
23	11	. .	. .	. .	. .	. .	. .	3.5	17 22.03	24.15	0.00	VII.	6	6.49	27 23.28	17.5	2.20	17 46.18	25 8 3.0
24	10	. .	. .	. .	. .	. .	26.8	40.9	19 59.45	24.14	+0.01	VI.	9	5.58	41 55.45	17.4	3.38	29 23.60	25 22 36.2
25	11	. .	59.8	. .	25.9	. .	. .	. .	23 25.58	24.14	−0.01	IV.	3	10.39	15 20.32	17.2	1.23	23 49.71	24 55 58.8
26	10	. .	. .	. .	. .	51.5	. .	19.1	24 37.46	24.14	0.01	V.	1	10.44	5 24.70	17.1	0.43	25 1.59	46 2.2
27	10	36.1	49.9	. .	. .	. .	. .	. .	28 17.51	24.13	0.01	II.	3	3.7	11 32.23	16.9	0.92	28 41.63	52 10.1
28	11	. .	. .	. .	50.5	. .	18.9	. .	32 50.91	24.13	−0.01	VI.	3	8.51	14 25.69	16.6	1.16	33 15.03	24 55 3.5
29	10	57.1	12.2	26.1	. .	. .	. .	. .	35 39.58	24.12	+0.01	III.	7	15.9	36 35.70	16.4	2.94	36 3.71	25 17 15.0
30	9	23.5	37.8	. .	. .	. .	. .	. .	38 5.31	24.12	0.00	I.	6	5.50	26 53.52	16.3	2.15	38 29.43	25 7 32.0
31	11	. .	. .	18.4	. .	. .	. .	. .	39 31.80	24.12	−0.01	III.	2	3.26	6 42.83	16.2	0.54	39 55.91	24 47 19.6
32	10	. .	. .	. .	. .	. .	19.1	33.9	40 51.94	24.12	0.01	VI.	2	5.00	7 30.11	16.1	0.60	41 16.05	48 6.8
33	10	. .	23.5	. .	50.5	. .	. .	. .	43 50.63	24.11	0.01	IV.	1	6.37	3 20.19	15.9	0.26	44 14.73	43 56.4
34	8	. .	48.9	2.3	15.9	29.9	. .	. .	45 15.97	24.11	−0.01	IV.	2	10.55	10 29.28	15.9	0.83	45 40.07	24 51 6.0
35	10	. .	. .	. .	. .	. .	55.9	9.9	46 28.44	24.11	0.00	VI.	6	10.44	29 21.98	15.8	2.36	46 52.55	25 10 0.1
36	10	. .	. .	. .	. .	9.9	23.1	. .	47 55.86	24.11	0.00	VI.	5	5.28	22 41.52	15.7	1.82	48 19.97	3 19.0
37	9	39.9	. .	. .	. .	. .	. .	. .	50 21.53	24.10	0.00	I.	5	7.5	23 30.24	15.5	1.88	50 45.63	25 4 7.6
38	10	. .	. .	. .	. .	. .	42.9	56.6	50 15.29	24.10	0.00	VI.	6	8.11	28 4.82	15.5	2.26	50 39.39	8 42.6
39	10	. .	. .	. .	. .	. .	40.5	55.8	51 13.60	24.10	−0.01	VII.	2	11.47	5 56.14	15.5	0.86	51 37.69	24 46 32.5
40	9	. .	. .	. .	. .	. .	9.9	23.4	52 42.13	24.10	0.00	VII.	3	12.6	11 4.72	15.4	1.29	53 6.23	24 51 41.4
41	10	. .	. .	. .	1.9	. .	28.5	. .	55 1.38	24.10	0.00	VI.	7	4.43	31 19.94	15.2	2.52	55 25.48	25 11 57.7
42	10	. .	. .	38.3	. .	6.1	. .	. .	56 52.34	24.10	+0.01	V.	10	9.12	48 34.30	15.1	3.94	57 16.45	29 13.3
43	10	. .	. .	. .	. .	. .	. .	30.1	17 57 48.62	24.09	0.00	VII.	6	4.30	26 13.19	15.0	2.10	17 58 12.71	25 6 50.3
44	9	. .	37.4	50.9	. .	. .	. .	. .	18 0 4.53	24.09	−0.01	II.	1	6.53	3 28.09	14.9	0.27	18 0 28.61	24 44 3.3
45	11	. .	. .	. .	. .	27.4	. .	54.9	2 13.48	24.09	0.00	VII.	5	8.29	24 12.60	14.8	1.94	2 37.57	25 4 49.3
46	9	. .	. .	. .	. .	. .	10.2	24.8	3 43.05	24.09	0.00	VI.	6	12.26	30 13.40	14.7	2.43	4 7.14	25 10 50.5
47	10	. .	. .	. .	41.5	. .	. .	. .	5 41.35	24.08	0.00	IV.	5	9.52	24 54.81	14.5	1.99	6 5.43	5 31.3
48	11	. .	. .	. .	. .	. .	39.	. .	7 11.55	24.08	0.00	VI.	5	4.54	22 24.39	14.4	1.79	7 35.63	3 0.6
49	10	. .	. .	. .	. .	. .	49.5	. .	8 22.03	24.08	0.00	VI.	6	6.18	27 7.84	14.4	2.17	8 46.11	25 7 44.4
50	10	50.4	4.5	18.1	. .	. .	. .	. .	10 31.90	24.08	0.00	III.	4	8.35	19 16.75	14.2	1.54	10 55.98	24 59 52.5
51	5	. .	26.2	39.2	53.4	. .	. .	. .	10 53.25	24.08	0.00	IV.	4	5.54	17 55.60	14.2	1.43	12 17.33	58 31.2
52	10	. .	. .	. .	. .	49.5	. .	17.4	12 35.72	24.08	0.00	VII.	4	5.6	17 31.04	14.1	1.40	12 59.80	58 6.5
53	10	. .	. .	. .	. .	. .	50.5	4.5	14 22.96	24.08	−0.01	VI.	3	1.2	9 58.95	13.9	0.83	14 47.03	50 33.7
54	10	. .	. .	23.3	36.5	. .	. .	. .	17 36.58	24.07	−0.01	IV.	3	7.40	13 50.05	13.7	1.10	18 0.64	24 54 24.9
55	8	. .	. .	4.5	18.1	. .	. .	. .	19 18.08	24.07	0.00	IV.	6	6.255	27 11.78	13.6	2.18	19 42.15	25 7 47.6
56	9	. .	. .	. .	. .	. .	. .	24.5	19 43.20	24.07	+0.01	VII.	9	2.27	40 8.86	13.6	3.26	20 7.28	25 20 45.7
57	9	. .	. .	. .	38.5	. .	. .	6.5	21 38.76	24.07	0.00	VII.	4	7.23	18 40.11	13.5	1.50	22 2.84	24 59 15.1
58	11	. .	. .	2.5	. .	30.5	. .	. .	23 16.36	24.07	0.00	V.	4	6.47	18 22.29	13.3	1.47	23 40.43	24 58 57.1
59	10	. .	. .	. .	. .	12.9	. .	. .	23 59.15	24.06	+0.01	V.	8	8.37	38 16.76	13.3	3.11	25 23.22	25 18 53.2
60	10	. .	. .	43.5	57.4	10.9	. .	. .	26 57.29	24.06	+0.01	V.	9	12.23	45 9.70	13.1	3.68	27 31.36	25 25 46.5
61	9	38.1	52.4	5.5	. .	. .	. .	. .	29 19.47	24.06	−0.01	III.	2	8.41	9 21.67	12.9	0.73	29 43.52	24 49 55.3
62	10	. .	42.9	55.9	. .	. .	. .	. .	31 10.08	24.06	0.00	III.	6	7.54	27 56.37	12.8	2.24	31 34.14	25 8 31.4
63	10	. .	. .	. .	59.9	. .	26.6	. .	31 59.44	24.06	0.00	VI.	6	5.39	26 48.18	12.7	2.15	32 23.50	25 7 23.0
64	10	. .	. .	. .	27.4	. .	. .	. .	34 27.25	24.06	−0.01	IV.	2	10.29	10 16.17	12.6	0.80	34 51.30	24 50 49.6
65	7	. .	. .	. .	. .	. .	39.9	53.6	35 12.29	24.06	0.00	VII.	6	10.33	28 45.97	12.5	2.36	35 36.35	25 9 0.8
66	10	. .	. .	. .	16.1	. .	43.5	. .	37 16.00	24.05	0.00	VI.	5	7.18	23 36.99	12.4	1.89	37 40.05	25 4 11.3
67	10	. .	. .	. .	. .	47.5	. .	15.6	38 33.80	24.05	−0.01	VII.	3	10.39	15 19.96	12.3	1.21	38 57.84	24 55 53.5
68	9	. .	. .	22.5	. .	49.9	. .	. .	18 40 35.95	+24.05	−0.01	V.	2	4.25	− 7 42.83	−12.1	−0.61	18 40 59.99	−24 48 15.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(174) 24. Minutes assumed as 18 instead of 19.
(174) 25. Transit over T. II assumed to have been at $57^{s}.8$ instead of $59^{s}.8$.
(174) 39. Micrometer thread assumed as 1 instead of 2.
(174) 40. Micrometer thread assumed as 2 instead of 3.
(174) 51. Minutes assumed as 11 instead of 12.
(174) 53. Micrometer reading assumed as $0^{r}.2$ instead of $1^{r}.2$.
(174) 57. Transit over T. VI assumed to have been recorded as over T. VII.
(174) 59. Minutes assumed as 24 instead of 23.
(174) 65. Micrometer reading assumed as $9^{r}.33$ instead of $10^{r}.33$.
(174) 68. Micrometer reading assumed as $5^{r}.25$ instead of $4^{r}.25$.

ZONE 174. JULY 18. P. BELT, −25° 1′. D₀=−24° 40′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
69	8	. .	. .	3.8	16.4	. .	. .	. .	18 42 16.74	+24.05	−0.01	IV.	2	7.53	− 8 57.50	−12.0	−0.70	18 42 40.78	−24 49 30.2
70	10	. .	20.5	33.6	47.5	. .	. .	. .	43 47.42	24.05	−0.01	IV.	1	10.2	5 3.56	11.9	0.39	44 11.46	45 35.9
71	8	. .	. .	. .	46.5	. .	14.5	. .	44 46.71	24.05	0.00	VI.	3	12.51	16 26.70	11.8	1.30	45 10.76	24 56 59.8
72	8	. .	. .	. .	. .	36.8	50.9	. .	46 23.22	24.04	0.00	VI.	7	9.1	33 30.03	11.7	2.71	46 47.26	25 14 4.4
73	7	3.9	17.5	. .	. .	. .	. .	. .	48 45.32	24.04	0.00	II.	5	7.26	23 41.03	11.5	1.90	49 9.36	4 14.4
74	10	. .	. .	. .	. .	33.5	. .	1.1	49 19.77	24.04	+0.01	VII.	8	10.26	39 11.40	11.5	3.19	49 43.82	19 46.1
75	7	. .	. .	. .	. .	. .	15.9	30.	50 48.48	24.04	0.00	VII.	6	8.25	28 11.68	11.4	2.27	51 12.52	8 45.4
76	4	. .	. .	. .	52.9	. .	20.5	. .	52 52.90	24.04	0.00	VI.	5	4.51	22 22.87	11.3	1.78	53 16.94	2 56.0
77	10	32.5	47.1	. .	. .	. .	43.9	. .	54 14.40	24.04	0.00	II.	5	3.57	21 25.39	11.2	1.72	55 38.44	1 58.3
78	10	. .	5.5	18.9	31.4	. .	. .	. .	55 32.34	24.04	0.00	III.	6	7.105	23 34.47	11.1	1.89	55 56.38	4 7.5
79	8	. .	. .	. .	30.5	. .	. .	. .	57 30.35	24.04	0.00	IV.	6	3.52	25 54.38	10.9	2.07	18 57 54.39	25 6 27.4
80	9	. .	. .	. .	. .	54.5	. .	21.9	18 59 40.43	24.04	−0.01	VI.	3	5.30	12 44.34	10.8	1.00	19 59 4.46	24 53 16.1
81	10	29.9	44.2	. .	. .	. .	. .	. .	19 3 11.72	24.03	0.00	II.	6	9.4	28 31.55	10.5	2.30	3 35.75	25 9 4.4
82	11	. .	. .	. .	12.4	. .	. .	39.5	4 12.15	24.03	0.00	IV.	4	8.10	19 4.18	10.5	1.52	4 36.18	24 59 36.2
83	9	48.2	2.9	15.9	. .	. .	. .	. .	6 29.90	24.03	0.00	III.	4	5.42	17 49.51	10.3	1.43	6 53.93	24 58 21.2
84	10	. .	1.5	14.2	27.4	41.4	. .	. .	8 28.05	24.03	+0.01	V.	8	10.59	39 28.36	10.2	3.22	8 52.09	25 20 1.8
85	10	4.1	17.9	31.4	. .	. .	. .	. .	10 45.32	24.03	−0.01	I.	3	7.16	13 37.59	10.0	1.07	11 9.34	24 54 8.7
86	11	. .	. .	. .	. .	51.5	. .	. .	11 37.79	24.03	+0.01	V.	10	8.17	48 6.57	9.9	3.92	12 0.83	25 28 40.4
87	11	. .	34.5	. .	. .	. .	. .	. .	15 2.10	24.02	0.00	II.	5	8.22	24 9.27	9.7	1.94	15 26.12	25 4 40.9
88	5	. .	. .	30.5	44.5	58.5	. .	. .	15 44.28	24.02	−0.01	V.	2	4.18	7 9.05	9.7	0.55	16 8.29	24 47 39.3
89	11	. .	44.5	. .	. .	. .	39.9	. .	19 12.25	24.02	−0.01	VI.	4	4.5	17 0.48	9.4	1.34	19 36.26	57 31.2
90	10	. .	. .	. .	. .	48.5	. .	16.1	20 34.59	24.02	0.00	VII.	4	8.47	19 22.48	9.3	1.54	20 58.61	24 59 53.3
91	11	. .	. .	. .	. .	. .	46.7	. .	22 19.20	24.02	+0.01	VI.	7	10.27	34 13.40	9.2	2.78	22 43.23	25 14 45.4
92	10	9.1	23.5	36.9	. .	. .	. .	. .	24 50.72	24.02	−0.01	III.	4	3.45	16 50.51	9.0	1.32	25 14.73	24 57 20.8
93	6	. .	5.	. .	30.9	. .	. .	. .	26 30.67	24.02	0.00	IV.	5	4.9	22 1.86	8.9	1.75	26 54.69	25 2 32.5
94	5	. .	. .	. .	. .	. .	. .	51.9	27 10.50	24.02	0.00	VII.	7	6.9	32 3.11	8.8	2.59	27 34.52	25 12 34.5
95	11	. .	. .	. .	. .	. .	6.6	19.9	28 38.71	24.02	−0.01	VI.	3	4.23	12 10.55	8.7	0.94	29 2.72	24 52 40.2
96	10	. .	. .	. .	. .	. .	26.6	. .	29 59.18	24.02	−0.01	VI.	3	5.19	12 38.79	8.6	0.97	30 23.19	24 53 8.4
97	10	. .	. .	51.4	5.5	. .	. .	. .	32 5.25	24.02	0.00	IV.	6	12.40	30 20.62	8.5	2.44	32 29.27	25 10 51.6
98	8	. .	. .	. .	. .	. .	19.1	. .	32 51.61	24.02	0.00	VII.	6	15.25	31 43.44	8.4	2.57	33 15.63	25 12 14.4
99	10	. .	. .	. .	. .	. .	. .	50.1	35 8.34	24.02	−0.01	VII.	1	10.36	5 20.35	8.3	0.38	35 32.35	24 45 49.0
100	9	. .	. .	. .	. .	9.9	. .	36.9	19 36 55.83	+24.02	0.00	VII.	7	10.36	−33 47.50	− 8.1	−2.79	19 37 19.85	−25 14 18.4

ZONE 175. JULY 19. K. BELT, −25° 1′. D₀=−24° 38′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	38.5	51.3	. .	. .	. .	17 33 51.63	+23.77	0.00	V.	5	3.15	−21 34.58	− 6.5	−1.73	17 34 15.40	−25 0 2.8
2	9	. .	. .	. .	38.9	52.5	. .	. .	35 38.73	23.77	0.00	VI.	6	8.8	28 3.31	6.3	2.25	36 2.50	25 6 31.9
3	9	. .	24.0	. .	51.2	. .	. .	. .	43 51.24	23.76	−0.01	.	1	11.10	5 37.84	5.5	0.45	44 14.99	24 44 3.8
4	7	. .	49.3	. .	16.4	. .	. .	. .	45 16.53	23.75	−0.01	.	3	5.22	12 40.46	5.4	1.02	45 40.27	24 51 6.9
5	9	. .	1.6	14.4	. .	. .	. .	. .	46 28.73	23.75	0.00	.	7	5.14	31 35.73	5.3	2.54	46 52.48	25 10 3.6
6	9	. .	. .	. .	. .	56.6	. .	24.3	46 42.89	23.75	+0.01	.	8	3.02	35 27.87	5.3	2.86	47 6.65	13 56.0
7	9	. .	. .	. .	. .	. .	23.2	37.3	47 55.77	23.75	0.00	VII.	5	10.0	24 58.49	5.2	2.00	48 19.52	3 25.7
8	9	. .	. .	. .	. .	. .	. .	22.8	48 41.35	23.75	0.00	VII.	6	9.30	28 44.46	5.1	2.30	49 5.10	7 11.9
9	9	. .	. .	. .	15.2	. .	. .	. .	50 15.05	23.74	0.00	.	6	12.27	30 14.06	4.9	2.43	50 38.79	8 41.4
10	9	. .	. .	. .	34.2	. .	. .	. .	50 20.38	23.74	0.00	.	5	11.33	25 45.74	4.9	2.06	50 44.12	25 4 12.7
11	9	. .	. .	. .	. .	. .	40.9	. .	51 13.50	23.74	−0.01	.	2	6.5	8 3.05	4.9	0.64	51 37.23	24 46 28.6
12	9	. .	. .	. .	. .	37.7	. .	5.4	52 23.86	23.74	0.00	.	5	3.56	21 55.30	4.8	1.75	52 47.60	25 0 21.9
13	9	. .	. .	. .	46.3	0.6	. .	. .	17 53 46.50	+23.74	+0.01	.	8	6.40	−37 17.80	− 4.6	−3.01	17 54 10.25	−25 15 45.4

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.
July 19, 19	+ 20.36	l 0.001			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(174) 77. Minutes assumed as 55 instead of 54, and micrometer reading as $2^r.57$ instead of $3^r.57$.
(174) 78. Micrometer reading uncertain; differs 4′ from Arg. 308, 110.
(174) 80. Minutes assumed as 58 instead of 59.
(174) 82. Transit over T. VI assumed to have been recorded as over T. VII.
(174) 93. T. II assumed to have been observed at 3^s instead of 5^s.
(174) 100. Micrometer reading assumed as $9^r.36$ instead of $10^r.36$.

ZONE 175. JULY 19. K. BELT, −25° 1′. D₀=−24° 38′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
14	8	. .	. .	. .	. .	. .	48.4	. .	17 55 21.01	+23.74	−0.01	VII.	1	5.8	− 2 34.94	− 4.5	−0.19	17 55 44.74	−24 40 59.6
15	9	6.6	21.4	. .	. .	. .	. .	. .	57 48.67	23.73	0.00	.	6	8.57	28 28.18	4.3	2.29	58 12.40	25 6 54.8
16	9	. .	. .	13.4	27.0	. .	. .	. .	58 27.09	23.73	+0.01	.	9	8.45	43 19.83	4.2	3.51	58 50.83	21 47.5
17	9	. .	. .	. .	. .	. .	. .	27.1	17 58 13.40	23.73	0.01	.	10	13.58	50 58.54	4.2	4.14	17 59 37.14	29 26.9
18	9	. .	. .	. .	. .	30.9	44.3	. .	18 0 16.97	23.73	+0.01	.	8	11.50	39 54.11	4.0	3.23	18 0 40.71	18 21.3
19	10	. .	. .	. .	13.7	. .	. .	. .	2 13.55	23.73	0.00	.	5	12.58	26 28.59	3.8	2.12	2 37.28	4 54.6
20	8	. .	16.2	29.5	. .	. .	. .	. .	3 43.59	23.72	0.00	.	7	7.2	32 30.19	3.7	2.61	4 7.31	10 56.5
21	9	. .	. .	14.5	28.4	. .	. .	. .	4 28.33	23.72	−0.01	.	9	6.47	42 20.33	3.6	3.43	4 52.06	20 47.4
22	9	. .	. .	. .	. .	. .	49.7	. .	8 22.22	23.72	0.00	VI.	6	10.48	29 23.99	3.3	2.36	8 45.94	7 49.7
23	9	. .	. .	. .	. .	. .	51.0	. .	9 23.46	23.72	+0.01	VI.	9	10.30	44 12.62	3.2	3.58	9 47.19	22 39.4
24	10	. .	. .	. .	. .	45.8	. .	. .	10 31.97	23.72	0.00	.	4	13.16	21 38.47	3.1	1.73	10 55.69	25 0 3.3
25	7	. .	. .	39.8	53.3	. .	. .	. .	11 53.27	23.71	0.00	.	4	10.24	20 11.75	2.9	1.62	12 16.98	24 58 36.3
26	8	36.4	51.2	. .	. .	. .	. .	. .	19 18.48	23.70	0.00	.	6	10.50	29 25.16	2.2	2.36	19 42.18	25 7 49.7
27	7.8	. .	. .	. .	42.7	. .	10.5	. .	19 42.76	23.70	+0.01	.	9	6.55	42 24.36	2.2	3.45	20 6.47	25 20 50.0
28	8	. .	57.8	. .	24.8	. .	. .	. .	21 25.01	23.70	0.00	.	4	11.42	20 51.08	2.0	1.67	21 48.71	24 59 14.8
29	9	. .	. .	17.4	31.3	. .	. .	. .	22 31.01	23.70	−0.01	.	2	12.40	11 22.22	1.9	0.90	22 54.70	24 49 45.0
30	9	. .	. .	. .	14.6	. .	. .	. .	23 14.45	23.70	0.00	.	7	8.15	33 7.00	1.9	2.66	23 38.15	25 11 31.6
31	9	. .	. .	. .	. .	. .	. .	7.7	18 23 26.38	+23.70	+0.01	.	8	9.29	−38 43.01	− 1.8	−3.14	18 23 50.09	−25 17 8.0

ZONE 176. JULY 19. K. BELT, −22° 31′. D₀=−22° 7′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	6.4	. .	. .	20 58 52.69	+23.59	+0.01	VII.	10	9.18	−48 37.03	−14.63	−3.76	20 59 16.29	−22 56 5.4
2	9	. .	. .	39.4	. .	6.6	. .	. .	21 4 53.01	23.59	0.00	.	7	8.31	33 15.07	14.29	2.61	21 5 16.60	40 42.0
3	9	. .	. .	. .	. .	. .	. .	41.0	5 59.72	23.59	+0.01	VII.	9	5.26	42 9.42	14.23	3.26	5 23.32	49 36.9
4	9	. .	. .	. .	. .	. .	. .	44.1	6 2.51	23.59	0.00	VII.	4	7.0	18 28.55	14.23	1.53	6 26.10	25 54.3
5	10	. .	. .	15.0	28.6	. .	. .	. .	7 28.55	23.59	0.00	.	5	9.1	24 29.09	14.13	1.95	7 52.14	31 55.2
6	9	. .	. .	. .	17.8	. .	. .	. .	8 17.65	23.59	−0.01	.	3	8.25	14 12.74	14.10	1.22	8 41.23	21 38.1
7	9	. .	. .	. .	. .	50.6	. .	. .	8 36.68	23.59	−0.01	.	1	11.58	6 2.04	14.07	0.62	9 0.26	13 26.7
8	8	. .	. .	39.7	53.0	. .	. .	. .	9 53.16	23.59	0.00	.	7	6.48	32 23.13	14.00	2.54	10 16.75	39 49.7
9	10	. .	. .	. .	47.0	. .	. .	. .	10 46.85	23.60	0.00	.	6	4.24	26 10.52	13.95	2.08	11 10.45	33 36.6
10	11	. .	. .	. .	3.8	. .	. .	. .	14 3.65	23.60	+0.01	.	8	7.36	37 46.04	13.78	2.94	14 27.26	45 12.8
11	9	. .	. .	10.7	24.2	. .	. .	. .	15 24.18	23.60	0.00	.	5	4.16	22 5.39	13.70	1.79	15 47.78	29 30.9
12	9	. .	18.7	32.3	. .	. .	. .	. .	16 45.97	23.60	−0.01	.	3	1.53	10 55.07	13.64	0.97	17 9.56	18 19.7
13	8	. .	. .	. .	17.2	31.4	. .	. .	17 17.30	23.60	0.00	.	4	12.00	21 0.15	13.60	1.71	17 40.90	28 25.5
14	9	35.4	49.6	. .	. .	. .	. .	. .	19 17.02	23.60	−0.01	.	3	8.47	14 23.84	13.49	1.23	19 40.61	21 48.6
15	5	. .	. .	32.7	46.3	. .	. .	. .	19 46.22	23.60	0.00	.	4	9.54	19 56.62	13.46	1.63	20 9.82	27 21.7
16	9	55.9	10.3	. .	. .	. .	. .	. .	22 37.81	23.60	0.00	.	7	7.12	32 35.23	13.32	2.56	23 1.41	40 1.1
17	10	3.6	17.5	. .	. .	. .	. .	. .	23 45.12	23.60	0.00	.	4	7.22	18 39.97	13.27	1.55	24 8.72	26 4.8
18	9	. .	. .	29.3	. .	. .	. .	. .	24 42.77	23.60	−0.01	.	3	3.57	11 57.60	13.20	1.05	25 6.36	19 21.9
19	9	. .	. .	. .	. .	. .	. .	26.0	24 44.57	23.60	0.00	VII.	7	2.33	30 14.22	13.20	2.38	25 8.17	37 39.8
20	9	. .	. .	37.3	. .	4.9	. .	. .	27 50.81	23.61	−0.01	.	1	5.31	2 46.90	13.03	0.38	28 14.41	10 10.3
21	8	56.3	. .	23.6	. .	. .	. .	. .	32 37.65	23.61	0.00	.	6	9.54	28 56.92	12.80	2.28	33 1.26	36 22.0
22	9	. .	. .	. .	. .	. .	7.6	21.6	32 40.07	23.61	−0.01	VII.	3	6.11	13 4.84	12.80	1.13	33 3.67	20 28.8
23	10	. .	. .	. .	16.0	. .	. .	. .	38 15.85	23.62	−0.01	.	3	7.6	13 32.91	12.53	1.15	38 39.46	20 56.6
24	10	. .	. .	. .	. .	51.	. .	. .	39 37.26	23.62	+0.01	.	9	5.39	41 46.04	12.47	3.25	40 0.89	49 11.8
25	10	. .	. .	. .	. .	. .	58.6	. .	40 31.10	23.62	0.00	VI.	7	9.34	33 46.69	12.42	2.66	40 54.72	41 11.8
26	10	. .	. .	. .	47.6	. .	. .	. .	44 47.45	23.62	0.00	.	4	5.48	17 52.57	12.23	1.48	45 11.07	25 16.3
27	10	. .	. .	. .	. .	. .	8.8	. .	21 47 41.27	+23.62	+0.01	.	9	4.33	−41 12.76	−12.09	−3.21	21 48 4.90	−22 48 38.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(175) 17. Transit over T. V assumed as recorded over T. VII, and minutes as 59 instead of 58.
(176) 3. Minutes assumed as 4 instead of 5, and micrometer reading as 6ʳ.26 instead of 5ʳ.26.

ZONE 176. JULY 19. K. BELT, —22° 31'. D_0=—22° 7' 10''.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
28	10	. .	. .	. .	. .	. .	39.8	. .	21 53 12.27	+23.63	+0.01	.	9	5.50	—41 51.58	—11.83	—3.26	22 53 35.91	—22 49 16.7
29	9	44.2	58.2	. .	. .	. .	. .	. .	55 25.81	23.63	0.00	.	5	5.44	22 49.76	11.74	1.83	55 49.44	30 13.3
30	9	25.8	39.8	. .	. .	. .	. .	. .	59 7.31	23.64	—0.01	.	3	3.55	11 56.59	11.57	1.03	59 30.94	19 19.2
31	9	. .	31.3	. .	57.9	. .	. .	. .	21 59 58.30	+23.64	0.00	.	4	5.43	—17 50.05	—11.53	—1.46	22 0 21.94	—22 25 13.0
ZONE 177. JULY 20. P. BELT, —26° 53'. D_0=—26° 31' 30''.																			
1	9	. .	. .	48.1	. .	15.8	. .	. .	17 25 1.69	+23.70	—0.01	V.	1	12.55	— 6 30.74	— 6.93	—0.33	17 25 25.38	—26 38 8.00
2	9	. .	. .	. .	17.8	. .	45.5	. .	27 17.61	23.69	0.00	VI.	6	8.275	28 13.13	7.33	2.30	27 41.30	59 52.76
3	8	. .	. .	6.2	20.1	34.1	. .	. .	29 19.99	23.69	0.00	V.	4	7.37	18 47.50	7.67	1.44	29 43.68	26 50 26.61
4	10	. .	. .	. .	4.5	18.5	. .	47.4	31 44.45	23.69	+0.01	V.	10	5.54	46 54.46	7.97	4.05	31 28.15	27 18 36.48
5	10	. .	. .	. .	. .	. .	. .	2.5	32 21.20	23.68	—0.01	VII.	3	8.18	14 8.82	8.19	1.00	32 44.87	26 45 48.01
6	10	. .	31.2	44.3	58.1	. .	. .	. .	34 58.57	23.68	+0.01	IV.	8	7.375	37 46.79	8.63	3.18	35 22.26	27 9 28.60
7	9	. .	. .	. .	15.2	29.2	43.2	. .	36 15.17	23.68	0.00	V.	5	5.125	22 33.83	8.86	1.78	36 38.85	26 54 14.47
8	11	. .	. .	. .	. .	. .	. .	58.1	37 16.89	23.68	0.00	VII.	5	4.11	22 2.47	9.03	1.73	37 40.57	53 43.23
9	8	. .	. .	. .	. .	55.4	. .	23.4	38 41.78	23.67	0.00	VII.	5	6.39	23 17.11	9.28	1.84	39 5.45	26 54 58.23
10	8	. .	. .	. .	34.5	48.2	2.9	. .	40 34.50	23.67	0.00	VI.	6	9.30	28 44.65	9.59	2.34	40 58.17	27 0 26.58
11	9	. .	. .	18.5	32.5	. .	. .	. .	42 18.40	23.67	0.00	IV.	5	8.31	19 14.77	9.91	1.46	42 42.07	26 50 56.14
12	9	. .	. .	. .	. .	59.9	. .	28.6	43 46.80	23.66	+0.01	VII.	9	7.58	42 55.73	10.15	3.68	44 10.47	27 14 39.56
13	10	. .	. .	37.	50.9	5.5	. .	. .	45 51.01	23.66	0.00	V.	5	4.29	22 11.90	19.52	1.74	46 14.67	26 53 54.16
14	10	. .	. .	. .	. .	23.9	37.4	51.9	47 10.07	23.66	0.00	VII.	8	. .	34	10.74	2.84	47 33.73	27
15	11	. .	. .	50.1	. .	18.5	. .	46.1	17 49 4.35	+23.66	0.00	VII.	4	3.51	—16 53.18	—11.08	—1.26	17 49 28.01	—26 48 35.52
ZONE 178. JULY 20. P. BELT, —26° 53'. D_0=—26° 15' 30''.																			
1	10	. .	. .	. .	58.4	. .	25.9	. .	17 52 58.07	+23.65	+0.01	VI.	10	8.39	—48 17.54	—19.9	—4.20	17 53 21.73	—27 4 11.6
2	10	. .	. .	. .	44.5	58.1	11.9	. .	54 44.13	23.65	0.00	VI.	7	11.49	34 54.74	19.7	2.93	55 7.78	26 50 47.4
3	10	. .	. .	. .	. .	. .	. .	20.5	55 39.29	23.65	0.00	VII.	4	14.1	22 0.76	19.6	1.72	56 2.94	37 52.1
4	11	. .	. .	. .	. .	5.5	. .	33.5	57 51.90	23.64	0.00	VII.	5	12.41	26 19.63	19.3	2.12	58 15.54	42 11.1
5	10	. .	. .	. .	. .	. .	32.9	46.5	17 59 5.14	23.64	0.00	VII.	4	6.31	18 13.87	19.1	1.37	59 28.78	34 4.3
6	11	. .	. .	18.5	. .	46.1	59.9	. .	18 1 32.14	23.64	0.00	VI.	5	8.16	24 6.24	18.8	1.92	59 55.78	39 57.0
7	10	. .	. .	. .	. .	. .	. .	29.	2 47.64	23.64	—0.01	VII.	2	8.48	9 24.85	18.7	0.56	3 11.27	25 14.1
8	9	45.5	59.8	13.6	. .	. .	. .	. .	5 27.55	23.63	0.01	II.	2	10.20	5 12.46	18.3	0.15	5 51.17	21 0.9
9	10	. .	. .	. .	. .	9.9	23.4	37.8	5 55.91	23.63	—0.01	III.	1	12.14	6 10.07	18.3	0.26	17 6 19.53	26 21 58.6
10	5	. .	. .	. .	. .	29.9	. .	58.1	8 16.60	23.63	+0.01	VII.	10	11.3	49 29.92	18.0	4.32	18 8 40.24	27 5 22.2
11	9	. .	. .	. .	. .	. .	9.5	23.5	9 41.88	23.63	—0.01	VI.	1	13.34	6 50.28	17.8	0.32	10 5.50	26 22 38.4
12	8	55.1	9.4	23.1	. .	. .	. .	. .	12 37.15	23.62	0.01	III.	3	5.45	12 52.02	17.4	0.88	13 0.76	28 40.3
13	11	. .	. .	. .	. .	. .	. .	35.9	12 54.60	23.62	0.01	VII.	3	9.21	14 40.58	17.4	1.04	13 18.21	30 29.0
14	10	. .	. .	. .	. .	39.5	53.5	7.9	14 25.89	23.62	—0.01	VII.	3	10.23	15 11.85	17.2	1.09	14 49.50	31 0.1
15	8	17.1	31.5	44.9	. .	. .	. .	. .	17 59.29	23.61	0.00	VII.	6	7.11	27 4.08	16.7	2.18	18 22.90	42 53.0
16	7	. .	. .	. .	. .	. .	48.5	3.1	18 21.31	23.61	0.00	VII.	7	11.19	34 39.39	16.7	2.90	18 44.92	26 50 29.0
17	11	. .	. .	. .	. .	55.5	. .	25.2	20 41.54	23.61	+0.01	VII.	9	12.57	45 26.50	16.4	3.93	21 5.16	27 1 16.8
18	9	. .	. .	16.1	29.8	43.7	. .	. .	22 29.73	23.61	0.00	V.	4	9.20	19 39.43	16.1	1.50	22 53.34	26 35 27.0
19	10	. .	. .	0.5	14.5	28.4	. .	. .	24 14.45	23.61	+0.01	V.	8	8.43	38 19.78	15.9	3.26	24 38.07	54 8.9
20	11	. .	. .	11.1	. .	. .	. .	. .	26 24.98	23.60	0.00	III.	5	10.30	25 13.94	15.6	2.02	26 48.58	41 1.6
21	9	. .	. .	. .	. .	20.	33.4	. .	27 5.73	23.60	—0.01	VI.	2	7.22	8 41.70	15.5	0.49	27 29.32	24 27.7
22	9	39.9	54.5	7.9	21.3	. .	. .	. .	18 31 23.03	+23.60	+0.01	IV.	8	5.29	—36 41.99	—15.0	—3.08	18 31 45.64	—26 52 30.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
July 20,	19	+ 20.24	g 0.001			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(177) 11. {Transits over T.'s IV and V assumed as recorded over T.'s III and IV, to agree with Arg. Z. 223, 16, and Mural, 1848, June 26.
Hor. thread assumed as 4 instead of 5.
(178) 8. Hor. thread assumed as 1 instead of 2.
(178) 15. Micrometer reading assumed as $6^{r}.11$ instead of $7^{r}.11$.
(178) 17. Transits discordant by nearly 3^{s}. T. V only employed.

Zone 178. July 20. P. Belt, −26° 53′. D_0=−26° 15′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	10	. .	. .	36.8	50.9	. .	. .	. .	18 32 50.75	+23.60	0.00	IV.	6	9.27	−28 43.30	−14.8	−2.36	18 33 14.35	−26 44 30.5
24	10	. .	. .	. .	. .	14.9	28.5	42.9	34 0.98	23.59	−0.01	VII.	1	11.59	6 2.16	14.7	0.25	34 24.56	21 47.1
25	10	. .	. .	. .	48.9	2.8	16.9	. .	35 48.83	23.59	+0.01	VI.	9	9.56	43 25.21	14.4	3.75	36 12.43	59 13.4
26	10	. .	. .	. .	28.5	. .	57.4	. .	37 28.96	23.59	−0.01	VI.	2	4.54	6 26.57	14.2	0.26	37 52.54	26 22 11.0
27	10	. .	. .	. .	. .	12.4	26.1	40.1	38 58.58	23.59	+0.01	VII.	10	2.54	44 53.10	14.0	3.94	39 22.18	27 0 41.0
28	8	. .	. .	. .	. .	7.5	21.8	35.4	39 53.93	23.59	+0.01	VII.	9	2.53	40 21.94	13.9	3.46	41 17.53	26 56 9.3
29	6	. .	. .	. .	. .	59.1	12.2	26.9	42 45.07	23.58	0.00	VII.	7	9.2	33 30.31	13.5	2.80	43 8.65	49 16.6
30	7	52.1	6.8	20.5	33.5	48.5	2.5	16.5	45 34.40	23.58	−0.01	VII.	3	6.1	12 59.74	13.2	0.88	45 57.97	28 43.8
31	7	41.8	55.4	9.4	. .	. .	. .	. .	49 23.42	23.58	−0.01	III.	2	5.24	7 42.33	12.7	0.40	49 46.99	23 25.4
32	10	. .	. .	. .	. .	. .	. .	26.5	49 45.35	23.57	0.00	VII.	6	3.59	25 57.52	12.6	2.09	50 8.92	41 42.2
33	11	. .	. .	. .	11.5	. .	. .	. .	53 11.35	23.57	0.00	IV.	4	5.24	17 40.47	12.2	1.32	53 34.92	33 24.0
34	8	. .	4.1	17.4	31.5	. .	. .	. .	55 31.44	23.57	−0.01	IV.	1	11.40	5 52.97	11.9	0.23	55 55.00	21 35.1
35	10	. .	. .	. .	. .	. .	52.5	7.1	56 25.21	23.57	−0.01	VII.	2	15.6	12 35.44	11.8	0.85	56 48.77	28 18.1
36	10	. .	. .	. .	15.5	. .	43.4	. .	18 58 15.44	23.56	0.00	V.	4	7.8	18 32.87	11.5	1.40	18 58 39.00	34 15.8
37	10	. .	. .	57.4	. .	. .	. .	. .	19 0 11.47	23.56	+0.01	VI.	8	6.20	37 7.54	11.3	3.14	19 0 35.04	52 52.0
38	10	. .	. .	. .	. .	. .	. .	49.9	0 8.82	23.56	0.00	VII.	7	4.41	30 48.44	11.3	2.55	0 32.38	26 46 32.3
39	10	. .	. .	0.9	. .	27.4	. .	. .	4 14.32	23.56	+0.01	V.	10	14.59	51 29.26	10.8	4.53	4 37.89	27 7 14.6
40	9	. .	43.9	. .	21.4	. .	. .	. .	6 21.62	23.56	+0.01	IV.	7	16.7	36 34.73	10.5	3.08	6 45.19	26 52 18.3
41	10	. .	36.4	. .	4.8	. .	. .	. .	9 4.46	23.55	−0.01	IV.	1	11.34	5 49.95	10.2	0.21	9 28.00	21 30.4
42	11	. .	. .	. .	. .	. .	55.4	9.9	10 28.13	23.55	0.00	VII.	6	7.2	27 29.80	10.0	2.24	10 51.68	43 12.0
43	9	. .	. .	. .	. .	20.5	33.	48.5	12 6.23	23.55	+0.01	VII.	2	11.43	10 53.09	9.8	0.68	12 29.77	26 33.6
44	9	22.5	36.8	50.1	3.9	. .	. .	. .	17 4.31	23.55	0.00	IV.	4	11.285	21 4.43	9.1	1.61	17 27.86	36 45.1
45	11	. .	. .	. .	. .	. .	. .	29.5	17 48.19	23.55	−0.01	VII.	3	7.575	13 58.48	9.0	0.98	18 11.73	29 38.5
46	10	. .	. .	. .	. .	. .	. .	37.4	26 56.21	23.54	0.00	VII.	5	6.29	23 12.06	7.9	1.83	27 19.75	38 51.8
47	11	. .	. .	. .	. .	18.9	. .	47.9	29 5.96	23.54	+0.01	VII.	9	9.125	43 33.30	7.6	3.78	29 29.51	59 14.7
48	11	. .	38.5	. .	6.1	. .	. .	. .	32 6.27	23.53	0.00	IV.	6	7.53	27 55.90	7.2	2.25	32 29.80	43 35.4
49	10	. .	. .	. .	. .	. .	15.5	29.9	32 48.20	23.53	0.00	VII.	7	5.26	31 41.39	7.1	2.63	33 11.73	47 21.1
50	10	. .	. .	. .	50.1	. .	18.5	. .	34 50.26	23.53	0.00	VI.	6	7.47	32 52.71	6.8	2.76	35 13.79	48 32.3
51	11	. .	. .	. .	. .	52.5	. .	. .	36 38.50	23.53	0.00	V.	7	9.7	33 33.18	6.6	2.81	37 2.03	49 12.6
52	9	. .	. .	. .	. .	. .	. .	7.1	37 26.07	23.53	+0.01	VII.	7	12.38	35 19.22	6.5	2.98	37 49.61	26 50 58.7
53	10	. .	. .	. .	. .	. .	11.9	26.1	38 44.55	23.53	+0.01	VII.	9	14.38	45 47.17	6.3	4.02	39 8.09	27 1 27.5
54	10	. .	. .	. .	. .	. .	50.5	4.8	40 23.13	23.53	0.00	VII.	6	8.395	28 18.97	6.1	2.31	40 46.66	26 43 57.4
55	11	. .	45.5	59.5	13.8	. .	. .	. .	43 13.47	23.53	0.00	IV.	4	5.45	17 51.06	5.7	1.31	43 37.00	26 33 28.1
56	8	. .	. .	21.5	. .	. .	. .	. .	44 35.75	23.52	+0.01	III.	10	10.14	49 5.57	5.5	4.32	44 59.28	27 4 45.4
57	9	. .	. .	. .	. .	. .	18.5	33.0	44 51.29	23.52	+0.01	VII.	9	5.51	41 51.69	5.5	3.61	45 14.82	26 57 30.8
58	5	. .	. .	. .	. .	. .	. .	56.9	46 15.76	23.52	0.00	VII.	6	4.1	25 58.53	5.3	2.08	46 39.28	41 35.9
59	10	. .	. .	. .	57.4	. .	. .	25.4	47 57.38	23.52	0.00	VII.	5	3.41	21 47.34	5.1	1.69	48 20.90	37 24.1
60	6	. .	. .	24.9	39.4	. .	. .	. .	19 50 38.98	+23.52	0.00	V.	5	1.31	−20 42.14	− 4.7	−1.59	19 51 2.50	−26 36 18.4

Zone 179. July 20. P. Belt, −22° 31′. D_0=−22° 8′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	55.4	. .	21.9	. .	. .	20 13 55.12	+23.45	0.00	V.	4	5.14	−17 35.40	− 0.27	−1.47	20 13 18.57	−22 25 47.14
2	10	. .	43.4	56.1	9.8	. .	. .	. .	15 9.86	23.45	0.00	IV.	5	7.11	23 33.62	+ 0.01	1.96	15 33.31	31 45.57
3	10	. .	. .	10.5	23.8	. .	. .	. .	16 23.66	23.45	−0.01	IV.	2	5.51	0 25.71	0.17	0.78	16 47.10	8 36.32
4	10	. .	. .	4.9	18.5	. .	. .	. .	18 18.28	23.45	0.00	IV.	4	9.35	18 46.53	0.43	1.55	18 41.73	26 57.65
5	10	. .	. .	. .	. .	8.2	21.5	35.5	18 54.65	23.45	0.00	VII.	4	15.2	22 31.58	0.51	1.81	19 18.10	30 42.88
6	11	8.1	22.4	. .	. .	. .	. .	. .	21 49.21	23.45	0.00	II.	5	9.315	24 44.32	0.90	1.98	22 12.66	32 55.40
7	11	. .	. .	. .	. .	. .	. .	24.5	20 21 43.85	+23.45	0.00	VII.	6	9.15	−28 36.92	+ 0.89	−2.26	20 22 7.30	−22 36 48.29

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1848. h. m.	in.	°	°

REMARKS.

(178) 25. Micrometer reading assumed as $8^{r}.56$ instead of $9^{r}.56$.
(178) 26. Micrometer reading assumed as $2^{r}.54$ instead of $4^{r}.54$.
(178) 27. Micrometer reading assumed as $1^{r}.54$ instead of $2^{r}.54$.
(178) 28. Minutes assumed as 40 instead of 39.
(178) 38. Micrometer reading assumed as $3^{r}.41$ instead of $4^{r}.41$.
(178) 40. Transit observations discordant by 10^{s}. T. IV assumed as correct, and micrometer reading assumed $15^{r}.7$ instead of $16^{r}.7$.
(178) 43. Transit observations discordant.
(178) 44. Micrometer reading assumed as $12^{r}.8\frac{1}{2}$ instead of $11^{r}.28\frac{1}{2}$.
(178) 50. Hor. thread assumed as 7 instead of 6.
(178) 53. Micrometer reading assumed as $13^{z}.38$ instead of $14^{r}.38$.
(178) 59. Observations in right ascension incongruous. Transit over T. VI assumed as at $25^{s}.4$ instead of over T. VII at $5^{s}.4$.
(179) 1. Minutes assumed as 12 instead of 13, and transits over T.'s IV and VI as recorded over T.'s III and V.
(179) 3. Micrometer reading assumed as 0 $0^{r}.51$ instead of 2 $5^{r}.51$.

ZONE 179. JULY 20. P. BELT, −22° 31′. D₀=−22° 8′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
8	10	. .	. .	. .	. .	. .	29.9	43.5	20 23 2.90	+23.45	0.00	VII.	7	4.315	−31 13.97	+ 1.06	−2.45	20 23 26.35	−22 39 25.36
9	9	. .	. .	. .	. .	. .	48.4	2.5	24 21.69	23.45	0.00	VII.	8	4.1	35 57.29	1.23	2.80	24 45.14	44 8.86
10	11	. .	30.1	42.9	. .	. .	. .	. .	26 56.76	23.45	0.00	III.	6	4.7	26 1.92	1.57	2.07	27 20.21	34 12.42
11	10	. .	21.9	35.9	48.4	. .	. .	. .	28 48.72	23.45	−0.01	IV.	2	5.45	7 52.96	1.82	0.78	29 12.16	16 1.92
12	10	. .	. .	10.5	24.6	37.4	. .	. .	32 13.92	23.45	−0.01	V.	1	1.2	0 31.23	2.29	0.24	31 47.36	8 39.18
13	10	. .	. .	46.8	0.1	14.5	. .	. .	34 0.34	23.45	0.00	V.	5	3.14	21 34.09	2.50	1.75	34 23.79	29 43.34
14	10	. .	. .	. .	. .	. .	15.5	29.5	34 48.75	23.45	+0.01	VI.	8	10.23	39 10.09	2.60	3.04	35 12.21	47 20.53
15	10	. .	. .	. .	. .	. .	40.5	. .	36 23.51	23.44	+0.01	VI.	8	11.12	39 34.80	2.78	3.07	36 36.96	47 45.09
16	8	. .	. .	. .	. .	. .	49.8	3.5	37 22.87	23.44	0.00	VII.	7	10.115	34 5.41	2.93	2.67	37 46.31	42 15.15
17	10	. .	. .	. .	. .	. .	48.9	2.8	39 22.05	23.44	0.00	VII.	6	10.29	29 14.24	3.19	2.31	39 45.49	37 23.36
18	9	. .	. .	. .	. .	. .	. .	25.5	40 44.71	23.44	0.00	VII.	4	7.185	18 37.87	3.36	1.54	41 8.15	26 46.05
19	11	. .	. .	. .	. .	. .	. .	49.8	42 22.87	23.44	0.00	VII.	4	10.55	20 27.05	3.54	1.66	42 46.31	28 35.17
20	11	. .	. .	4.9	17.9	31.8	. .	. .	44 18.08	23.44	0.00	V.	5	6.12	23 3.85	3.82	1.86	44 41.52	31 11.89
21	10	. .	. .	32.4	. .	59.9	. .	. .	45 46.09	23.44	0.00	V.	6	5.48	31 52.83	4.00	2.50	46 9.53	40 1.33
22	9	. .	28.4	. .	54.8	8.2	. .	. .	50 54.83	23.45	−0.01	V.	1	6.3	3 3.01	4.65	0.42	51 18.27	11 8.78
23	10	. .	. .	18.5	. .	45.5	. .	. .	53 32.12	23.45	+0.01	V.	10	4.0	45 56.99	4.98	3.54	53 55.58	54 5.55
24	11	. .	. .	46.4	. .	13.5	. .	. .	55 59.76	23.45	0.00	V.	3	5.39	12 49.01	5.29	1.12	56 23.21	20 54.84
25	9	. .	39.9	. .	. .	6.7	. .	. .	20 58 6.86	23.45	+0.01	V.	10	7.56	47 55.99	5.55	3.68	20 58 30.32	56 4.12
26	12	. .	31.9	. .	. .	11.5	. .	38.5	21 1 58.14	23.45	0.00	VII.	3	7.35	13 47.20	6.04	1.18	21 2 21.59	21 52.34
27	9	20.9	34.5	47.4	. .	. .	. .	. .	4 1.55	23.45	+0.01	III.	9	5.00	41 26.34	6.29	3.20	5 25.01	49 33.25
28	9	. .	. .	49.9	3.4	16.9	. .	. .	6 3.25	23.45	0.00	V.	4	5.37	17 47.00	6.55	1.48	6 26.70	25 51.93
29	11	. .	. .	. .	. .	42.9	. .	9.9	7 29.25	23.45	0.00	VII.	5	7.40	23 47.92	6.73	2.91	7 52.70	31 54.10
30	9	. .	. .	. .	. .	. .	. .	58.9	8 18.04	23.45	0.00	VII.	3	7.21	13 40.13	6.84	1.18	8 41.49	21 44.47
31	10	. .	. .	. .	. .	7.2	. .	34.6	9 53.83	23.45	0.00	VII.	7	5.21	31 38.92	7.04	2.49	10 17.28	39 44.37
32	11	. .	. .	. .	. .	54.5	. .	20.9	11 40.35	23.45	−0.01	VII.	1	0.32	0 15.81	7.26	0.22	12 3.79	8 18.77
33	11	. .	. .	. .	4.9	17.6	31.2	. .	14 4.35	23.46	0.00	VI.	8	6.11	37 3.02	7.56	2.89	14 27.81	45 8.35
34	10	. .	. .	. .	24.5	38.5	51.5	5.9	15 24.74	23.46	0.00	VII.	4	10.53	20 26.04	7.72	1.66	15 48.20	28 29.98
35	8	. .	. .	. .	18.4	. .	44.9	58.9	17 18.12	23.46	0.00	VII.	4	10.37	20 17.98	7.96	1.65	17 41.58	28 21.67
36	5	19.5	32.5	46.4	59.9	. .	. .	. .	19 46.23	23.46	0.00	IV.	4	8.29	19 13.76	8.30	1.57	20 9.69	27 17.03
37	11	. .	. .	. .	. .	3.9	16.4	30.5	20 49.90	23.46	0.00	VII.	7	6.23	32 10.19	8.40	2.53	21 13.36	40 14.32
38	8	. .	. .	23.6	36.8	50.5	. .	. .	22 36.88	23.46	0.00	V.	6	6.8	32 2.93	8.62	2.52	23 0.34	40 6.83
39	11	. .	. .	. .	. .	58.4	11.5	25.	23 44 53	23.46	0.00	VII.	4	6.21	18 8.88	8.75	1.50	24 7.99	26 11.63
40	10	. .	. .	. .	. .	. .	. .	26.5	24 45.87	23.46	0.00	VII.	6	11.4	29 31.89	8.88	2.33	25 9.33	37 35.34
41	11	. .	. .	. .	18.5	32.6	. .	. .	26 18.72	23.46	0.00	V.	7	12.57	35 29.16	9.07	2.78	26 42.18	43 32.87
42	9	. .	. .	37.9	. .	4.9	17.9	. .	27 51.09	23.46	−0.01	VI.	1	4.00	2 0.87	9.26	0.34	28 14.54	10 1.95
43	9	. .	49.5	2.9	15.9	. .	. .	. .	30 16.14	23.46	0.00	IV.	3	10.30	15 15.78	9.56	1.29	30 39.60	23 17.51
44	10	. .	. .	. .	. .	. .	29.1	43.5	31 2.56	23.46	+0.01	VII.	8	15.35	41 47.22	9.64	3.24	31 26.03	49 50.82
45	8	. .	. .	. .	. .	. .	4.5	18.4	32 37.65	23.46	0.00	VII.	6	8.32	28 15.25	9.83	2.23	33 1.11	36 17.65
46	11	48.9	3.1	16.1	29.4	42.1	. .	. .	36 29.44	23.47	0.00	V.	5	11.9	25 33.61	10.29	2.04	36 52.91	33 35.36
47	10	. .	3.4	16.4	30.1	. .	. .	. .	38 29.99	23.47	0.00	IV.	3	5.41	12 50.04	10.52	1.11	38 53.46	20 50.63
48	10	. .	. .	. .	38.1	51.9	. .	. .	39 38.12	23.47	0.00	V.	3	7.31	13 45.48	10.65	1.18	40 1.59	21 46.01
49	10	. .	. .	. .	. .	. .	58.9	12.4	40 31.86	23.47	0.00	VII.	7	8.7	33 2.64	10.76	2.59	40 55.33	41 4.47
50	11	. .	. .	. .	33.5	. .	0.1	14.2	42 33.31	23.47	0.00	VII.	4	7.435	18 50.48	10.99	1.54	42 56.78	26 51.03
51	11	. .	33.5	47.5	. .	. .	. .	. .	44 0.80	23.47	0.00	III.	6	11.54	29 57.40	11.15	2.36	44 24.27	37 58.61
52	10	. .	15.9	. .	41.9	. .	. .	. .	47 42.44	23.48	+0.01	IV.	8	13.5	40 31.92	11.58	3.15	48 5.93	48 33.49
53	11	. .	0.1	. .	26.4	40.	53.9	. .	53 26.77	23.48	+0.01	VI.	8	14.25	41 12.10	12.22	3.20	53 50.26	49 13.08
54	8	. .	. .	11.4	24.9	. .	. .	. .	55 24.75	23.48	0.00	IV.	4	14.11	22 6.19	12.43	1.78	55 48.23	30 5.54
55	9	. .	. .	14.5	28.9	43.4	. .	. .	58 28.98	23.49	+0.01	V.	10	12.25	50 11.62	12.77	4.24	21 58 52.48	58 13.09
56	11	. .	. .	. .	. .	12.5	24.6	39.9	21 59 58.55	+23.49	0.00	VII.	3	12.325	−17 17.72	+12.94	−1.43	22 0 22.04	−22 25 16.21

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(179) 8. Double.
(179) 12. Minutes assumed as 31 instead of 32.
(179) 19. Transits over T. VI assumed as recorded over T. VII.
(179) 21. Hor. thread assumed as 7 instead of 6.
(179) 25. Record of one of the transit threads misplaced. T. IV assumed to have been recorded as T. V. If III was recorded as II the seconds of T. are 53ˢ.43.
(179) 27. Minutes assumed as 5 instead of 4.
(179) 36. Transits over T.'s II–V assumed as recorded over T.'s I–IV.
(179) 38. Micrometer thread assumed as 7 instead of 6.
(179) 56. Micrometer reading assumed as 14ʳ.325 instead of 12ʳ.325.

ZONE 179. JULY 20. P. BELT, −22° 31′. D_0=−22° 8′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
57	9	..	12.4	24.6	38.4	51.9	..	..	22 2 38.68	+23.49	+0.01	VI.	10	9.27	−48 41.75	+13.22	−3.75	22 3 2.18	−22 56 42.28
58	10	..	..	..	..	25.9	..	53.9	4 12.59	23.49	−0.01	VI.	1	10.52	5 28.62	13.39	0.59	4 36.07	13 25.82
59	9	..	7.4	20.5	34.5	47.8	..	..	10 34.09	23.50	−0.01	V.	1	5.2	2 32.25	14.07	0.37	9 57.58	10 28.55
60	9	..	53.4	6.2	19.5	..	46.9	..	11 19.91	23.50	+0.01	VI.	8	8.4	38 0.01	14.15	2.96	11 43.42	45 58.82
61	6	..	..	..	56.5	9.9	23.5	..	12 56.41	23.50	0.00	V.	3	5.52	12 55.56	14.32	1.12	13 19.91	20 52.36
62	7	..	11.2	24.5	37.4	51.2	..	..	15 37.92	23.51	0.00	V.	3	6.38	13 18.76	14.60	1.15	16 1.43	21 15.31
63	10	..	..	..	..	13.5	26.4	40.1	17 59.57	23.51	0.00	VII.	4	6.51	13 25.02	14.85	1.12	17 23.08	21 21.29
64	9	..	..	..	13.1	26.2	39.5	53.5	19 12.75	23.51	0.00	VII.	6	11.54	29 57.10	14.98	2.36	19 36.26	37 54.48
65	9	..	..	..	..	..	..	50.5	20 10.16	23.51	+0.01	VII.	10	16.16	42 7.90	15.08	3.29	20 33.68	50 6.11
66	10	..	..	53.5	..	20.5	34.9	47.9	23 7.30	23.52	0.00	VII.	6	15.44	31 53.06	15.37	2.51	23 30.82	39 50.20
67	10	..	..	4.5	17.9	31.6	..	..	25 18.02	23.52	+0.01	V.	9	10.48	44 21.82	15.60	3.44	25 41.55	52 19.66
68	10	..	..	26.1	40.5	53.5	..	..	27 39.89	23.52	0.00	V.	4	7.52	18 55.07	15.83	1.55	28 3.41	26 50.79
69	9	..	..	..	0.9	..	27.4	..	29 0.61	23.52	0.00	VI.	5	12.43	26 20.88	15.97	2.09	29 24.13	34 17.00
70	10	..	..	..	..	..	35.6	49.9	22 30 8.89	+23.52	0.00	.	4	6.7	−18 2.16	+16.08	−1.49	22 30 32.41	−22 25 57.57

ZONE 180. JULY 24. P. BELT, −21° 16′. D_0=−20° 52′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	12	..	..	..	..	18.5	..	..	19 18 4.96	+23.28	−0.01	V.	1	9.205	− 4 42.59	− 8.1	−0.69	19 18 28.23	−20 57 11.4
2	11	45.5	..	..	25.4	39.1	52.5	6.1	20 25.79	23.28	+0.01	VI.	9	13.41	45 48.93	8.0	3.37	20 49.08	21 38 20.3
3	10	..	..	..	..	21.6	..	48.5	22 8.19	23.28	0.00	VII.	6	8.31	28 14.77	8.0	2.21	22 31.47	20 45.0
4	12	..	18.5	31.5	44.9	..	..	..	24 44.94	23.28	0.00	IV.	5	4.55	22 25.05	7.9	1.83	25 8.22	14 54.8
5	8	..	53.5	7.4	..	..	..	..	26 20.39	23.27	−0.01	III.	3	6.30	13 14.73	7.9	1.24	26 43.65	5 43.9
6	11	..	..	..	..	..	..	16.5	26 36.10	23.27	0.00	VII.	5	4.18	22 6.09	7.9	1.81	26 59.37	14 35.8
7	11	..	..	..	..	..	56.9	10.9	28 30.32	23.27	−0.01	VII.	3	12.11	16 6.39	7.8	1.43	28 53.58	8 35.6
8	9	..	34.5	46.4	..	..	..	..	30 0.74	23.27	+0.01	III.	9	13.19	45 37.95	7.8	3.36	30 24.02	38 9.1
9	10	..	..	..	..	..	1.5	15.5	31 34.93	23.27	0.00	VII.	4	6.6	18 1.36	7.8	1.54	31 58.20	10 30.7
10	11	..	..	..	..	..	..	15.9	32 35.45	23.27	0.00	VII.	4	6.5	18 0.85	7.7	1.54	32 58.72	10 30.1
11	12	..	..	..	30.1	43.4	..	..	34 29.99	23.26	+0.01	V.	8	7.56	37 56.09	7.7	2.85	34 53.26	30 36.6
12	10	43.5	57.4	10.5	..	..	..	..	37 23.99	23.26	0.00	III.	5	6.18	23 6.87	7.6	1.87	37 47.25	15 36.3
13	10	..	..	..	..	..	..	45.	37 24.12	23.26	0.00	.	5	6.18	23 6.90	7.6	1.87	37 47.38	15 36.4
14	8	..	..	..	..	59.8	12.6	26.6	38 46.18	23.26	0.00	.	6	5.2	26 29.68	7.6	2.10	39 9.44	18 59.4
15	11	..	..	..	31.5	45.5	58.6	..	40 31.76	23.26	−0.01	VI.	3	8.28	14 14.11	7.5	1.30	40 55.01	6 42.9
16	11	..	..	..	6.8	20.5	33.6	..	42 6.88	23.26	+0.01	VI.	8	9.23	38 39.84	7.5	2.90	42 30.15	31 10.2
17	10	..	..	..	38.9	..	..	..	43 38.75	23.26	0.00	IV.	7	10.6	34 2.98	7.5	2.59	44 2.01	21 26 33.1
18	12	..	..	..	..	..	..	29.9	47 49.29	23.25	−0.01	VII.	1	12.2	6 3.76	7.4	0.77	48 12.53	20 58 31.9
19	10	..	..	57.5	..	24.6	..	..	51 10.95	23.25	0.00	V.	5	6.25	23 10.40	7.3	1.88	51 34.20	21 15 39.6
20	10	..	35.4	..	..	..	..	..	53 2.35	23.25	+0.01	II.	8	6.58	37 26.73	7.2	2.83	53 25.61	29 56.8
21	10	..	..	..	46.1	59.8	..	..	53 46.14	23.25	0.00	V.	4	4.49	17 22.80	7.2	1.50	54 9.39	21 9 51.5
22	11	..	..	22.9	..	49.5	..	..	55 35.94	23.25	−0.01	V.	1	9.15	4 39.82	7.2	0.68	55 59.18	20 57 7.7
23	10	..	..	..	56.4	..	..	..	56 56.25	23.24	0.00	IV.	6	7.13	32 35.73	7.1	2.50	57 19.49	21 25 5.3
24	11	48.1	2.6	15.4	..	..	..	..	19 58 28.88	23.24	0.00	V.	5	5.56	22 55.78	7.1	1.86	19 58 52.12	15 24.7
25	10	43.9	57.2	..	..	..	..	..	20 0 24.08	23.24	−0.01	II.	2	7.34	8 47.79	7.1	0.93	20 0 47.31	21 1 15.8
26	10	..	..	..	..	..	41.9	..	1 15.26	23.24	0.01	VI.	1	4.24	2 12.98	7.0	0.51	1 38.49	20 54 40.6
27	11	..	..	..	..	..	41.5	..	6 14.85	23.24	−0.01	VI.	1	8.5	4 4.42	7.0	0.63	6 38.08	20 56 32.1
28	12	..	..	..	..	..	4.9	18.5	7 38.21	23.24	0.00	VII.	6	13.175	30 39.22	6.9	2.39	8 1.45	21 23 8.5
29	9	..	50.9	3.5	16.4	..	..	..	10 16.98	23.24	0.00	IV.	7	6.27	32 12.54	6.9	2.49	10 40.22	24 41.9
30	11	..	..	..	37.4	50.9	..	..	11 37.35	23.23	0.00	V.	5	7.32	23 44.19	6.9	1.91	12 0.58	16 13.0
31	9	..	..	10.3	23.9	..	..	..	20 14 23.55	+23.23	−0.01	IV.	2	5.29	− 7 44.89	− 6.8	−1.86	20 14 46.77	−21 0 13.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848.	h.	s.	s.	s.	s.	s.
Jul7 24,	19	+ 20.16	*g* 0.001	− 0.41	+ 0.81	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(179) 58. Double.
(179) 59. Minutes assumed as 9 instead of 10.
(179) 63. Minutes assumed as 16 instead of 17, and hor. thread as 3 instead of 4.
(179) 65. Hor. thread assumed as 8 instead of 10.
(180) 23. Hor. thread assumed as 7 instead of 6.

ZONE 180. JULY 24. P. BELT, −21° 16′. D₀=−20° 52′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
32	9	. .	. .	. .	. .	26.4	39.5	. .	20 15 12.89	+23.23	0.00	VI.	7	4.14	−31 5.34	− 6.8	−2.42	20 15 36.12	−21 23 34.6
33	11	. .	. .	. .	. .	. .	45.9	. .	16 19.14	23.23	+0.01	.	10	3.51	45 52.47	6.8	3.40	16 42.38	38 22.7
34	11	. .	. .	. .	. .	57.5	. .	. .	17 44.07	23.23	0.00	V.	6	2.0	24 57.88	6.7	2.00	18 7.30	17 26.6
35	12	. .	. .	. .	. .	36.6	. .	. .	19 23.10	23.23	−0.01	V.	2	13.30	11 47.40	6.7	1.12	19 46.32	4 15.2
36	8	. .	8.9	21.8	. .	. .	. .	. .	21 35.36	23.23	0.00	III.	4	9.32	19 45.50	6.7	1.65	21 58.59	12 13.9
37	11	. .	52.5	. .	19.9	. .	47.4	. .	24 19.98	23.23	0.00	VI.	7	5.25	31 41.13	6.6	2.46	24 43.21	24 10.2
38	10	34.6	48.4	. .	. .	. .	. .	. .	27 15.28	23.23	+0.01	II.	8	6.4	36 59.51	6.6	2.81	27 38.52	29 28.9
39	9	. .	. .	. .	. .	48.5	. .	. .	27 21.83	23.23	−0.01	V.	3	6.50	13 24.81	6.6	1.23	27 45.05	5 52.6
40	8	. .	53.9	6.1	19.6	. .	. .	. .	29 19.96	23.23	+0.01	IV.	8	8.2	37 59.15	6.6	2.88	29 43.20	30 28.6
41	10	. .	. .	. .	32.6	. .	. .	. .	30 32.45	23.23	+0.01	IV.	7	12.5	35 2.97	6.6	2.68	30 55.69	27 32.3
42	12	. .	41.8	. .	. .	. .	. .	. .	34 8.68	23.22	0.00	VI.	6	8.16	28 7.37	6.5	2.21	34 31.90	20 36.1
43	11	. .	. .	32.6	45.5	. .	. .	. .	36 45.68	23.22	0.00	IV.	7	8.39	33 19.11	6.5	2.56	37 8.90	25 48.2
44	12	. .	. .	. .	32.1	. .	. .	12.9	39 32.27	23.22	0.00	VII.	6	6.34	27 15.78	6.5	2.16	39 55.49	19 44.4
45	11	. .	. .	. .	. .	. .	52.5	. .	42 25.74	23.22	+0.01	VII.	9	7.12	42 32.63	6.4	3.18	42 48.97	35 2.2
46	12	1.8	16.1	28.5	. .	. .	. .	. .	45 42.48	23.22	+0.01	III.	8	8.49	38 22.82	6.4	2.91	46 5.71	30 52.1
47	9	45.6	57.6	. .	. .	. .	. .	. .	50 25.13	23.22	−0.01	II.	2	7.36	8 48.80	6.4	1.91	50 48.34	21 1 17.1
48	10	. .	. .	6.9	. .	34.2	. .	. .	53 20.27	23.22	−0.01	V.	1	5.28	2 45.35	6.3	0.52	53 43.48	20 55 12.2
49	9	. .	. .	. .	54.1	. .	. .	. .	54 53.95	23.22	0.00	IV.	6	7.34	27 46.33	6.3	2.20	55 17.17	21 20 14.8
50	10	. .	18.5	. .	44.6	. .	. .	. .	56 44.97	23.22	+0.01	IV.	8	12.29	40 13.77	6.3	3.03	57 8.20	32 43.1
51	9	. .	55.9	. .	22.4	. .	48.5	. .	20 58 22.24	23.22	−0.01	V.	3	6.49	13 24.31	6.3	1.22	20 58 45.45	5 51.8
52	8	54.5	8.2	21.4	. .	. .	. .	. .	21 0 34.82	23.22	0.00	III.	4	3.20	16 37.91	6.3	1.43	21 0 58.04	21 9 5.6
53	9	. .	40.9	53.5	7.5	. .	. .	. .	3 7.14	23.22	−0.01	IV.	1	8.5	4 4.56	6.3	0.60	3 30.35	20 56 31.5
54	10	21.5	35.8	. .	. .	. .	. .	. .	5 2.38	23.22	0.00	II.	7	5.22	31 39.62	6.2	2.47	5 25.60	21 24 8.3
55	6	. .	. .	. .	41.5	. .	8.9	. .	6 41.77	23.22	0.00	VI.	5	7.25	23 40.54	6.2	1.91	7 4.99	21 16 8.7
56	7	51.9	. .	18.8	32.6	45.9	. .	. .	9 32.21	23.22	−0.01	V.	1	10.14	5 9.58	6.2	0.67	9 55.42	20 57 36.5
57	8	27.4	41.9	54.9	8.	21.5	. .	. .	12 8.21	23.22	0.00	V.	7	10.55	34 27.65	6.1	2.66	12 31.43	21 26 56.4
58	5	. .	. .	3.5	15.2	28.5	42.6	55.5	15 15.66	23.22	0.00	.	7	15.14	36 38.26	6.1	2.80	15 38.88	29 7.2
59	9	. .	1.9	14.3	. .	. .	. .	. .	17 28.40	23.22	+0.01	III.	9	14.3	46 0.13	6.0	3.44	17 51.63	21 38 29.6
60	9	. .	. .	. .	38.9	. .	5.5	. .	18 38.80	23.22	−0.01	VI.	1	4.47	2 24.58	6.0	0.51	19 2.01	20 54 51.1
61	10	. .	8.9	. .	34.5	47.4	. .	. .	24 34.14	23.23	+0.01	V.	9	9.32	44 13.76	6.0	3.31	23 57.38	21 36 43.1
62	9	25.5	. .	. .	. .	. .	. .	. .	41 5.93	23.23	0.00	I.	4	6.14	18 5.39	6.0	1.53	41 29.16	10 32.9
63	10	. .	. .	. .	. .	. .	. .	33.5	40 53.07	23.23	0.00	VII.	4	9.28	19 43.21	6.0	1.64	41 16.30	12 10.9
64	9	. .	. .	. .	. .	. .	31.2	44.5	42 4.30	23.23	0.00	.	4	13.46	21 53.60	6.0	1.79	42 27.53	14 21.4
65	10	11.4	25.4	38.1	. .	. .	17.9	. .	21 46 51.61	+23.24	0.00	.	3	10.31	−15 16.28	− 6.1	−1.36	21 47 14.85	−21 57 43.7
ZONE 181. AUGUST 4. P. BELT, −19° 23′. D₀=−18° 52′ 30″.																			
1	10	. .	. .	. .	. .	. .	. .	8.5	20 29 28.53	+25.25	−0.01	.	2	4.2	− 7 1.03	−20.9	−0.96	20 29 53.77	−18 59 52.9
2	10	. .	. .	35.8	. .	2.8	. .	28.9	31 49.17	25.24	0.00	.	6	3.65	26 0.93	20.5	2.06	32 14.41	19 18 53.5
3	10	. .	9.8	22.5	35.4	. .	. .	. .	35 35.86	25.24	+0.01	IV.	9	6.32	42 12.77	19.9	3.02	36 1.11	35 5.7
4	9	. .	. .	15.9	29.4	. .	. .	. .	37 29.17	25.24	0.00	IV.	6	8.215	28 10.27	19.6	2.19	37 54.41	21 2.1
5	9	. .	. .	. .	. .	38.5	51.5	4.9	38 25.08	25.24	0.00	VI.	4	4.8	17 2.03	19.4	1.52	38 50.32	9 53.0
6	9	42.8	56.5	9.4	. .	. .	. .	. .	43 22.79	25.23	0.00	III.	6	2.51	25 23.59	18.6	2.02	43 48.02	18 14.2
7	8	. .	. .	20.9	33.5	47.4	. .	. .	44 33.97	25.23	+0.01	IV.	10	7.39	47 47.45	18.4	3.36	44 59.21	40 39.2
8	8	. .	. .	. .	48.8	2.9	15.4	. .	45 49.10	25.23	0.00	.	6	9.15	28 37.25	18.2	2.22	46 14.33	21 27.7
9	11	. .	. .	3.9	. .	29.9	. .	. .	48 16.86	25.22	0.00	.	6	9.3	28 31.20	17.8	2.21	48 42.08	21 21.2
10	9	. .	40.9	. .	6.8	. .	33.1	. .	50 6.98	25.22	+0.01	.	9	5.22	41 37.46	17.5	2.98	50 32.21	34 27.9
11	10	. .	4.9	. .	30.5	. .	56.7	. .	20 52 30.72	+25.22	+0.01	.	8	6.37	−37 16.29	−17.1	−2.72	20 52 55.95	−19 30 6.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 4,	19	+ 22.04	l 0.000			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(180) 39. Transit over T. VI assumed as recorded over T. V.
(180) 61. Minutes assumed as 23 instead of 24, and micrometer readings as 10ʳ.32 instead of 9ʳ.32.
(181) 1. Micrometer reading uncertain 10″ discordant from Argelander 252, 140; wrong.
(181) 2. Micrometer reading uncertain 1′ discordant from Argelander 243, 93.

ZONE 181. AUGUST 4. P. BELT, —19° 23′. D$_\circ$=—18° 52′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
12	10	29.4	52.9	5.9	18.4	. .	. .	. .	20 55 18.92	+25.22	—0.01	IV.	3	8.17	—14 8.71	—16.7	—1.35	20 55 44.13	—19 6 56.8
13	10	. .	46.4	. .	12.5	. .	38.5	. .	58 12.46	25.21	—0.01	VI.	5	10.32	15 14.87	16.2	1.41	58 37.66	8 2.5
14	9	. .	. .	55.9	. .	. .	22.4	. .	20 59 9.07	25.21	0.00	VI.	5	13.57	26 58.22	16.1	2.12	20 59 34.28	19 46.4
15	11	. .	. .	. .	6.4	. .	32.5	. .	21 2 6.17	25.21	+0.01	VI.	9	9.36	43 45.43	15.6	3.13	21 2 31.39	36 34.2
16	10	40.1	54.4	7.4	20.5	. .	. .	0.0	9 20.41	25.20	0.00	VII.	5	11.57	25 57.57	14.5	2.06	9 45.61	18 44.1
17	10	. . .	0.9	13.	25.8	. .	. .	. .	11 26.52	25.20	—0.01	IV.	8	14.10	41 4.69	14.1	2.96	11 51.73	33 51.8
18	10	. .	. .	. .	53.4	. .	19.5	. .	12 53.18	25.20	+0.01	.	6	10.38	29 19.11	13.9	2.26	13 18.38	19 22 5.3
19	10	. .	. .	. .	36.4	49.5	2.8	. .	14 36.28	25.20	0.00	VI.	1	5.29	2 45.77	13.6	0.70	15 1.47	18 55 30.1
20	10	. .	. .	. .	. .	19.4	32.6	46.4	16 6.40	25.20	+0.01	VII.	9	8.8	43 0.90	13.4	3.06	16 31.61	19 35 47.4
21	9	. .	46.4	. .	. .	. .	. .	. .	18 13.12	25.20	+0.01	II.	10	10.42	49 19.61	13.1	3.44	18 38.53	42 6.2
22	10	. .	15.9	28.3	. .	. .	. .	. .	19 41.98	25.20	0.00	III.	6	12.29	26 13.94	12.8	2.07	20 7.18	18 58.8
23	11	. .	35.9	. .	. .	. .	. .	. .	21 2.28	25.20	—0.01	II.	2	4.54	7 27.13	12.6	0.98	21 27.47	0 10.7
24	10	20.5	35.4	. .	0.3	. .	. .	. .	24 0.87	25.20	0.00	.	5	14.10	27 4.89	12.2	2.13	24 26.07	19 49.2
25	9	. .	. .	. .	. .	. .	. .	5.8	24 25.88	25.20	0.00	.	4	11.55	20 57.63	12.1	1.76	24 51.08	13 41.5
26	10	4.5	18.4	30.5	. .	. .	. .	. .	26 44.43	25.20	0.00	III.	7	8.59	33 29.16	11.8	2.51	27 9.63	26 13.5
27	10	. .	. .	22.9	. .	49.8	. .	. .	27 36.14	25.19	—0.01	III.	2	11.46	10 54.97	11.6	1.16	28 1.32	3 37.7
28	10	. .	28.5	. .	54.5	. .	. .	. .	29 54.70	25.19	0.00	V.	6	8.39	28 19.08	11.3	2.20	30 19.89	21 2.6
29	9	. .	59.5	. .	25.6	. .	. .	. .	31 25.69	25.19	—0.01	IV.	3	7.25	13 42.48	11.0	1.32	31 50.87	6 24.8
30	4	11.5	25.6	38.1	. .	. .	. .	. .	33 51.75	25.19	+0.01	III.	8	12.205	40 9.45	10.7	2.90	34 16.95	32 53.1
31	11	. .	. .	53.9	6.5	20.4	. .	. .	35 6.82	25.19	0.00	IV.	5	7.195	23 37.91	10.5	1.92	35 32.01	16 20.3
32	11	. .	. .	54.9	. .	. .	. .	. .	38 7.92	25.19	0.00	.	4	4.54	17 25.35	10.0	1.55	38 33.11	19 10 6.9
33	5	. .	. .	. .	. .	. .	26.5	. .	39 0.18	25.19	—0.01	VI.	1	3.21	1 41.22	9.9	0.65	39 25.36	18 54 21.8
34	9	. .	. .	. .	. .	49.5	. .	15.5	40 35.81	25.19	—0.01	VII.	3	4.30	12 13.98	9.7	1.25	41 0.99	19 4 54.9
35	6.7	. .	30.9	. .	. .	. .	. .	. .	42 57.44	25.19	0.00	III.	6	4.55	26 26.12	9.3	2.08	43 22.63	19 7.5
36	10	. .	. .	. .	. .	. .	. .	43.4	43 3.75	25.19	0.00	VII.	8	11.30	29 43.76	9.3	2.28	43 28.94	19 22 25.3
37	9	0.5	14.6	26.8	40.5	. .	. .	. .	46 40.43	25.19	—0.01	IV.	1	8.15	4 9.60	8.7	0.78	47 5.61	18 56 49.1
38	10	54.9	9.8	21.9	. .	. .	. .	. .	48 35.60	25.19	+0.01	III.	9	9.39	43 47.03	8.5	3.11	49 0.80	19 36 28.6
39	10	. .	. .	. .	44.5	. .	. .	. .	49 44.35	25.19	0.00	IV.	5	7.21	23 38.66	8.3	1.92	50 9.54	19 16 18.9
40	10	. .	. .	. .	54.9	. .	. .	. .	50 54.75	25.19	—0.01	IV.	1	4.31	2 16.65	8.2	0.69	51 19.93	18 54 55.5
41	9	28.1	41.9	54.5	. .	. .	. .	. .	21 57 8.12	25.19	0.00	III.	7	4.15	31 5.95	7.3	2.37	21 57 33.31	—19 23 45.6
42	7	40.5	54.4	7.1	. .	. .	. .	. .	22 0 20.50	+25.19	0.00	.	5	. .	—22	— 6.8	—1.82	22 0 45.69	

ZONE 182. AUGUST 7. P. BELT, —21° 53′. D$_\circ$=—21° 30′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	24.5	. .	. .	. .	. .	18 25 37.98	+27.81	+0.01	III.	7	12.35	—35 18.07	—23.3	—2.68	18 26 5.80	—22 5 44.1
2	11	. .	. .	49.5	. .	. .	. .	. .	28 3.23	27.80	—0.01	III.	4	7.45	18 51.54	23.1	1.61	28 31.02	21 49 16.3
3	10	20.5	35.6	. .	. .	. .	. .	. .	30 1.97	27.79	+0.01	II.	7	12.28	35 14.42	22.9	2.67	30 29.77	22 5 40.0
4	10	. .	. .	. .	. .	. .	. .	41.5	30 1.11	27.79	+0.01	VII.	7	12.29	35 14.75	22.9	2.67	30 28.91	22 5 40.3
5	11	. .	. .	. .	. .	. .	. .	52.5	31 11.74	27.79	—0.01	VII.	1	14.36	7 21.39	22.8	0.87	31 39.52	21 37 45.1
6	11	. .	8.9	. .	. .	. .	. .	. .	35 35.74	27.78	—0.01	II.	2	10.21	10 12.00	22.5	1.03	36 3.51	21 40 35.5
7	11	. .	. .	49.9	. .	. .	. .	. .	37 3.38	27.78	+0.01	II.	7	12.14	35 7.37	22.4	2.68	37 31.17	22 5 32.5
8	9	. .	55.5	. .	. .	. .	. .	. .	41 22.66	27.76	0.01	II.	10	10.26	49 11.52	22.0	3.61	41 50.43	19 37.1
9	10	. .	. .	26.4	. .	. .	. .	. .	42 39.88	27.76	+0.01	III.	7	12.8	35 4.45	21.9	2.67	43 7.65	22 5 29.0
10	12	. .	. .	38.3	. .	6.6	. .	. .	43 52.35	27.76	0.00	V.	5	7.19	23 37.63	21.8	1.90	44 20.11	21 54 1.3
11	8	. .	. .	. .	. .	. .	0.4	. .	44 33.65	27.76	—0.01	VI.	1	3.26	1 43.73	21.8	0.49	45 1.40	32 6.0
12	9	39.9	54.5	. .	. .	. .	. .	. .	48 21.03	27.75	0.00	II.	6	3.14	25 35.08	21.5	2.04	48 48.78	21 55 58.6
13	10	27.9	. .	. .	. .	. .	. .	. .	50 8.63	27.74	0.00	I.	7	4.23	31 9.69	21.3	2.41	50 36.37	22 1 33.4
14	10	. .	. .	17.4	. .	44.6	. .	. .	18 52 31.13	+27.74	+0.01	V.	10	7.37	—47 46.41	—21.1	—3.52	18 52 58.88	—22 18 11.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 7,	19	+ 24.45	l 0.021			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(181) 12. The first thread assumed to have been observed at $39^{s}.4$ instead of $29^{s}.4$.
(181) 14. T. V assumed to have been recorded as T. VI. If T. IV was recorded as T. III the seconds of T. are $55^{s}.89$.
(181. 22. Hor. thread assumed as 5 instead of 6.

ZONE 182. AUGUST 7. P. BELT, −21° 53′. D$_0$=−21° 30′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
15	9	13.5	27.4	. .	. .	. .	. .	. .	18 54 54.17	+27.73	−0.01	II.	3	7.34	−13 46.89	−21.0	−1.27	18 55 21.89	−21 44 9.2
16	4	. .	. .	13.5	. .	. .	39.9	. .	55 13.21	27.73	0.00	VI.	6	5.52	26 54.75	20.9	2.13	55 40.94	57 17.8
17	11	. .	. .	45.5	. .	. .	. .	. .	57 58.77	27.73	0.00	III.	4	10.1	20 0.12	20.7	1.67	58 26.50	50 22.5
18	11	. .	. .	. .	. .	. .	1.9	. .	18 58 35.08	27.72	0.00	VI.	5	10.2	24 59.72	20.7	2.00	18 59 2.80	55 22.4
19	10	. .	. .	. .	17.1	. .	. .	. .	19 0 16.95	27.72	−0.01	IV.	2	11.315	10 47.68	20.5	1.07	19 0 44.66	41 9.3
20	10	. .	. .	. .	. .	. .	. .	48.9	1 8.36	27.72	0.00	IV.	5	8.42	24 19.52	20.5	1.95	1 36.08	54 42.0
21	10	. .	. .	48.5	. .	15.8	. .	. .	3 2.05	27.71	0.00	V.	5	7.26	23 41.16	20.3	1.91	3 29.76	21 54 3.4
22	10	. .	. .	27.9	. .	55.1	. .	. .	4 41.64	27.71	+0.01	V.	10	8.25	48 10.61	20.2	3.55	5 9.36	22 18 34.4
23	10	. .	. .	17.4	30.5	. .	. .	. .	6 30.62	27.70	+0.01	IV.	7	12.8	35 4.48	20.0	2.68	6 58.33	22 5 27.2
24	10	. .	. .	. .	33.5	. .	. .	. .	7 33.35	27.70	−0.01	IV.	3	10.2	15 1.66	20.0	1.35	8 1.04	21 45 23.0
25	10	. .	. .	. .	. .	45.5	58.5	12.9	8 31.97	27.70	−0.01	.	3	11.40	15 51.07	19.9	1.36	8 59.66	21 46 12.3
26	11	. .	34.6	. .	. .	. .	. .	. .	11 1.67	27.69	+0.01	II.	8	7.58	37 56.98	19.7	2.86	11 29.37	22 8 19.5
27	9	. .	. .	. .	. .	42.8	. .	. .	11 29.27	27.69	0.00	V.	4	6.15	18 6.16	19.7	1.55	11 56.96	21 48 27.4
28	11	. .	. .	. .	. .	. .	55.6	. .	12 28.77	27.69	0.00	VI.	6	2.575	24 56.51	19.6	2.03	12 56.46	21 55 18.1
29	10	. .	. .	. .	34.6	47.9	. .	. .	14 34.45	27.68	0.00	V.	7	5.50	31 53.85	19.4	2.47	15 2.13	22 2 15.7
30	11	2.9	17.4	. .	. .	. .	. .	. .	16 43.92	27.68	0.00	II.	4	9.17	19 37.82	19.2	1.63	17 11.60	21 49 58.7
31	6	. .	. .	. .	. .	. .	20.9	34.5	16 54.07	27.68	0.00	VI.	7	9.11	34 5.35	19.2	2.62	17 21.75	22 4 27.2
32	11	40.5	54.6	8.1	. .	. .	. .	. .	20 21.27	27.67	−0.01	III.	2	6.6	8 3.53	19.0	0.90	20 48.93	21 38 23.4
33	10	. .	. .	24.6	. .	. .	. .	. .	21 37.78	27.17	0.01	III.	3	6.31	13 45.48	18.9	1.27	22 5.44	44 5.6
34	6	. .	. .	. .	. .	. .	. .	12.5	21 31.67	27.67	−0.01	VII.	1	3.52	6 55.69	18.9	0.91	21 59.33	37 15.5
35	9	. .	. .	. .	. .	. .	19.1	33.5	22 52.59	27.67	0.00	VII.	4	8.52	19 25.04	18.8	1.63	23 20.26	49 45.5
36	12	. .	. .	. .	. .	. .	8.5	. .	24 41.69	27.66	0.00	VI.	4	11.52	20 55.98	18.6	1.73	25 9.35	51 16.3
37	10	. .	15.5	. .	41.6	. .	. .	. .	27 41.97	27.66	0.00	IV.	6	6.185	27 8.25	18.4	2.14	28 9.63	21 57 28.8
38	9	. .	. .	. .	. .	. .	. .	42.9	28 2.67	27.66	+0.01	VII.	10	5.36	46 45.11	18.3	3.46	28 30.34	22 17 6.9
39	11	. .	. .	8.5	. .	. .	. .	. .	30 21.86	27.65	0.00	III.	6	4.325	26 14.78	18.1	2.08	30 49.51	21 56 35.0
40	9	. .	. .	. .	. .	. .	22.9	. .	31 56.13	27.65	+0.01	VI.	2	6.21	8 10.97	18.0	1.89	32 23.79	38 29.9
41	10	. .	. .	. .	. .	. .	49.6	. .	32 22.78	27.65	0.00	VI.	5	6.52	23 23.91	18.0	1.89	32 50.43	53 43.8
42	10	28.5	42.6	. .	. .	. .	. .	. .	37 9.35	27.64	0.00	II.	5	5.10	22 32.47	17.6	1.83	37 36.99	21 52 51.9
43	11	. .	. .	. .	. .	21.6	. .	. .	38 8.18	27.64	+0.01	V.	9	4.23	41 7.68	17.5	3.09	38 35.83	22 11 28.3
44	11	. .	32.9	. .	. .	. .	. .	. .	41 59.92	27.63	0.00	II.	7	4.14	31 5.34	17.2	2.42	41 27.55	22 1 25.0
45	11	. .	45.9	. .	. .	. .	. .	. .	46 12.85	27.62	0.00	II.	5	7.6	23 30.97	16.9	1.90	46 40.47	21 53 49.8
46	11	. .	. .	. .	. .	. .	. .	52.9	46 12.35	27.62	0.00	VII.	5	6.385	23 16.92	16.9	1.88	46 39.97	21 53 35.7
47	10	. .	. .	39.5	. .	6.4	. .	. .	49 53.10	27.61	+0.01	V.	10	10.15	49 6.08	16.6	3.64	50 20.72	22 19 26.3
48	11	. .	23.5	36.8	. .	. .	. .	. .	51 50.27	27.61	0.00	III.	5	4.1	21 57.79	16.4	1.79	52 17.88	21 52 16.0
49	10	0.9	13.9	. .	40.5	. .	. .	. .	55 40.86	27.60	−0.01	II.	3	6.56	13 27.73	16.1	1.23	56 8.45	43 45.1
50	10	. .	49.8	2.9	16.4	31.5	. .	. .	19 57 16.89	27.60	+0.01	V.	7	13.1	35 31.17	16.0	2.72	19 57 44.50	22 5 49.9
51	11	. .	. .	21.5	. .	49.5	. .	. .	20 1 35.33	27.59	−0.01	V.	3	8.13	14 6.66	15.6	1.27	20 2 2.91	21 44 23.5
52	12	. .	. .	44.6	. .	. .	. .	. .	3 57.90	27.59	0.00	III.	5	5.495	22 52.50	15.5	1.86	4 25.49	53 9.9
53	11	. .	. .	1.9	. .	. .	. .	. .	6 15.22	27.58	0.00	III.	5	9.18	24 37.63	15.3	1.97	6 42.80	54 54.9
54	8	. .	25.4	37.8	. .	. .	. .	. .	7 51.65	27.58	−0.01	III.	3	12.11	16 6.66	15.2	1.40	8 19.22	21 46 23.2
55	8	. .	. .	. .	44.5	. .	11.6	24.5	8 44.44	27.58	+0.01	VII.	9	13.45	45 50.77	15.1	3.41	9 12.03	22 16 9.3
56	11	39.5	33.4	. .	. .	. .	. .	. .	12 20.24	27.58	0.00	II.	5	5.37	22 46.09	14.8	1.85	12 47.82	21 53 2.7
57	11	35.5	49.6	2.9	. .	. .	. .	. .	14 16.25	27.57	0.00	III.	4	5.37	17 47.00	14.7	1.51	14 43.82	48 3.2
58	10	. .	. .	. .	. .	. .	19.4	33.6	14 52.74	27.57	−0.01	VI.	2	7.24	8 42.74	14.6	1.91	15 20.30	21 38 59.3
59	10	. .	. .	. .	. .	31.6	. .	59.8	16 18.82	27.57	+0.01	VII.	8	8.37	38 16.48	14.5	3.59	16 46.40	22 8 34.6
60	12	39.6	53.6	7.4	. .	. .	. .	. .	19 20.34	27.56	−0.01	III.	2	4.00	6 59.99	14.3	0.81	19 47.89	21 37 15.1
61	11	. .	. .	. .	24.6	. .	. .	. .	20 24.45	27.56	−0.01	IV.	3	4.1	7 0.52	14.2	0.89	20 52.00	37 15.6
62	10	. .	. .	. .	24.9	. .	51.6	. .	29 24.77	27.55	0.00	VI.	5	2.3	20 58.18	13.6	1.72	29 52.32	21 51 13.5
63	11	. .	. .	6.4	. .	. .	46.5	. .	20 32 19.78	+27.54	+0.01	VI.	8	9.405	−38 48.67	−13.4	−2.95	20 31 47.33	−22 9 5.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(182) 16. One of the transit threads wrongly recorded. T. IV assumed as observed instead of T. III.
(182) 28. Micrometer reading assumed as 1 57.5.
(182) 31. Micrometer reading assumed as 10^{r}.11 instead of 9^{r}.11.
(182) 33. Micrometer reading assumed as 7^{r}.31 instead of 6^{r}.31.
(182) 34. Hor. thread assumed as 2 instead of 1.
(182) 44. Minutes assumed as 40 instead of 41.
(182) 59. Hor. thread assumed as 6 instead of 8.
(182) 61. Hor. thread assumed as 2 instead of 3.
(182) 63. Minutes assumed as 31 instead of 32.

Zone 182. August 7. P. Belt, −21° 53′. D$_{\circ}$=−21° 30′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
64	11	58.5	. .	. .	. .	. .	. .	. .	20 34 39.09	+27.54	−0.01	I.	3	11.47	+15 54.28	−13.2	−1.38	20 35 6.62	−21 46 8.9
65	10	. .	. .	. .	. .	15.5	. .	42.9	35 2.09	27.54	−0.01	V.	3	7.2	13 30.86	13.2	1.22	35 29.62	21 43 45.3
66	7	. .	. .	46.4	59.5	13.6	. .	. .	36 59.78	27.54	0.00	V.	7	8.18	33 8.48	13.0	2.57	37 27.32	22 3 24.1
67	10	5.6	19.4	. .	45.6	. .	. .	. .	41 46.01	27.53	0.00	IV.	4	13.4	21 32.42	12.7	1.75	42 13.54	21 51 46.9
68	9	. .	47.5	. .	14.6	. .	. .	. .	43 14.43	27.53	0.00	IV.	3	14.11	17 7.19	12.6	1.46	43 41.96	21 47 21.3
69	10	. .	. .	. .	. .	30.5	. .	. .	45 17.04	27.53	0.00	V.	7	4.55	31 26.12	12.5	2.45	45 44.57	22 1 41.1
70	11	. .	52.1	. .	17.9	. .	. .	. .	54 18.46	27.52	+0.01	IV.	8	6.345	37 15.03	11.8	2.86	54 45.99	22 7 29.7
71	10	. .	. .	54.6	. .	21.8	. .	. .	56 8.05	27.52	0.00	V.	4	4.24	16 39.93	11.7	1.42	56 35.57	21 46 53.0
72	5	. .	3.5	16.4	29.4	42.6	56.6	. .	20 59 29.63	27.51	0.00	VI.	4	4.30	17 13.11	11.5	1.45	20 59 57.14	47 26.1
73	12	. .	. .	. .	. .	. .	. .	12.1	21 0 31.36	27.51	−0.01	VII.	2	7.27	8 44.07	11.4	1.89	21 0 58.86	38 57.4
74	10	54.6	8.5	21.4	34.6	. .	. .	. .	3 34.84	27.51	−0.01	IV.	2	4.21	7 10.60	11.2	0.78	4 2.34	37 22.6
75	10	. .	45.9	. .	11.9	. .	. .	. .	6 12.30	27.50	0.00	IV.	5	9.7	24 32.12	11.0	1.97	6 39.80	21 54 45.1
76	10	. .	. .	. .	. .	. .	. .	30.5	6 50.09	27.50	0.00	VII.	7	8.53	33 25.84	11.0	2.60	7 17.59	22 3 39.4
77	11	. .	. .	. .	. .	. .	31.6	. .	10 4.79	27.50	0.00	VI.	5	8.35	24 15.85	10.8	1.95	10 32.29	21 54 28.6
78	10	. .	. .	27.4	. .	54.9	. .	. .	16 41.29	27.50	+0.01	V.	10	8.35	48 15.66	10.3	3.61	17 8.80	22 18 29.6
79	7	. .	. .	3.6	16.5	29.6	. .	. .	18 16.43	27.50	0.00	V.	4	10.32	20 15.76	10.2	1.67	18 43.93	21 50 27.6
80	10	. .	3.6	16.4	. .	. .	. .	. .	23 30.01	27.49	−0.01	III.	3	3.4	11 30.85	9.9	1.07	23 57.49	36 42.4
81	11	. .	. .	. .	. .	. .	. .	8.5	24 28.00	27.49	0.00	VII.	6	4.12	26 4.15	9.8	2.08	24 55.49	56 16.0
82	11	. .	. .	. .	54.6	. .	. .	. .	27 54.45	27.49	−0.01	IV.	3	8.56	14 28.38	9.6	1.27	28 21.93	21 44 39.3
83	10	. .	. .	. .	36.4	. .	3.9	. .	32 36.62	27.49	+0.01	VI.	10	11.53	49 55.38	9.3	3.73	33 4.12	22 20 8.4
84	8	7.4	21.4	34.6	48.3	. .	. .	. .	47 48.09	27.48	0.00	IV.	4	11.3	20 31.41	8.4	1.67	48 15.57	21 50 41.5
85	8	12.5	27.4	40.6	. .	. .	. .	. .	49 53.81	27.48	0.00	III.	5	7.16	23 36.12	8.3	1.90	50 21.29	53 46.3
86	9	. .	. .	27.4	. .	56.6	. .	. .	51 40.72	27.48	−0.01	V.	1	4.4	2 3.01	8.2	0.42	52 8.19	21 32 11.6
87	10	. .	. .	. .	2.9	. .	29.9	. .	21 59 2.87	27.48	+0.01	VI.	10	10.23	49 10.00	7.8	3.71	21 59 30.36	22 19 21.5
88	10	. .	. .	. .	32.6	. .	59.9	. .	22 1 32.78	27.48	0.00	VI.	3	7.49	13 24.20	7.7	1.23	22 2 0.26	21 43 33.1
89	8	. .	. .	. .	. .	. .	. .	55.6	3 15.12	27.48	0.00	VII.	6	7.30	27 43.99	7.6	2.18	2 42.60	21 57 53.8
90	10	. .	. .	. .	22.6	. .	. .	50.	4 22.79	27.48	+0.01	VII.	8	9.3	48 29.58	7.5	3.66	4 50.28	22 18 40.7
91	9	. .	. .	. .	. .	. .	. .	1.5	5 21.16	27.48	0.00	VII.	8	9.49	38 52.78	7.5	2.99	5 48.64	9 3.3
92	10	. .	. .	. .	. .	8.8	. .	. .	6 55.34	27.48	0.00	VII.	6	14.56	30 58.64	7.4	2.42	7 22.82	22 1 8.5
93	9	. .	. .	. .	. .	. .	9.5	22.6	9 42.32	27.48	0.00	V.	3	9.33	14 47.00	7.3	1.28	10 9.80	21 44 55.6
94	6	. .	. .	38.5	. .	. .	4.9	. .	12 52.20	27.48	+0.01	VI.	10	13.1	50 29.66	7.1	3.80	13 19.69	22 20 40.6
95	9	. .	. .	. .	. .	33.6	. .	. .	22 15 33.45	+27.48	+0.01	V.	10	14.12	−51 5.57	− 7.0	−3.84	22 16 0.94	−22 21 16.4

Zone 183. August 14. P. Belt, −19° 23′. D$_{\circ}$=−19° 1′ 0″.

1	8	. .	. .	. .	. .	56.4	. .	22.9	18 53 43.04	+31.38	0.00	VII.	5	1.22	−20 37.37	−13.5	−1.75	18 54 14.42	−19 21 52.6
2	9	. .	10.5	23.4	. .	. .	. .	. .	56 36.95	31.38	+0.01	III.	8	13.48	40 53.57	13.3	2.87	57 8.34	42 9.7
3	7	16.4	30.4	42.9	. .	. .	. .	. .	58 56.50	31.37	0.00	III.	6	11.59	29 59.92	13.2	2.28	59 27.87	31 15.4
4	9	. .	. .	. .	. .	. .	. .	5.2	18 59 25.12	31.37	−0.01	VII.	2	9.47	9 54.72	13.2	1.17	18 59 56.48	11 9.1
5	10	. .	59.9	. .	25.4	. .	. .	. .	19 2 25.84	31.36	0.00	IV.	5	9.24	24 40.69	13.0	1.98	19 2 57.20	25 55.7
6	10	. .	. .	. .	25.4	. .	51.8	. .	3 25.33	31.36	0.00	VI.	6	6.29	27 13.43	12.9	2.12	3 56.69	28 28.5
7	10	. .	. .	13.2	. .	39.5	. .	. .	5 26.39	31.35	+0.01	V.	8	5.10	36 32.38	12.8	2.63	5 57.75	37 47.8
8	11	12.2	. .	. .	. .	. .	. .	. .	7 52.11	31.34	−0.01	I.	3	7.1	13 30.11	12.6	1.37	8 23.44	14 44.1
9	4	. .	. .	. .	19.5	33.5	46.4	. .	8 19.86	31.34	−0.01	VI.	3	3.29	11 43.36	12.6	1.28	8 51.19	12 57.2
10	9	59.9	. .	. .	. .	. .	. .	. .	10 40.00	31.34	+0.01	I.	8	5.505	36 52.56	12.4	2.66	11 11.35	38 7.6
11	10	. .	. .	. .	18.5	21.9	. .	. .	11 8.44	31.33	−0.01	V.	2	3.385	6 49.14	12.4	1.00	11 39.76	8 2.5
12	8	. .	. .	. .	18.4	31.5	44.6	. .	12 18.24	31.33	0.00	VI.	7	1.57	29 26.02	12.3	2.26	12 49.57	30 40.6
13	9	. .	. .	. .	. .	. .	. .	57.8	19 13 17.82	+31.33	0.00	VI.	4	3.49	−16 52.45	−12.2	−1.56	19 13 49.15	−19 18 6.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 14,	21	+ 28.12	l 0.021	− 0.27	+ 0.87	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(182) 71. Micrometer reading assumed as 3^{r}.24 instead of 4^{r}.24.
(182) 77. Double.
(182) 80. Hor. thread assumed as 2 instead of 3.
(182) 86. Time of transit over T. V assumed as 54^{s}.6 instead of 56^{s}.6.
(182) 88. Micrometer reading assumed as 6^{r}.49 instead of 7^{r}.49.
(182) 89. T. VI assumed to have been recorded as T. VII, and minutes as 2 instead of 3.
(182) 92. Micrometer reading assumed as 13^{r}.56 instead of 14^{r}.56.
(182) 95. Transit over T. IV assumed as recorded over T. V.
(183) 1. Declination 5′ 30″ less than Mural Z. 1848, August 15, and 1849, June 21.
(183) 11. An error of 10^{s} in transit over one of the threads ; T. IV assumed to be 8^{s}.5 instead of 18^{s}.5.
(183) 12. Micrometer reading assumed as 0^{r}.57 instead of 1^{r}.57.

Zone 183. August 14. P. Belt, −19° 23′. $D_0 = -19° 1' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s	° ′ ″
14	10	..	..	59.8	..	..	..	..	19 15 12.75	+31.32	−0.01	VII.	3	3.11	+11 34.13	−12.1	−1.27	19 15 44.06	−19 12 47.5
15	11	..	..	..	..	36.9	..	..	16 23.64	31.32	0.00	V.	6	5.9	26 33.18	12.0	2.09	16 54.96	27 47.3
16	10	4.9	..	..	..	..	..	..	18 45.00	31.31	+0.01	I.	8	6.36	37 15.52	11.9	2.68	19 16.32	38 30.1
17	10	..	..	..	..	..	56.9	..	18 30.57	31.31	−0.01	VI.	1	5.17	2 39.72	11.9	0.75	19 1.87	3 52.4
18	10	..	..	37.5	..	..	..	..	20 50.83	31.31	+0.01	III.	9	2.43	40 17.26	11.7	2.85	21 22.15	41 31.8
19	9	..	..	10.5	24.1	36.9	..	..	22 23.83	31.30	+0.01	IV.	8	12.57	40 27.89	11.6	2.86	22 55.14	41 42.4
20	11	..	..	..	..	42.4	..	..	24 29.04	31.30	−0.01	V.	2	8.555	9 28.99	11.5	1.14	25 0.33	10 41.6
21	10	..	..	..	..	53.9	..	20.4	25 40.38	31.29	0.01	V.	1	8.12	4 8.06	11.4	0.83	26 11.66	5 20.3
22	8	..	..	..	..	23.6	..	..	27 10.24	31.29	−0.01	V.	2	8.59.	9 30.76	11.3	1.14	27 41.52	10 43.2
23	11	..	..	31.9	45.1	8.5	..	..	28 45.11	31.28	0.00	V.	6	14.19	31 10.50	11.2	2.35	29 16.39	32 24.1
24	10	..	..	16.4	..	..	..	..	30 29.63	31.28	0.00	III.	7	7.29	32 43.77	11.1	2.43	31 0.91	33 57.3
25	10	..	..	..	55.9	..	21.9	..	33 55.63	31.27	0.00	VI.	6	5.01	26 29.05	10.9	2.08	34 26.90	27 42.0
26	9	25.4	38.2	51.4	4.9	..	..	..	38 4.70	31.26	−0.01	V.	1	9.185	5 1.50	10.6	0.90	38 35.95	6 13.0
27	11	..	6.8	..	..	..	..	..	40 33.47	31.25	+0.01	II.	9	7.31	42 42.39	10.4	2.99	41 4.73	43 55.8
28	11	..	..	..	..	..	..	32.9	40 52.89	31.25	−0.01	VII.	3	9.1	14 30.62	10.4	1.42	41 24.13	15 42.4
29	8	..	..	..	..	10.6	..	37.4	42 57.42	31.25	0.00	VII.	5	8.20	24 8.15	10.3	1.95	43 28.67	25 20.4
30	9	..	50.4	3.6	16.6	..	..	..	45 16.65	31.24	0.00	IV.	4	5.44	17 50.56	10.1	1.60	45 47.89	19 2.3
31	9	..	..	..	..	21.6	34.6	..	46 8.29	31.24	0.00	VI.	8	1.30	34 41.36	10.1	2.54	46 39.53	35 54.0
32	9	7.4	21.6	33.8	47.4	..	..	..	52 47.46	31.22	0.00	IV.	6	10.38	29 19.11	9.6	2.24	53 18.68	30 31.0
33	10	10.4	24.2	37.4	..	..	..	..	55 50.40	31.22	−0.01	III.	2	10.365	10 19.93	9.4	1.18	56 21.61	11 30.5
34	11	..	..	38.4	51.5	4.9	..	..	56 51.38	31.22	0.01	VII.	1	12.51	6 28.49	9.4	0.96	57 22.59	7 38.9
35	9	..	..	48.4	1.5	14.9	28.	..	19 59 1.48	31.21	−0.01	VI.	3	5.345	12 46.65	9.2	1.32	19 59 32.68	13 57.2
36	9	32.6	46.2	58.9	..	..	..	..	20 1 12.68	31.20	+0.01	III.	10	7.39	47 47.42	9.1	3.29	20 1 43.89	48 59.8
37	11	..	9.9	22.8	..	..	..	..	3 35.99	31.20	−0.01	III.	2	6.52	8 26.72	8.9	1.07	4 7.18	9 36.7
38	10	50.9	5.4	17.5	30.9	..	..	..	5 31.15	31.20	+0.01	IV.	8	8.31	38 13.77	8.8	2.74	6 2.36	39 25.3
39	10	..	..	..	31.6	44.5	57.8	11.4	6 31.39	31.19	0.00	VII.	4	11.20	20 39.71	8.7	1.76	7 2.58	21 50.2
40	10	..	..	..	8.9	..	34.6	..	8 8.46	31.19	+0.01	VI.	9	8.20	43 7.10	8.6	3.02	8 39.66	44 18.7
41	4	..	46.5	59.5	12.8	25.4	38.5	52.5	10 12.59	31.18	0.00	VI.	7	9.406	33 50.04	8.5	2.49	10 43.77	35 1.0
42	11	33.1	46.4	59.9	..	..	..	..	13 12.83	31.18	−0.01	III.	2	7.15	8 38.31	8.3	1.08	13 44.00	9 47.7
43	12	..	..	..	..	36.4	..	..	15 23.06	31.17	−0.01	V.	3	7.36	13 48.01	8.2	1.38	15 54.22	14 57.6
44	9	..	..	58.5	12.5	..	38.5	..	17 12.08	31.17	+0.01	VI.	8	6.11	37 3.05	8.1	2.67	17 43.26	38 13.8
45	10	54.6	8.9	21.6	..	..	..	..	20 35.01	31.16	0.01	III.	7	10.3	34 1.43	7.9	2.50	21 6.18	35 11.8
46	11	..	..	38.5	52.1	5.6	18.4	..	21 52.02	31.16	0.01	VI.	7	14.385	36 20.24	7.8	2.63	22 23.19	37 30.7
47	10	..	..	40.9	53.5	7.8	..	..	23 54.11	31.16	+0.01	V.	10	7.165	47 36.07	7.7	3.29	24 25.28	48 47.1
48	9	55.4	9.4	21.4	34.5	48.6	..	..	26 35.17	31.15	0.00	V.	7	11.35	34 47.82	7.5	2.55	27 6.32	35 57.9
49	11	..	16.4	..	42.6	..	..	..	28 42.65	31.15	0.00	IV.	4	3.6	16 30.89	7.4	1.53	29 13.80	17 39.8
50	10	..	..	..	..	..	..	45.4	29 5.44	31.14	0.00	VII.	4	5.13	17 34.65	7.4	1.59	29 36.58	18 43.6
51	10	3.9	17.4	29.9	..	..	..	..	31 43.53	31.14	0.00	III.	4	3.52	16 54.05	7.2	1.55	32 14.67	18 2.8
52	10	..	44.6	..	..	..	..	..	33 10.97	31.14	−0.01	II.	2	2.49	6 24.10	7.1	0.94	33 42.10	7 32.1
53	11	20.4	35.4	..	..	..	..	..	35 1.28	31.13	+0.01	II.	8	11.36	39 46.94	7.0	2.84	35 32.42	40 56.8
54	11	..	..	..	..	..	49.5	2.9	20 37 23.05	+31.13	0.00	VII.	4	9.58	−19 58.36	− 6.9	−1.72	20 37 54.18	−19 21 7.0

Zone 184. August 15. B. Belt, −20° 38′. $D_0 = -20° 13' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	..	..	42.5	56.3	9.	..	18 0 42.55	+33.02	−0.01	VI.	3	10.9	−15 5.05	−18.1	−1.44	18 1 15.56	−20 29 4.6
2	7	..	..	..	28.	41.5	..	..	2 27.95	33.01	0.01	V.	3	6.14	13 6.66	17.9	1.32	3 0.95	27 5.9
3	8	..	..	..	..	55.	8.	..	3 41.50	33.01	0.01	VI.	3	5.15	12 36.79	17.8	1.29	4 14.50	26 35.9
4	7	..	18.	31.	..	..	..	..	18 5 44.34	+33.00	−0.01	III.	3	3.28	−11 42.94	−17.6	−1.23	18 6 17.33	−20 25 41.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 15,	21	+ 29.69	*l* 0.051			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(183) 23. T. V assumed as 58ˢ.5 instead of 8ˢ.5.
(183) 26. Micrometer reading assumed as 9ʳ.58 instead of 9ʳ.185.

ZONE 184. AUGUST 15. B. BELT, −20° 38′. D$_0$=−20° 13′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
5	8	. .	39.5	52.5	. .	. .	. .	. .	18 7 6.06	+33.00	0.00	III.	5	2.47	−21 20.48	−17.4	−1.79	18 7 39.06	−20 35 19.7
6	9	. .	. .	. .	. .	19.4	32.5	. .	8 5.96	32.99	0.00	VI.	5	8.59	24 27.95	17.3	1.97	8 38.95	38 27.2
7	9	. .	. .	. .	. .	. .	42.4	55.	9 15.39	32.99	+0.01	VII.	8	11.32	39 44.78	17.2	2.85	9 48.39	53 44.8
8	8	. .	. .	. .	. .	53.	6.	. .	11 39.50	32.99	−0.01	VI.	2	4.2	7 0.89	17.0	0.96	12 12.48	20 58.9
9	8	. .	24.	. .	50.	. .	. .	. .	13 50.31	32.98	0.00	IV.	6	11.49	30 25.16	16.8	2.33	14 23.29	44 24.3
10	7	. .	1.5	14.	. .	. .	. .	. .	15 27.88	32.98	+0.01	III.	8	7.4	37 29.87	16.6	2.75	16 0.87	51 29.2
11	5.6	. .	. .	. .	. .	. .	18.2	32.	15 51.70	32.98	0.00	VII.	5	6.225	23 8.89	16.5	1.89	16 24.68	20 37 7.3
12	8	. .	. .	. .	20.	33.2	. .	. .	20 19.89	32.97	+0.01	V.	10	9.25	48 40.86	16.1	3.44	20 52.87	21 2 40.4
13	7	. .	. .	. .	. .	. .	. .	45.5	21 5.11	32.96	−0.01	VII.	2	8.4	9 2.78	16.0	1.06	21 38.06	20 22 59.8
14	9	. .	. .	. .	. .	. .	. .	14.	22 33.92	32.96	0.00	VII.	7	6.31	32 14.28	15.8	2.42	23 6.88	46 12.5
15	9	. .	. .	. .	. .	. .	29.5	43.	24 2.89	32.96	0.00	VII.	6	11.39	29 49.59	15.7	2.28	24 35.85	43 47.6
16	8	. .	. .	. .	50.5	4.	. .	. .	25 50.53	32.95	+0.01	V.	9	8.25	43 9.71	15.5	3.08	26 23.49	57 8.3
17	8	. .	. .	. .	. .	25.	38.	51.3	27 11.31	32.95	−0.01	VII.	3	4.1	11 59.34	15.3	1.24	27 44.25	25 55.9
18	7	. .	. .	. .	. .	11.	24.	. .	32 57.50	32.94	0.01	VI.	3	6.13	13 6.04	14.7	1.31	33 30.43	27 2.1
19	9	. .	. .	. .	. .	4.2	17.	. .	34 50.59	32.93	−0.01	VI.	2	5.5	7 32.65	14.5	0.98	35 23.51	21 28.1
20	9	. .	. .	. .	. .	. .	. .	37.5	35 57.56	32.93	+0.01	VII.	9	6.3	42 7.86	14.4	3.02	36 30.50	56 5.3
21	8	. .	. .	. .	30.3	44.	. .	. .	37 30.39	32.93	0.00	V.	6	6.43	27 20.58	14.2	2.14	38 3.32	41 16.9
22	6.7	. .	. .	59.5	13.2	26.	. .	. .	40 12.73	32.92	−0.01	V.	3	10.005	15 31.12	13.9	1.42	40 45.64	29 26.4
23	7	. .	. .	. .	. .	46.	. .	. .	41 32.55	32.92	−0.01	V.	3	7.49	13 54.56	13.8	1.35	42 5.46	27 49.7
24	7	. .	. .	. .	. .	. .	0.	14.	42 33.58	32.91	0.00	VII.	4	7.49	18 53.31	13.6	1.64	43 6.49	32 48.6
25	9	. .	. .	. .	20.	34.	. .	. .	44 20.22	32.91	0.00	IV.	5	3.1	21 27.56	13.4	1.80	44 53.13	35 22.8
26	8	. .	. .	. .	. .	44.5	. .	11.	45 30.87	32.90	−0.01	VII.	3	10.025	15 1.66	13.3	1.42	46 3.76	28 56.3
27	6	11.5	26.	39.	52.	. .	. .	. .	47 52.12	32.90	+0.01	IV.	8	5.445	36 49.81	13.1	2.70	48 25.03	50 45.6
28	8	. .	. .	. .	. .	57.	10.	. .	48 43.51	32.90	0.00	VI.	5	6.29	23 12.33	13.0	1.89	49 16.41	37 7.2
29	9	. .	. .	58.	11.	. .	. .	. .	51 11.12	32.89	+0.01	VII.	8	3.18	35 35.65	12.7	2.63	51 44.02	49 31.0
30	9	. .	. .	. .	37.	50.5	. .	. .	52 36.97	32.89	0.00	V.	4	10.10	20 4.66	12.5	1.72	53 9.86	33 58.9
31	8	. .	. .	. .	. .	. .	. .	55.	53 14.79	32.89	0.00	VII.	5	7.47	23 21.25	12.5	1.90	53 47.68	37 15.6
32	8	. .	. .	. .	. .	. .	19.	32.5	54 52.27	32.88	−0.01	VII.	2	5.6	7 33.02	12.3	0.98	55 25.14	21 26.3
33	9	. .	. .	. .	50.5	4.2	. .	. .	57 50.60	32.88	0.00	VI.	7	3.10	30 33.06	12.0	2.34	58 23.48	44 27.4
34	9	. .	. .	. .	. .	8.	. .	35.	18 58 54.63	32.87	−0.01	VII.	4	2.56	16 25.57	11.9	1.49	18 59 27.49	30 19.0
35	8	. .	. .	. .	. .	. .	51.2	4.2	19 0 24.32	32.87	0.00	VII.	6	6.41	27 19.32	11.7	2.14	19 0 57.19	41 13.2
36	9	. .	. .	. .	. .	7.	20.	33.2	1 53.32	32.87	0.00	VII.	4	12.35	21 17.52	11.5	1.78	2 26.19	35 10.8
37	9	. .	. .	. .	. .	56.3	9.5	. .	3 42.92	32.86	0.00	VI.	5	12.24	26 11.31	11.3	2.07	4 15.78	40 4.7
38	9	. .	. .	29.5	43.	56.5	. .	. .	6 42.92	32.86	0.00	V.	6	9.40	28 49.83	11.0	2.23	7 15.78	42 43.1
39	8	. .	. .	. .	. .	59.5	12.5	26.	7 46.00	32.86	+0.01	VII.	7	11.8	34 33.94	10.9	2.57	8 18.87	48 27.4
40	8	. .	. .	. .	. .	. .	22.2	35.5	8 55.48	32.85	0.00	VII.	6	9.1	28 29.91	10.8	2.21	9 28.33	42 22.9
41	9	. .	. .	. .	. .	. .	. .	43.5	10 3.35	32.85	0.00	VII.	6	6.50	27 23.86	10.6	2.14	10 36.20	41 16.6
42	9	. .	. .	41.5	54.2	. .	. .	. .	12 54.37	32.85	0.00	IV.	5	3.54	21 54.29	10.3	1.81	13 27.22	35 46.4
43	9	. .	. .	. .	30.	43.5	. .	. .	14 29.96	32.84	−0.01	V.	3	10.33	15 17.26	10.1	1.42	15 2.79	29 8.8
44	8	. .	. .	. .	. .	21.5	34.3	. .	17 7.93	32.84	+0.01	VI.	8	9.51	38 53.96	9.8	2.83	17 40.78	52 46.6
45	7	. .	. .	. .	. .	. .	37.	50.3	18 10.29	32.83	0.00	VII.	6	11.37	25 47.48	9.7	2.04	18 43.12	39 39.2
46	9	. .	. .	. .	. .	58.	11.	. .	19 44.52	32.83	0.00	VI.	5	8.18	24 7.27	9.5	1.95	20 17.35	37 58.7
47	9	. .	49.5	. .	6.	. .	. .	. .	22 16.06	32.82	0.00	IV.	6	11.39	29 49.87	9.2	2.29	22 48.88	43 41.4
48	9	. .	. .	. .	. .	. .	9.5	22.3	22 42.53	32.82	0.00	VII.	6	9.33	28 46.05	9.2	2.23	23 15.35	42 37.5
49	9	8.	22.3	. .	. .	. .	. .	. .	27 48.71	32.81	0.00	II.	6	7.30	27 44.17	8.6	2.16	28 21.52	41 34.9
50	9	. .	. .	50.	3.	. .	. .	. .	29 2.80	32.81	0.00	IV.	5	9.1	24 29.09	8.5	1.97	29 42.61	38 19.6
51	9	20.5	33.	. .	. .	. .	. .	. .	30 46.86	32.81	+0.01	II.	8	10.35	39 16.16	8.4	2.86	31 19.68	53 7.4
52	9	. .	. .	36.	. .	3.	. .	. .	31 49.45	32.81	0,00	V.	6	7.50	27 54.36	8.2	2.17	32 22.26	41 44.7
53	9	. .	. .	12.7	26.	. .	. .	. .	19 33 25.85	+32.80	0.00	IV.	4	7.25	−18 41.48	− 8.0	−1.62	19 33 58.65	−20 32 31.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.			Barom.	THERMOM. At.	THERMOM. Ex.
	1848.	h.	m.	in.	°	°

REMARKS.

(184) 5. Micrometer reading assumed as $2^{r}.47$ instead of $24^{r}.7$.
(184) 10. Micrometer reading assumed as $12^{r}.49$ instead of $11^{r}.49$.
(184) 22. Micrometer reading assumed as $11^{r}.005$ instead of $10^{r}.005$.
(184) 23. Double star; observed the first.
(184) 31. Micrometer reading assumed as $6^{r}.47$ instead of $7^{r}.47$.
(184) 45. Hor. thread assumed as 5 instead of 6.
(184) 47. One of the transits erroneous by 10^{s}; T. IV assumed as observed at $16^{s}.0$.
(184) 50. Transit over T. VII assumed as recorded over T. III.
(184) 51. Transits over T.'s II and III assumed as recorded over T.'s I and II; other transits rejected.

Zone 184. August 15. B. Belt, −20° 38′. D_0=−20° 13′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
54	9	. .	. .	. .	. .	. .	28.5	42.	19 34 1.82	+32.80	0.00	VII.	4	3.59	−16 57.33	− 7.9	−1.52	19 34 34.62	−20 30 46.8
55	9	. .	. .	. .	. .	. .	. .	32.8	34 52.57	32.80	0.00	VII.	5	3.35	21 44.43	7.8	1.80	35 25.37	35 34.0
56	9	. .	38.5	51.5	. .	. .	. .	. .	37 4.90	32.79	0.00	III.	4	5.37	17 47.00	7.6	1.57	37 37.69	31 36.2
57	10	. .	. .	. .	52.	5.6	. .	. .	38 52.08	32.79	+0.01	V.	9	4.30	41 11.22	7.4	2.98	39 24.88	55 1.6
58	10	. .	7.	20.	33.	. .	. .	. .	40 33.23	32.79	0.00	IV.	4	10.2	20 0.66	7.2	1.70	41 6.02	33 49.6
59	10	11.4	25.	38.	. .	. .	. .	. .	42 51.50	32.78	0.00	III.	4	7.35	18 46.50	6.9	1.63	43 24.28	32 35.0
60	9	. .	24.	36.8	49.5	. .	. .	. .	45 50.07	32.78	0.00	IV.	6	11.52	29 56.42	6.6	2.29	46 22.85	43 45.3
61	10	. .	. .	. .	38.4	51.6	. .	. .	47 38.28	32.78	+0.01	V.	9	11.42	44 49.05	6.4	3.21	48 11.07	58 38.7
62	9	. .	. .	28.2	41.1	. .	. .	. .	49 41.12	32.78	−0.01	IV.	3	10.34	15 17.80	6.2	1.41	50 13.89	29 5.4
63	9	. .	. .	12.5	26.	. .	. .	. .	55 25.02	32.76	+0.01	IV.	9	9.1	43 27.89	5.6	3.13	55 58.69	57 16.6
64	9	. .	44.	57.	10.	. .	. .	. .	19 57 10.24	32.75	0.00	IV.	4	10.25	20 12.25	5.4	1.71	19 57 42.99	20 33 59.4
65	8	. .	48.	0.5	13.5	. .	. .	. .	20 0 14.11	32.75	+0.01	IV.	10	7.29	47 42.40	5.1	3.40	20 0 46.87	21 1 30.9
66	8	. .	29.	40.	. .	. .	. .	. .	1 53.52	32.75	0.00	III.	6	8.57	28 28.15	4.9	2.21	2 26.27	20 42 15.3
67	8	. .	. .	. .	. .	31.	44.4	. .	2 17.71	32.74	0.00	VI.	6	3.15	25 35.58	4.8	2.04	2 50.45	39 22.4
68	8	. .	. .	. .	7.	20.4	. .	. .	4 6.89	32.74	−0.01	V.	2	2.38	6 18.64	4.6	0.87	4 39.62	20 4.1
69	9	. .	. .	51.5	4.5	. .	. .	. .	6 4.67	32.74	+0.01	IV.	9	7.57	42 55.62	4.4	3.10	6 37.42	56 43.1
70	10	. .	. .	9.	22.3	. .	. .	. .	7 22.18	32.74	0.00	IV.	5	8.48	24 22.54	4.3	1.96	7 54.92	38 8.8
71	8	. .	. .	. .	. .	. .	. .	40.	8 59.63	32.73	−0.01	VII.	3	2.34	11 15.48	4.1	1.15	8 32.35	25 0.7
72	8	. .	. .	5.	18.2	. .	. .	. .	10 18.06	32.73	0.01	IV.	3	7.37	13 48.54	4.0	1.32	10 50.78	27 33.9
73	9	. .	. .	. .	. .	. .	. .	19.4	10 39.06	32.73	−0.01	VII.	3	7.20	13 39.68	4.0	1.31	11 11.78	27 25.0
74	9	26.	40.5	53.3	. .	. .	. .	. .	13 6.73	32.73	0.00	III.	6	8.43	28 21.09	3.7	2.20	13 39.46	20 42 7.0
75	9	. .	. .	0.	13.2	27.	. .	. .	14 13.44	32.73	+0.01	V.	10	5.8	46 31.27	3.6	3.33	14 46.18	21 0 18.2
76	9	. .	. .	30.	43.	. .	. .	. .	15 42.98	32.73	−0.01	IV.	3	11.32	15 47.04	3.4	1.44	16 15.70	20 29 31.9
77	9	. .	. .	38.8	51.6	5.	. .	. .	17 51.59	32.72	−0.01	V.	2	3.1	6 30.23	3.2	0.87	18 24.30	20 14.3
78	9	. .	. .	. .	. .	. .	15.3	29.	18 48.81	32.72	+0.01	VII.	7	9.54	33 56.64	3.1	2.55	19 21.54	47 42.3
79	9	27.5	41.8	54.2	. .	. .	. .	. .	21 8.01	32.72	0.00	III.	7	7.40	32 49.32	2.9	2.48	21 40.73	46 34.7
80	9	. .	. .	55.2	8.2	22.	. .	. .	22 8.24	32.72	−0.01	V.	1	8.28	4 16.12	2.8	0.76	22 40.95	17 59.7
81	9	. .	. .	. .	33.7	47.1	. .	. .	23 33.62	32.71	0.00	V.	4	11.5	20 32.39	2.6	1.72	24 6.33	20 34 16.7
82	8	. .	. .	. .	40.5	53.	6.2	. .	24 39.87	32.71	+0.01	VI.	10	9.57	48 56.89	2.5	3.49	25 12.59	21 2 42.9
83	9	. .	. .	. .	. .	. .	18.	31.3	25 51.26	32.71	0.00	VII.	5	11.46	25 52.02	2.4	2.05	26 23.97	20 39 36.5
84	9	. .	. .	. .	31.	44.5	. .	. .	27 30.94	32.71	−0.01	V.	2	3.54	6 56.96	2.2	0.91	28 3.64	20 40.1
85	9	. .	. .	. .	. .	. .	. .	51.2	28 10.79	32.71	−0.01	VII.	2	6.34	8 17.40	2.2	0.98	28 43.49	22 0.6
86	10	. .	58.	11.2	24.3	. .	. .	. .	20 30 24.42	+32.70	0.00	IV.	5	6.18	−23 6.90	− 1.9	−1.89	20 30 57.12	−20 36 50.7

Zone 185. August 16. P. Belt, −18° 46′. D_0=−18° 21′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	27.4	. .	. .	. .	. .	. .	. .	17 57 7.40	+33.96	+0.01	I.	9	7.23	−42 38.20	−29.6	−2.91	17 57 41.37	−19 4 30.7
2	9	. .	. .	. .	. .	32.4	. .	58.5	17 57 19.11	33.96	+0.01	VII.	8	7.15	37 35.17	29.6	2.66	17 57 53.08	18 59 27.4
3	10	55.6	8.4	21.5	. .	. .	. .	. .	18 0 21.64	33.95	0.00	III.	6	11.47	29 53.87	28.2	2.25	18 0 55.59	51 44.3
4	10	. .	. .	. .	. .	. .	. .	11.9	1 32.29	33.95	0.00	VII.	7	5.33	31 45.04	28.1	2.35	2 6.24	53 35.5
5	10	. .	. .	. .	. .	. .	32.9	. .	3 6.59	33.94	0.00	VI.	7	5.20	31 38.64	27.9	2.34	3 40.53	53 28.9
6	9	. .	. .	. .	. .	43.6	56.4	9.5	4 30.07	33.94	0.00	VII.	6	4.12	26 4.20	27.7	2.06	5 4.01	47 54.0
7	9	. .	. .	. .	. .	. .	. .	1.5	5 21.82	33.94	0.00	VII.	6	6.49	27 23.37	27.6	2.13	5 55.76	49 13.1
8	8	. .	. .	. .	. .	27.4	. .	54.5	7 14.53	33.93	0.00	VII.	6	10.24	29 11.78	27.4	2.21	7 48.46	51 1.4
9	9	. .	. .	. .	. .	. .	. .	15.5	8 35.76	33.93	0.00	VII.	5	6.42	23 18.74	27.3	1.91	9 9.69	45 8.0
10	9	. .	. .	. .	. .	. .	. .	16.9	9 37.00	33.92	−0.01	VII.	3	3.58	11 57.83	27.2	1.34	10 10.91	33 46.4
11	3	20.4	34.5	46.5	. .	. .	. .	. .	11 0.32	33.92	0.00	III.	7	6.57	32 24.61	27.0	2.38	11 34.24	54 14.0
12	11	. .	. .	. .	. .	. .	. .	58.5	18 12 18.62	+33.92	−0.01	VII.	3	6.26	−13 12.47	−26.9	−1.41	18 12 52.53	−18 35 0.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 16,	21	+ 30.60	l 0.052			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(184) 66. Transit over T. II assumed as 27^s instead of 29^s.
(184) 71. Minutes assumed as 7 instead of 8.
(185) 3. Transits over T.'s II, III, and IV assumed to have been recorded as over T.'s I, II, and III.

ZONE 185. AUGUST 16. P. BELT, −18° 46′. D₀=−18° 21′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	11	41.5	. .	. .	. .	. .	. .	. .	18 15 21.37	+33.91	0.00	I.	6	5.42	−26 49.58	−26.5	−2.09	18 15 55.28	−18 48 38.2
14	9	. .	. .	. .	. .	51.4	. .	17.9	15 38.09	33.91	−0.01	VII.	3	10.00	15 0.38	26.5	1.48	16 11.99	36 48.4
15	10	. .	. .	. .	. .	. .	16.0	29.8	16 49.85	33.90	0.01	VII.	3	10.32	15 16.52	26.4	1.50	17 23.74	37 4.4
16	10	. .	. .	. .	. .	. .	. .	19.7	17 39.82	33.90	0.01	VII.	3	5.495	12 54.06	26.3	1.38	18 13.71	34 41.7
17	11	. .	. .	. .	25.6	. .	52.4	. .	19 25.80	33.90	−0.01	VI.	3	7.58	13 59.01	26.1	1.43	19 59.69	35 46.5
18	8	. .	. .	. .	. .	2.9	15.4	28.4	20 49.17	33.89	0.00	VII.	6	6.44	27 20.85	25.9	2.12	21 23.06	49 8.9
19	7	. .	. .	. .	. .	18.5	31.5	45.6	22 5.37	33.89	−0.01	VII.	2	6.22	8 11.35	25.8	1.14	22 39.25	29 58.3
20	8	. .	. .	. .	49.4	2.9	15.5	28.5	23 49.15	33.88	−0.01	VII.	2	3.115	6 35.28	25.6	1.07	24 23.02	28 22.0
21	8	. .	49.5	2.1	15.4	. .	. .	. .	26 15.40	33.88	0.00	IV.	4	6.00	17 58.63	25.3	1.64	26 49.28	39 45.6
22	9	. .	. .	. .	. .	. .	36.5	49.9	27 10.24	33.87	0.00	VII.	7	6.595	32 28.66	25.2	2.39	27 44.11	54 16.3
23	10	. .	. .	. .	. .	12.9	25.6	. .	28 59.47	33.87	−0.00	VI.	2	7.22	8 41.76	25.0	1.17	29 33.33	30 27.9
24	11	. .	. .	. .	. .	26.9	. .	53.9	32 13.98	33.86	0.00	VII.	6	11.24	29 42.03	24.6	2.24	32 47.84	51 28.9
25	9	. .	17.4	29.5	42.8	. .	. .	. .	34 43.07	33.85	0.00	IV.	7	7.18	32 38.25	24.3	2.40	35 16.92	55 25.0
26	8	53.5	7.4	19.9	. .	. .	. .	. .	36 33.23	33.85	−0.01	III.	2	8.12	9 7.06	24.1	1.18	37 7.07	30 52.3
27	9	. .	45.5	58.5	. .	. .	. .	. .	38 11.84	33.84	0.00	III.	7	7.40	32 49.32	23.9	2.44	38 45.68	54 35.7
28	8	. .	. .	. .	. .	. .	50.4	. .	39 24.12	33.84	0.00	VI.	5	7.38	23 47.13	23.8	1.93	39 57.96	45 32.9
29	11	. .	. .	. .	. .	. .	18.9	32.5	41 52.77	33.83	+0.01	VII.	8	7.00	37 27.61	23.5	2.67	42 26.61	59 13.8
30	9	. .	. .	. .	45.1	58.5	11.5	. .	43 45.15	33.83	0.00	VI.	6	6.4	27 0.84	23.2	2.11	44 18.98	18 48 46.2
31	10	. .	31.4	43.6	. .	. .	. .	. .	45 57.50	33.82	+0.01	III.	10	8.6	48 1.04	23.0	3.22	46 31.33	19 9 47.3
32	8	. .	. .	39.9	52.9	6.1	. .	. .	46 52.91	33.82	0.00	V.	7	6.3	32 0.41	22.9	2.37	47 26.73	18 53 45.7
33	9	27.8	. .	. .	. .	. .	. .	. .	49 7.62	33.82	0.00	I.	5	3.49	21 51.50	22.6	1.84	49 41.44	43 35.9
34	10	. .	. .	. .	. .	20.4	. .	46.9	49 7.15	33.82	0.00	VII.	5	3.59	21 56.54	22.6	1.84	49 40.97	43 41.0
35	8	. .	. .	. .	. .	19.4	27.5	40.9	50 1.19	33.81	0.00	VII.	6	1.29	24 42.00	22.5	1.98	50 35.00	46 26.5
36	9	. .	. .	36.4	49.4	. .	. .	. .	53 49.29	33.80	−0.01	IV.	3	7.425	13 51.31	22.0	1.41	54 23.08	18 35 34.7
37	8	. .	46.4	58.5	11.8	. .	. .	. .	54 12.12	33.80	+0.01	IV.	8	10.455	39 21.59	22.0	2.76	54 45.93	19 1 6.4
38	10	. .	. .	14.5	. .	40.5	. .	. .	55 27.51	33.80	0.00	V.	7	9.425	33 51.09	21.8	2.47	56 1.31	18 55 35.4
39	10	. .	. .	. .	43.5	. .	9.9	. .	56 43.52	33.79	−0.01	VI.	1	3.2	1 31.66	21.7	0.81	57 17.30	23 14.2
40	7	. .	. .	. .	. .	. .	13.5	27.5	57 47.57	33.79	+0.01	VII.	8	4.20	36 6.93	21.5	2.59	18 58 21.37	57 51.0
41	8	. .	23.8	36.4	. .	. .	. .	. .	59 36.61	33.79	0.00	III.	7	8.13	33 5.96	21.3	2.48	19 0 10.40	54 49.7
42	11	. .	. .	. .	. .	. .	. .	29.5	18 59 49.74	33.79	0.00	VII.	5	4.14	21 33.85	21.3	1.80	0 23.53	43 17.0
43	12	. .	. .	. .	. .	30.5	. .	. .	19 2 17.17	33.78	−0.01	V.	1	10.453	5 25.36	21.0	1.00	2 50.94	18 27 7.4
44	10	. .	. .	. .	4.5	. .	30.5	. .	4 4.26	33.77	+0.01	VI.	9	11.3	44 29.30	20.8	3.03	4 38.04	19 6 13.1
45	10	. .	. .	. .	. .	43.9	. .	. .	5 30.67	33.77	0.00	V.	5	8.6	24 1.34	20.6	1.95	6 4.44	18 45 43.9
46	9	. .	. .	37.5	50.5	. .	. .	. .	6 50.52	33.77	0.00	IV.	7	8.6	33 2.47	20.5	2.42	7 24.29	54 45.4
47	10	. .	41.5	. .	7.4	. .	33.6	. .	8 7.50	33.77	0.00	VI.	6	9.42	28 50.76	20.3	2.20	8 41.27	18 50 33.3
48	10	. .	. .	. .	. .	. .	50.5	3.5	9 24.02	33.76	0.00	.	7	.	38 28.39	20.2	2.72	9 57.78	19 0 11.3
49	10	. .	. .	. .	. .	18.9	31.4	44.6	11 5.38	33.76	+0.01	VII.	10	5.005	46 27.25	20.0	3.14	11 39.15	19 8 10.4
50	10	. .	. .	. .	. .	. .	49.5	. .	13 23.21	33.75	0.00	VI.	6	7.37	27 47.73	19.7	2.15	13 56.96	18 49 29.6
51	9	52.5	6.4	18.5	. .	. .	. .	. .	15 32.33	33.75	0.00	III.	7	7.4	32 31.17	19.4	2.40	16 6.08	54 13.0
52	9	. .	. .	. .	. .	. .	15.2	28.5	15 48.86	33.75	0.00	VII.	6	10.38	29 18.84	19.4	2.22	16 22.61	51 0.5
53	9	. .	. .	9.5	. .	. .	. .	27.5	18 48.48	33.74	0.00	III.	4	4.12	17 34.40	19.0	1.61	19 22.22	39 15.0
54	9	. .	. .	. .	. .	. .	. .	. .	19	33.74	0.00	VII.	4	5.36	17 46.26	. .	1.62		
55	10	. .	25.4	38.5	. .	. .	. .	. .	20 51.55	33.74	−0.01	III.	3	2.45	11 21.27	18.8	1.28	21 25.28	33 1.4
56	10	. .	. .	. .	. .	. .	5.4	18.5	22 39.02	33.73	+0.01	VII.	8	4.54	36 24.08	18.6	2.61	23 12.76	58 5.3
57	10	. .	. .	. .	. .	29.9	42.6	57.5	24 16.98	33.73	0.00	VII.	7	10.65	34 2.96	18.4	2.48	24 50.71	55 43.8
58	10	. .	. .	. .	. .	. .	. .	8.5	25 28.49	33.72	−0.01	VII.	1	7.185	3 40.83	18.3	0.91	26 2.20	18 25 20.0
59	8	. .	. .	. .	. .	20.5	33.6	46.6	27 7.30	33.72	+0.01	VII.	10	10.24	49 10.38	18.1	3.30	27 41.03	19 10 51.8
60	9	22.5	36.4	. .	. .	. .	. .	. .	31 2.53	33.71	0.00	II.	4	5.6	17 31.29	17.6	1.60	31 36.24	18 39 10.5
61	10	56.5	9.9	22.9	. .	. .	. .	. .	19 33 36.08	+33.70	−0.01	III.	2	12.5	−11 4.54	−17.3	−1.27	19 34 9.77	−18 32 43.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(185) 28. Double.
(185) 35. Transit over T. V assumed as 14ˢ.4 instead of 19ˢ.4.
(185) 41. Transits over T.'s III and IV assumed to have been recorded as over T.'s II and III.
(185) 42. Micrometer reading assumed as 3ʳ.14 instead of 4ʳ.14.
(185) 48. Hor. thread assumed as 8, and rev. as 9.
(185) 53. Transit observations incongruous, and can be approximately reconciled only by assuming the transit over T. I to have been recorded as over T. III.
(185) 54. Micrometer reading assumed as 5ʳ.12 instead of 4ʳ.12.

ZONE 185. AUGUST 16. P. BELT, −18° 46′. D₀=−18° 21′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
62	10	. .	20.4	. .	. .	. .	. .	. .	19 35 46.69	+33.70	−0.01	II.	2	7.9	− 8 35.21	−17.1	−1.14	19 36 20.38	−18 30 13.5
63	10	. .	. .	. .	. .	. .	. .	25.9	35 45.96	33.70	0.01	VII.	2	7.31	8 46.14	17.1	1.15	36 19.65	30 24.4
64	10	. .	. .	. .	. .	. .	37.4	51.5	37 11.36	33.70	−0.01	VII.	2	8.115	9 6.56	16.9	1.17	37 45.05	18 30 44.6
65	10	. .	. .	. .	. .	2.9	15.2	28.4	38 49.17	33.70	+0.01	VII.	8	9.28	38 42.23	16.7	2.73	39 22.88	19 0 21.7
66	9	40.5	54.9	6.6	. .	. .	. .	. .	43 20.41	33.69	0.00	III.	4	13.20	21 40.46	16.2	1.82	43 54.10	18 43 18.5
67	11	. .	. .	. .	. .	35.	. .	. .	45 21.69	33.68	−0.01	V.	2	6.126	8 5.85	15.9	1.12	45 55.36	29 42.9
68	10	55.5	8.4	21.5	. .	. .	. .	. .	47 34.83	33.68	0.00	.	4	3.28	16 41.97	15.7	1.55	48 8.51	38 19.2
69	10	. .	. .	. .	. .	. .	. .	24.6	47 44.86	33.68	0.00	.	5	7.32	23 44.22	15.7	1.93	48 18.54	45 21.9
70	9	. .	. .	. .	. .	. .	. .	29.9	48 50.11	33.68	0.00	VII.	4	8.58	19 28.11	15.6	1.70	49 23.79	41 5.4
71	9	49.5	3.4	. .	. .	. .	. .	. .	51 29.55	33.67	0.00	II.	4	10.00	19 59.54	15.2	1.73	52 3.22	41 36.5
72	7	0.9	14.9	27.4	40.4	. .	. .	. .	53 40.78	33.67	+0.01	IV.	8	3.39	35 46.53	15.0	2.58	54 14.46	18 57 24.1
73	9	. .	. .	. .	. .	. .	13.6	. .	55 47.26	33.66	+0.01	VI.	10	11.50	49 53.90	14.7	3.35	56 20.93	19 11 32.0
74	10	. .	. .	. .	16.9	30.5	44.5	56.4	58 17.21	33.66	0.00	.	5	4.45	22 20.01	14.5	1.86	19 58 50.87	18 43 [56.4]
75	11	. .	. .	. .	36.4	. .	3.8	. .	19 59 36.92	33.65	−0.01	VI.	1	1.40	0 50.31	14.3	0.76	20 0 10.56	22 25.4
76	10	. .	. .	. .	. .	. .	. .	9.9	20 0 30.19	33.65	0.00	VII.	6	2.37	25 16.30	14.2	2.02	1 3.84	46 52.5
77	9	. .	. .	. .	. .	17.4	30.5	43.5	3 3.99	33.65	−0.01	VII.	3	7.1	13 30.11	13.9	1.38	3 37.63	35 5.4
78	10	. .	. .	. .	. .	43.6	56.8	10.2	4 30.49	33.64	0.00	VII.	6	11.12	29 35.95	13.8	2.25	5 4.13	51 12.0
79	11	. .	. .	. .	. .	. .	39.4	53.5	6 13.29	33.64	0.00	VII.	5	5.25	22 28.56	13.6	1.87	6 46.93	44 4.0
80	8	. .	. .	. .	48.4	2.	15.5	. .	7 48.75	33.64	0.00	VI.	7	5.32	31 44.67	13.4	2.36	8 22.39	53 20.4
81	9	. .	. .	. .	. .	. .	16.4	29.8	8 50.08	33.63	0.00	VII.	5	3.54	21 54.02	13.3	1.83	9 23.71	43 29.2
82	8	3.9	17.4	30.1	. .	. .	. .	. .	11 43.49	33.63	−0.01	III.	3	11.446	15 53.36	13.0	1.51	12 17.11	37 27.9
83	9	. .	. .	. .	. .	. .	. .	30.5	11 50.79	33.63	0.00	VII.	5	11.59	25 58.58	13.0	2.05	12 24.42	47 33.6
84	8	. .	. .	. .	. .	10.4	24.3	37.4	13 57.64	33.63	0.00	VII.	6	6.495	27 23.62	12.7	2.13	14 31.27	48 58.5
85	10	3.9	18.5	. .	. .	. .	. .	. .	16 44.44	33.62	+0.01	II.	8	5.00	36 27.26	12.4	2.62	17 18.07	58 2.3
86	9	. .	. .	0.3	13.8	27.4	40.5	. .	17 13.87	33.62	0.00	VI.	6	10.585	29 29.33	12.4	2.24	17 47.49	51 4.0
87	2.3	. .	. .	. .	. .	. .	36.4	49.9	18 10.13	33.62	0.00	VII.	4	10.46	20 22.58	12.3	1.75	18 43.75	41 56.6
88	8	. .	. .	. .	. .	6.6	. .	. .	19 53.25	33.62	−0.01	V.	1	0.9	0 4.51	12.1	0.71	20 26.86	21 37.3
89	10	. .	. .	. .	16.4	. .	42.6	. .	22 16.30	33.61	0.01	VI.	3	7.00	13 29.77	11.8	1.38	22 49.90	35 3.0
90	11	8.8	22.6	. .	. .	. .	. .	. .	26 48.70	33.60	0.01	II.	2	4.17	7 8.48	11.3	1.05	27 22.29	28 40.8
91	11	. .	. .	. .	. .	59.4	. .	. .	27 46.11	33.60	0.01	V.	3	4.56	12 27.33	11.2	1.32	28 19.70	33 59.9
92	10	. .	. .	. .	. .	. .	1.2	. .	28 45.78	33.60	−0.01	VI.	1	3.005	1 30.90	11.1	0.78	29 19.37	23 2.8
93	4	. .	. .	. .	. .	9.4	22.9	36.5	30 56.49	33.60	0.00	VII.	4	6.34	18 15.51	10.9	1.63	31 30.09	39 48.0
94	7	54.6	8.4	20.7	. .	. .	. .	. .	33 34.26	33.59	−0.01	III.	4	3.585	16 57.32	10.6	1.57	34 7.84	38 29.5
95	9	. .	. .	. .	. .	37.4	50.4	. .	34 24.15	33.59	0.00	VI.	5	8.24	24 10.33	10.5	1.96	34 57.74	45 42.8
96	11	. .	. .	. .	53.6	. .	19.5	. .	36 53.32	33.59	0.00	VI.	6	10.115	29 5.63	10.2	2.23	37 26.91	18 50 38.1
97	9	. .	. .	. .	. .	29.8	. .	. .	38 16.70	33.59	+0.01	V.	10	9.15	48 35.82	10.1	3.28	38 50.30	19 10 9.2
98	9	. .	. .	. .	. .	. .	45.5	59.5	40 19.49	33.58	0.00	VII.	5	6.42	23 18.74	9.9	1.91	39 53.07	18 44 50.6
99	10	. .	. .	. .	43.9	. .	10.5	. .	41 43.99	33.58	0.00	VI.	5	11.23	25 40.58	9.7	2.04	42 17.57	47 12.3
100	8	5.5	19.6	32.6	. .	. .	. .	. .	45 45.52	33.58	−0.01	III.	2	5.40	7 50.41	9.3	1.08	46 19.09	18 29 20.8
101	10	. .	. .	. .	39.5	52.6	5.7	. .	46 39.40	33.58	+0.01	VI.	10	6.54	47 24.65	9.2	3.23	47 12.99	19 8 57.1
102	10	. .	. .	. .	20.0	. .	. .	. .	48 19.85	33.57	−0.01	IV.	1	7.15	3 32.53	9.0	0.86	48 53.41	18 25 2.4
103	10	. .	36.6	. .	. .	. .	. .	. .	50? 2.86	33.57	0.01	II.	1	10.35	5 20.09	8.9	0 95	50 36.42	26 49.9
104	10	. .	. .	. .	. .	. .	. .	42.3	50 2.30	33.57	−0.01	VII.	1	9.44	4 54.21	8.9	0.94	50 35.86	26 24.1
105	10	11.5	. .	. .	. .	. .	. .	. .	52 51.33	33.57	0.00	I.	5	5.395	22 47.22	8.6	1.87	53 24.90	44 17.7
106	9	. .	. .	. .	26.5	. .	. .	. .	53 26.35	33.57	−0.01	IV.	3	3.255	11 41.71	8.5	1.27	53 59.91	33 11.5
107	8	. .	33.8	46.8	59.9	. .	. .	. .	54 59.91	33.56	0.00	IV.	4	10.525	20 26.12	8.3	1.74	55 33.47	41 56.2
108	8	54.9	8.9	21.5	34.6	. .	. .	. .	20 58 34.69	33.56	−0.01	III.	3	6.7	13 3.13	8.0	1.35	20 59 8.24	18 34 32.5
109	10	49.9	3.9	. .	29.9	. .	. .	. .	21 0 30.02	33.56	+0.01	IV.	8	11.56	39 57.14	7.8	2.83	21 1 3.59	19 1 27.8
110	10	. .	. .	. .	. .	. .	57.7	. .	21 1 31.39	+33.56	0.00	VI.	7	11.42	−34 51.27	− 7.7	−2.54	21 2 4.95	−18 56 21.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(185) 83. Double.
(158) 98. Minutes assumed as 39 instead of 40; beautiful double star.
(185) 107. Double.

ZONE 185. AUGUST 16. P. BELT, −18° 46′. D_0 = −18° 21′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
111	12	. .	. .	. .	. .	55.5	. .	22.2	21 3 42.48	+33.55	0.00	VII.	7	11.54	−39 55.86	− 7.5	−2.83	21 4 16.03	−19 1 26.2
112	10	. .	. .	. .	. .	. .	58.5	11.9	5 32.11	33.55	−0.01	VII.	2	9.39	9 50.69	7.3	1.17	6 5.65	18 31 19.2
113	10	5.5	. .	. .	. .	. .	. .	. .	8 45.36	33.55	0.00	I.	5	12.31	26 14.71	7.0	2.06	9 18.91	47 43.8
114	4.3	. .	. .	. .	58.9	. .	24.6	38.5	8 58.58	33.55	−0.01	VII.	3	10.16	15 8.45	6.9	1.46	9 32.12	36 36.8
115	11	. .	. .	. .	17.4	. .	. .	. .	11 17.25	33.55	0.01	IV.	1	7.535	3 58.75	6.7	0.89	11 50.79	25 26.3
116	10	. .	. .	25.5	38.5	51.6	4.6	. .	12 38.35	33.54	−0.01	VI.	2	12.55	11 4.71	6.6	1.24	13 11.88	32 32.6
117	11	. .	. .	14.2	. .	. .	. .	. .	14 27.34	33.54	0.00	III.	6	10.1	29 0.42	6.4	2.23	15 0.88	50 29.1
118	9	39.9	53.7	6.6	. .	. .	. .	. .	17 19.87	33.54	0.00	III.	6	4.22	26 9.48	6.1	2.07	17 53.41	47 37.7
119	10	. .	. .	. .	2.9	. .	. .	. .	18 2.75	33.54	0.00	IV.	6	3.42	25 49.34	6.1	2.04	18 36.29	18 47 17.5
120	10	. .	27.4	39.8	. .	. .	. .	. .	20 53.50	33.54	+0.01	III.	8	9.28	38 42.47	5.8	2.76	21 27.05	19 0 11.0
121	11	. .	. .	53.6	. .	. .	. .	. .	22 6.75	33.54	0.00	III.	6	11.18	29 39.24	5.7	2.26	22 40.29	18 51 7.2
122	10	18.4	31.6	. .	. .	. .	. .	. .	24 58.02	33.54	−0.01	II.	2	10.31	10 17.07	5.4	1.19	25 31.55	31 43.7
123	12	. .	. .	. .	. .	. .	. .	18.5	25 38.54	33.54	−0.01	VII.	2	4.305	7 15.13	5.3	1.04	26 12.07	28 41.5
124	10	. .	. .	20.8	33.8	47.5	. .	. .	27 33.96	33.53	0.00	V.	6	8.54	28 26.64	5.2	2.17	28 7.49	18 49 54.0
125	11	. .	. .	. .	. .	. .	31.6	44.5	29 5.14	33.53	+0.01	VII.	8	10.8	39 2.41	5.0	2.79	29 38.68	19 0 30.2
126	10	. .	. .	3.6	. .	29.5	. .	. .	31 16.66	33.53	0.01	V.	9	11.57	44 56.61	4.8	3.10	31 50.20	19 6 24.5
127	11	19.9	34.0	. .	. .	. .	. .	. .	33 0.20	33.53	+0.01	II.	8	7.22	37 38.86	4.7	2.69	34 33.74	18 59 6.3
128	10	. .	. .	. .	7.4	. .	33.6	. .	35 7.28	33.53	0.00	VI.	7	3.6	30 31.08	4.5	2.32	35 40.81	51 57.9
129	9	. .	. .	45.6	. .	. .	. .	. .	36 58.59	33.53	0.00	III.	4	7.14	18 35.91	4.3	1.63	37 32.12	40 1.8
130	8.9	. .	. .	. .	. .	48.9	. .	15.6	37 35.68	33.53	−0.01	VII.	3	9.45	15 2.64	4.2	1.41	38 9.20	18 36 28.3
131	10	47.4	. .	. .	. .	. .	. .	. .	41 27.41	33.52	0.00	I.	9	9.4	43 29.14	3.9	3.03	41 0.93	19 4 56.1
132	11	. .	. .	. .	21.9	. .	. .	. .	41 21.75	33.52	0.00	IV.	7	5.45	31 51.36	3.9	2.39	41 55.27	18 53 17.7
133	11	. .	. .	. .	. .	. .	. .	27.5	41 47.73	33.52	0.00	VII.	5	2.21	21 7.12	3.9	1.77	42 21.25	18 42 32.8
134	11	. .	. .	. .	. .	8.9	. .	. .	21 43 55.76	+33.52	+0.01	V.	9	7.21	−42 37.43	− 3.7	−2.98	21 44 29.29	−19 4 4.1

ZONE 186. AUGUST 18. B. BELT, −23° 46′. D_0 = −23° 19′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	10.2	24.2	. .	. .	. .	19 14 23.83	+37.22	−0.01	IV.	3	11.43	−15 52.58	−20.1	−1.34	19 15 1.04	−23 35 54.0
2	9	. .	. .	. .	. .	41.8	55.	. .	15 27.96	37.22	0.00	VI.	4	7.22	18 39.82	20.0	1.54	16 5.18	38 41.4
3	9	57.5	12.	25.	. .	. .	. .	. .	17 38.79	37.22	0.00	III.	4	6.53	18 25.31	19.8	1.52	18 16.01	38 26.6
4	10	. .	. .	. .	. .	. .	. .	26.	18 45.10	37.22	+0.01	VII.	9	0.20	39 4.84	19.7	3.03	19 22.33	59 7.6
5	10	. .	. .	7.	20.5	. .	. .	. .	21 20.30	37.22	−0.01	VII.	1	11.42	5 53.64	19.5	0.64	21 57.51	25 53.8
6	7	. .	. .	. .	. .	16.5	30.	. .	22 2.80	37.22	−0.01	VI.	1	9.1	4 32.64	19.4	0.53	22 40.01	24 32.6
7	8	57.2	11.5	. .	. .	. .	. .	. .	24 38.58	37.22	0.00	II.	4	7.16	18 36.80	19.2	1.54	25 15.80	38 37.5
8	8	19.	33.	. .	. .	. .	. .	. .	25 0.22	37.22	0.00	II.	4	5.52	17 54.44	19.2	1.48	26 37.44	37 55.1
9	10	. .	. .	. .	9.	23.	. .	. .	27 9.05	37.22	−0.01	V.	2	10.53	10 28.23	19.0	0.96	27 46.26	30 28.2
10	10	. .	. .	. .	. .	. .	46.3	0.	28 18.95	37.22	−0.01	VII.	3	5.45	12 51.72	18.9	1.12	28 56.16	32 51.7
11	6	. .	. .	57.	11.	. .	. .	. .	30 10.70	37.22	0.00	IV.	6	3.45	25 50.85	18.7	2.06	30 47.92	45 51.6
12	5.6	. .	. .	. .	. .	. .	55.3	. .	30 28.10	37.22	0.00	VII.	6	4.14	26 5.14	18.7	2.08	31 5.32	46 5.9
13	8	. .	. .	. .	. .	. .	29.5	43.5	32 2.42	37.22	+0.01	VII.	8	9.27	38 41.66	18.6	3.00	32 39.65	58 43.3
14	10	. .	. .	. .	44.2	58.	. .	. .	33 44.21	37.22	+0.01	VI.	8	7.51	37 53.44	18.4	2.94	34 21.44	57 54.8
15	7.8	. .	. .	. .	3.	17.	. .	. .	35 3.06	37.21	−0.01	V.	4	4.3	16 59.59	18.3	1.42	35 40.26	36 59.3
16	9.10	. .	10.	23.	. .	. .	. .	. .	36 37.08	37.21	+0.01	III.	8	2.1	34 57.07	18.2	2.74	37 14.30	54 58.0
17	9	. .	. .	20.	33.	47.	. .	. .	37 33.23	37.21	0.00	V.	6	1.11	24 33.14	18.1	1.97	38 10.44	44 33.2
18	9	. .	. .	. .	. .	. .	. .	28.5	38 47.19	37.21	−0.01	VII.	2	6.53	8 26.91	18.0	0.80	39 24.39	23 28 25.7
19	9	. .	. .	. .	. .	. .	45.	59.	40 17.95	37.21	+0.01	VII.	9	12.34	45 14.96	17.9	3.47	40 55.17	24 5 16.3
20	9	. .	. .	. .	. .	. .	. .	10.5	41 29.39	37.21	0.00	VII.	5	8.38	24 17.16	17.8	1.95	42 6.60	23 44 16.9
21	8	. .	. .	. .	. .	29.	42.	. .	19 43 15.06	+37.21	−0.01	VI.	3	4.36	−12 17.13	−17.7	−1.08	19 43 52.26	−23 32 15.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 18,	21	+ 34.21	l 0.181	− 0.27	+ 0.86	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(185) 111. Hor. thread assumed as 8 instead of 7.
(185) 130. Micrometer reading assumed as $10^r.45$ instead of $9^r.45$.
(185) 131. Minutes of transit assumed as 40 instead of 41.
(186) 8. Minutes assumed as 26 instead of 25.

ZONE 186. AUGUST 18. B. BELT, −23° 46′. D₀=−23° 19′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	9	. .	. .	. .	. .	. .	. .	36.2	19 44 55.13	+37.21	0.00	VII.	6	4.40	−26 18.25	− 17.5	−2.10	19 44 32.34	−23 46 17.9
23	9	. .	. .	. .	56.4	10.	. .	. .	45 56.33	37.21	+0.01	V.	10	3.56	45 54.96	17.5	3.54	46 33.55	24 5 56.0
24	7	. .	. .	. .	. .	. .	32.5	46.3	47 5.38	37.21	−0.01	V.	2	5.11	7 35.77	17.4	0.75	47 42.58	23 27 33.9
25	7	. .	. .	. .	. .	0.1	14.2	. .	48 46.71	37.21	0.00	VI.	5	7.19	23 37.51	17.2	1.90	49 23.92	43 36.6
26	7	. .	. .	. .	. .	. .	. .	7.2	49 26.09	37.21	0.00	VII.	5	8.35	24 15.65	17.2	1.95	50 3.30	23 44 14.8
27	9	. .	. .	24.3	38.2	. .	. .	. .	53 38.07	37.21	+0.01	IV.	9	9.48	43 51.59	16.8	3.39	54 15.29	24 3 51.8
28	8	. .	. .	. .	. .	. .	56.	10.2	53 28.93	37.21	0.00	VII.	4	7.10	18 33.58	16.8	1.54	54 6.14	23 38 31.9
29	9	. .	. .	. .	5.	18.8	. .	. .	58 5.01	37.21	+0.01	VI.	7	11.43	34 51.73	16.5	2.73	58 42.23	23 54 51.0
30	7	. .	. .	. .	. .	. .	29.	43.6	19 59 2.23	37.21	+0.01	VII.	8	14.6	41 2.34	16.4	3.18	19 59 39.45	24 1 1.9
31	9	. .	20.6	33.5	47.	. .	. .	. .	20 2 47.31	37.21	0.00	IV.	6	9.30	28 44.82	16.1	2.26	20 3 24.52	23 48 43.2
32	7	. .	. .	. .	. .	. .	34.8	49.	3 7.80	37.20	0.00	VII.	7	8.16	33 7.17	16.1	2.61	3 45.00	53 5.9
33	9	. .	11.6	25.	. .	. .	. .	. .	6 38.82	37.20	0.00	III.	7	4.42	31 19.56	15.8	2.47	7 16.02	51 17.8
34	7	. .	. .	. .	. .	. .	. .	20.	6 39.08	37.20	+0.01	VII.	8	7.51	37 53.25	15.8	2.95	7 16.29	57 52.0
35	9	. .	. .	14.	28.2	. .	. .	. .	9 27.70	37.20	−0.01	IV.	3	5.2	12 30.38	15.6	1.08	10 4.89	32 27.1
36	8	. .	32.	45.1	58.5	. .	. .	. .	11 58.87	37.20	+0.01	IV.	8	5.33	36 44.01	15.4	2.88	12 36.08	56 42.3
37	8	8.	22.3	35.3	. .	. .	. .	. .	14 49.37	37.20	0.01	III.	8	6.45	37 20.28	15.2	2.92	15 26.58	57 18.4
38	8	. .	. .	37.5	51.	5.	. .	. .	15 51.14	37.20	+0.01	V.	8	7.44	37 50.03	15.1	2.96	16 28.35	57 48.1
39	9.10	. .	. .	8.5	22.	36.	. .	. .	17 22.10	37.20	0.00	V.	6	11.26	29 43.27	15.0	2.35	17 59.30	49 40.6
40	8	. .	. .	40.3	54.5	. .	. .	. .	18 40.45	37.20	−0.01	IV.	2	10.46	10 24.75	14.8	0.93	19 17.64	30 20.5
41	8.9	. .	. .	. .	28.3	42.	. .	. .	20 28.23	37.20	0.00	V.	6	4.2	25 59.39	14.7	2.07	21 5.43	23 45 56.2
42	8	. .	. .	. .	38.	51.5	. .	. .	21 37.88	37.20	+0.01	V.	10	7.39	47 47.41	14.6	3.70	22 15.09	24 7 45.7
43	9	. .	. .	. .	. .	. .	8.	22.	22 40.83	37.20	0.00	VII.	4	9.32	19 45.19	14.6	1.62	23 18.03	23 39 41.4
44	8	. .	13.	26.3	40.2	. .	. .	. .	24 40.08	37.20	0.00	IV.	5	11.8	25 33.13	14.4	2.04	25 17.28	23 45 29.6
45	8	. .	. .	46.5	0.0	. .	. .	. .	26 0.07	37.20	+0.01	IV.	9	7.45	42 49.57	14.3	3.33	26 37.28	24 2 47.2
46	8	. .	. .	. .	. .	. .	49.	3.	26 21.94	37.20	+0.01	VII.	9	7.45	42 49.23	14.3	3.33	26 59.15	24 2 46.9
47	9	. .	. .	14.5	28.3	. .	. .	. .	30 27.98	37.20	−0.01	IV.	2	7.42	8 51.96	14.0	0.82	31 5.17	23 28 46.8
48	8	. .	. .	13.3	26.5	40.5	. .	. .	32 26.63	37.20	0.00	V.	4	10.10	20 4.65	13.9	1.64	33 3.83	23 40 0.2
49	8	. .	47.6	59.5	13.	. .	. .	. .	34 13.73	37.20	+0.01	IV.	9	2.52	40 21.83	13.7	3.15	34 50.94	24 0 18.7
50	9	. .	. .	. .	. .	27.5	41.	. .	35 13.81	37.20	0.00	VI.	5	7.27	23 41.54	13.7	1.90	35 51.01	23 43 37.1
51	9	. .	. .	39.	52.5	6.3	. .	. .	36 52.62	37.20	+0.01	V.	9	10.14	44 4.67	13.5	3.42	37 29.83	24 4 1.6
52	9	. .	. .	. .	. .	38.	51.3	. .	38 24.22	37.20	+0.01	VI.	9	3.33	41 12.60	13.4	3.17	39 1.43	24 1 9.2
53	9	. .	. .	. .	. .	55.	8.	. .	42 41.05	37.20	. .	VI.							
54	9	. .	16.	29.3	42.8	. .	. .	. .	45 42.79	37.20	−0.01	IV.	1	10.22	5 13.64	12.9	0.54	46 19.98	23 25 7.1
55	9.10	. .	. .	. .	. .	. .	. .	13.6	46 46.38	37.20	0.00	VII.	7	4.18	31 7.15	12.8	2.45	47 23.58	51 2.4
56	9	. .	. .	. .	. .	58.3	11.5	25.5	48 44.38	37.20	−0.01	VII.	3	4.8	12 2.81	12.7	1.03	49 21.57	31 56.5
57	9	. .	. .	45.7	59.2	13.	. .	. .	50 59.23	37.21	0.00	V.	6	11.10	29 35.20	12.5	2.34	51 36.44	49 30.0
58	7	. .	. .	. .	4.4	18.3	32.	. .	52 4.55	37.21	0.00	VI.	4	9.34	19 46.39	12.4	1.61	52 41.76	39 40.4
59	9	. .	. .	. .	19.3	33.5	47.	. .	56 19.59	37.21	−0.01	VI.	2	6.36	8 18.54	12.1	0.77	56 56.79	28 11.4
60	6	. .	. .	. .	. .	. .	58.2	12.	57 30.98	37.21	0.00	VII.	6	9.50	28 54.56	12.1	2.29	20 58 8.19	48 49.0
61	8	. .	. .	. .	. .	. .	. .	12.	20 59 30.80	37.21	0.00	VII.	4	4.11	12 4.31	11.9	1.05	21 0 8.01	31 57.3
62	8	. .	. .	. .	. .	34.5	48.	. .	21 1 20.82	37.21	0.00	VI.	7	11.43	34 51.73	11.8	2.74	1 58.03	54 46.3
63	7	. .	. .	. .	8.5	22.5	35.5	. .	4 8.48	37.21	−0.01	VI.	1	5.23	2 42.71	11.6	0.35	4 45.68	22 34.7
64	8	. .	. .	. .	. .	. .	42.	56.	6 14.78	37.21	−0.01	VII.	2	9.33	9 47.59	11.5	0.88	5 51.98	29 40.0
65	9	. .	. .	. .	. .	. .	12.5	26.3	6 45.28	37.21	0.00	VII.	6	7.32	27 44.98	11.4	2.20	7 22.49	23 47 38.6
66	9.10	. .	. .	49.	2.5	. .	. .	. .	12 2.56	37.21	+0.01	IV.	9	6.7	42 0.16	11.0	3.28	12 39.78	24 1 54.4
67	9.10	. .	. .	. .	40.	53.8	. .	. .	13 40.03	37.22	+0.01	V.	10	5.5	46 29.75	11.0	3.62	14 17.26	24 6 24.4
68	7	. .	. .	54.	8.	21.3	. .	. .	15 7.73	37.22	0.00	V.	8	3.58	35 56.06	10.9	2.83	15 44.95	23 55 49.8
69	8	. .	. .	. .	. .	. .	30.	44.	16 2.91	37.22	0.00	VII.	7	11.18	34 38.93	10.8	2.73	16 40.13	54 32.5
70	9	. .	. .	39.	53.5	. .	. .	. .	19 52.87	37.22	0.00	IV.	3	9.52	14 56.61	10.6	1.24	20 30.09	34 48.5
71	9	. .	14.	27.	. .	. .	. .	. .	21 20 41.04	−37.22	0.00	III.	7	9.51	−33 55.36	− 10.5	−2.68	21 22 18.26	−23 53 48.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1848.	h. m.	in.	°	°

REMARKS.

(186) 22. Minute assumed as 43 instead of 44.
(186) 40. Transits over T's IV and V assumed as recorded over T's III and IV.
(186) 52. Micrometer reading assumed as 4ʳ.33 instead of 3ʳ.33.
(186) 53. Omitted micrometer reading.
(186) 61. Hor. thread assumed as 3 instead of 4.
(186) 64. Minute assumed as 5 instead of 6.
(186) 71. Minute assumed as 21 instead of 22.

ZONE 186. AUGUST 18. B. BELT, 23° 46′. D₀=−23° 19′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	9.10	. .	. .	. .	. .	. .	19.	33.	21 20 51.89	+37.22	0.00	VII.	7	6.2	−31 59.60	−10.5	−2.53	21 22 29.11	−23 51 52.6
73	8	. .	36.2	49.	2.5	. .	. .	. .	23 2.79	37.22	0.00	IV.	5	6.30	23 12.96	10.4	1.87	23 40.01	43 5.2
74	8	. .	. .	. .	. .	25.3	39.	. .	26 11.71	37.22	0.00	VI.	6	6.21	27 9.36	10.2	2.16	26 48.93	47 1.7
75	8	. .	21.	34.2	47.8	. .	. .	. .	28 47.90	37.23	0.00	IV.	5	8.48	24 22.54	10.0	1.96	29 25.13	44 14.5
76	8	. .	20.5	33.3	46.5	. .	. .	. .	30 47.06	37.23	0.00	IV.	7	7.18	32 38.25	9.9	2.58	31 24.29	52 30.7
77	9.10	. .	. .	. .	. .	58.	. .	. .	31 44.	37.23	. .	.	.	. .	. . .	9.8			
78	4.5	. .	. .	. .	. .	. .	. .	31.	32 50.06	37.23	0.00	VII.	8	4.51	36 22.49	9.8	2.86	33 27.29	56 15.2
79	8	. .	34.	47.	0.5	14.	. .	. .	21 40 0.53	+37.24	−0.01	V.	2	9.53	−10 58.48	− 9.4	−0.88	21 40 37.76	−23 30 48.8

ZONE 187. AUGUST 24. B. BELT, −21° 16′. D₀=−20° 49′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	12.5	26.	. .	22 37 59.20	+43.99	+0.01	VI.	10	3.1	−45 27.12	− 9.3	−3.39	22 38 43.20	−21 34 49.8
2	9	. .	. .	53.5	7.	20.3	. .	. .	41 6.77	43.98	0.00	V.	3	10.26	15 13.73	9.4	1.34	41 50.75	21 4 34.5
3	7	. .	. .	29.5	42.3	56.2	. .	23.	46 42.44	43.98	−0.01	V.	2	3.44	6 51.92	9.7	0.80	47 26.41	20 56 12.4
4	8	. .	. .	36.7	50.	3.4	. .	. .	48 49.87	43.97	0.00	IV.	3	10.14	15 7.71	9.8	1.33	49 33.84	21 4 28.8
5	8	. .	. .	45.5	. .	12.	. .	. .	22 53 58.90	43.97	+0.01	V.	10	14.44	50 51.46	10.1	3.78	22 54 42.88	40 15.3
6	10	. .	. .	. .	58.	11.5	. .	. .	23 3 57.98	43.96	0.00	V.	7	8.41	33 20.08	10.7	2.56	23 4 41.94	21 22 43.3
7	10	. .	4.	17.3	30.5	. .	. .	. .	6 30.48	43.96	0.00	IV.	2	7.57	8 39.52	10.8	0.92	7 14.44	20 58 21.2
8	9	. .	. .	. .	. .	31.	44.3	58.	7 17.56	43.96	0.00	VII.	4	4.14	17 4.89	10.8	1.46	8 1.52	21 6 27.2
9	10	. .	. .	51.2	4.5	. .	. .	. .	9 4.37	43.96	0.00	IV.	4	6.11	18 4.17	10.9	1.53	9 48.33	7 26.6
10	9	. .	27.	39.5	53.	. .	. .	. .	10 53.28	43.96	0.00	IV.	9	5.50	41 51.58	11.1	3.15	11 37.24	21 31 15.8
11	7	. .	. .	. .	. .	1.	. .	. .	11 47.44	43.95	0.00	V.	1	2.51	1 26.19	11.1	0.41	12 31.39	20 50 47.7
12	8	. .	. .	. .	. .	8.5	21.5	35.	12 54.80	43.95	0.00	VII.	4	5.10	17 33.12	11.2	1.50	13 38.75	21 6 55.8
13	4.5	. .	. .	. .	. .	. .	47.	01.	14 20.37	43.95	0.00	VII.	1	11.32	5 48.65	11.3	0.70	15 4.32	20 55 10.7
14	7	. .	. .	. .	. .	. .	25.5	39.	15 58.70	43.95	0.00	VII.	5	6.48	23 21.74	11.4	1.89	15 42.65	21 12 45.0
15	5.6	. .	. .	. .	. .	39.	52.	5.2	16 25.31	43.95	0.00	VII.	8	8.47	38 21.55	11.4	2.92	18 9.26	27 45.9
16	8	. .	. .	38.3	52.	5.5	. .	. .	19 51.86	43.95	0.00	V.	6	8.4	28 1.43	11.6	2.20	20 35.81	17 25.2
17	8	. .	. .	4.	17.5	. .	. .	. .	21 17.38	43.95	0.00	IV.	7	11.33	34 46.84	11.7	2.68	22 1.33	21 24 11.2
18	8	. .	. .	. .	30.	44.	57.	. .	24 30.22	43.95	0.00	V.	2	11.1	5 33.27	11.9	0.68	25 14.17	20 54 56.0
19	9	. .	. .	. .	. .	16.2	29.5	. .	23 26 2.76	+43.95	0.00	VI.	2	11.5	−10 34.19	−12.1	−1.02	23 26 46.71	−20 59 47.3

ZONE 188. AUGUST 29. B. BELT, −21° 16′. D₀=−20° 48′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	10.	23.3	36.5	. .	22 35 9.84	+44.55	+0.01	VI.	9	7.28	−42 40.85	−9.92	−3.17	22 35 54.40	−21 31 33.9
2	8	. .	20.	33.	46.5	. .	. .	. .	37 46.42	44.54	0.00	IV.	3	8.19	14 9.72	9.76	1.31	38 30.96	3 0.8
3	9	. .	. .	10.5	23.5	38.	. .	. .	40 23.83	44.54	0.00	V.	3	8.32	14 16.25	9.65	1.31	41 8.37	3 7.2
4	7.8	. .	. .	. .	. .	. .	. .	. .	41 5.79	44.54	0.00	VII.	3	11.20	15 40.69	9.61	1.41	41 50.33	21 4 31.7
5	9	. .	21.5	34.5	48.	1.3	. .	46.3	42 47.72	44.53	−0.01	VI.	1	5.49	2 55.84	9.53	0.56	43 32.24	20 51 46.9
6	8	. .	. .	. .	. .	27.	40.	. .	45 13.43	44.53	0.00	VI.	5	3.7	21 30.45	9.42	1.78	45 57.96	21 10 21.7
7	6.7	. .	. .	. .	. .	56.	9.	22.	46 42.07	44.52	−0.01	VII.	2	4.52	7 25.95	9.33	0.86	47 26.58	20 56 16.1
8	7	. .	. .	. .	. .	3.	16.	29.5	48 49.31	44.52	0.00	VII.	4	11.19	20 39.19	9.24	1.73	49 33.83	21 9 30.2
9	9	. .	. .	. .	. .	48.	. .	15.	50 34.72	44.51	0.00	VII.	8	4.12	36 2.88	9.16	2.73	51 19.23	24 54.8
10	9	. .	40.	53.3	6.5	. .	. .	. .	53 6.50	44.51	0.00	IV.	3	4.19	12 8.70	9.06	1.17	53 51.01	0 58.9
11	9	. .	. .	. .	. .	. .	7.2	21.	53 40.61	44.51	0.00	VII.	7	3.45	30 50.56	9.04	2.37	54 25.11	19 42.0
12	8	. .	. .	. .	. .	. .	. .	19.5	54 39.30	44.51	0.00	VII.	8	3.30	35 41.70	9.00	2.71	55 23.81	24 33.4
13	9	. .	. .	24.	37.5	51.	. .	. .	56 37.48	44.50	+0.01	V.	8	7.46	37 51.04	8.90	2.85	57 21.99	26 42.8
14	9	. .	. .	. .	19.	32.6	. .	. .	22 58 19.01	+44.50	0.00	V.	6	7.36	−27 47.31	−8.83	−2.18	22 59 3.51	−21 16 38.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 24,	21	+ 41.40	l 0.020			
29,	21	+ 41.90	g 0.021	− 0.31	+ 0.84	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(186) 72. Minutes assumed as 21 instead of 22.
(186) 77. Star disappeared before micrometer reading was obtained.
(186) 79. Micrometer reading assumed as 11ʳ.53 instead of 9ʳ.53.
(187) 5. Micrometer reading assumed as 13ʳ.44 instead of 14ʳ.44.
(187) 15. Minutes assumed as 17, not 6.
(187) 18. Micrometer thread assumed as 1 instead of 2.
(188) 4. Transit over VII assumed to have been recorded against following star.

ZONE 188. AUGUST 29. B. BELT, −21° 16′. $D_\circ$=−20° 48′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	9	..	..	..	..	32.7	46.	59.	22 59 19.12	+44.50	0.00	VII.	7	12.36	−35 18.32	−8.79	−2.68	23 0 3.62	−21 24 9.8
16	9	..	31.5	44.	..	..	..	..	23 3 57.92	44.49	0.00	III.	7	9.52	33 55.88	8.60	2.59	4 42.41	22 47.1
17	9	..	..	23.5	37.	..	..	..	6 36.86	44.48	0.00	IV.	6	13.13	30 37.25	8.50	2.36	7 21.34	19 28.1
18	8	..	1.7	14.	27.	..	..	..	8 27.68	44.48	0.00	IV.	8	14.23	41 11.24	8.40	3.07	9 12.16	30 2.7
19	9	12.	26.5	39.	52.4	..	..	..	10 52.72	44.47	0.00	IV.	9	6.56	42 24.87	8.32	3.15	11 37.19	31 16.3
20	9	..	..	41.	54.2	8.	..	..	12 54.25	44.47	0.00	V.	4	6.8	18 2.63	8.24	1.55	13 38.72	21 6 52.4
21	4.5	..	..	7.	20.3	34.	..	..	14 20.22	44.47	0.00	V.	1	12.27	6 16.63	8.20	0.79	15 4.69	20 55 5.6
22	8	..	..	45.2	58.	..	..	..	15 58.16	44.46	0.00	IV.	5	7.53	23 54.80	8.13	1.93	16 42.62	21 12 44.9
23	8	..	..	..	..	..	..	53.3	16 12.82	44.46	0.00	VII.	4	2.56	16 25.56	8.13	1.45	16 57.28	5 15.1?
24	5	..	..	..	..	..	..	5.	17 24.84	44.46	0.00	VII.	8	9.51	38 53.81	8.06	2.92	18 9.30	27 44.8
25	8	..	..	..	51.3	5.	..	..	19 51.37	44.46	0.00	V.	6	8.2	28 30.66	7.99	2.22	20 35.83	17 20.9
26	8	..	..	..	10.	23.2	..	..	21 9.79	44.45	0.00	V.	4	7.42	18 50.03	7.96	1.60	21 54.24	21 7 39.6
27	8	50.	..	16.3	30.	..	..	..	24 29.80	44.45	−0.01	III.	1	1.53	5 55.94	7.86	0.50	25 14.24	20 54 44.3
28	9	..	..	49.	2.5	..	..	..	26 2.23	44.45	0.00	IV.	3	2.16	11 6.68	7.79	1.09	26 46.68	59 55.6
29	9	..	..	5.	18.5	32.	..	..	27 18.27	44.44	0.00	V.	1	7.34	3 48.90	7.76	0.61	28 2.71	20 52 37.3
30	9	..	..	51.3	4.5	..	..	..	29 4.51	44.44	0.00	IV.	7	3.26	31 11.53	7.72	2.39	29 48.95	21 20 1.6
31	9	..	..	..	54.3	8.	..	..	30 54.38	44.44	0.00	V.	7	11.7	34 33.70	7.67	2.63	31 38.82	23 24.0
32	9	32.	46.	..	..	..	..	..	33 12.56	44.44	0.00	II.	2	12.28	11 16.02	7.60	1.11	33 57.00	0 4.7
33	8	..	29.3	43.1	55.5	..	..	..	40 55.99	44.43	0.00	IV.	6	7.15	27 36.74	7.41	2.17	41 40.42	16 26.3
34	7	..	..	..	..	17.1	30.	44.	42 3.48	44.42	0.00	VII.	3	10.14	15 7.42	7.39	1.36	42 47.90	3 56.2
35	8	29.	..	56.	9.	..	..	..	45 9.26	44.42	0.00	IV.	7	6.17	32 7.50	7.33	2.46	45 53.68	20 57.3
36	8	..	..	..	..	..	..	45.6	48 5.07	44.42	0.00	VII.	3	4.7	12 2.36	7.24	1.14	48 49.49	0 50.7
37	8	..	..	..	54.	7.5	..	..	49 53.95	44.42	0.00	V.	4	10.32	20 15.76	7.21	1.70	50 38.37	9 4.7
38	8	..	..	..	..	..	6.	19.	50 39.04	44.41	0.00	VII.	8	9.32	38 44.24	7.20	2.92	51 23.45	27 34.4
39	9	..	..	..	29.	42.	..	..	52 28.72	44.41	0.00	V.	6	5.15	26 36.20	7.17	2.10	53 13.13	21 15 25.5
40	7	..	..	..	30.	43.8	57.	..	23 54 30.15	+44.41	0.00	VI.	1	8.27	− 4 15.51	−7.14	−0.63	23 55 14.56	−20 53 3.3

ZONE 189. AUGUST 31. K. BELT, −21° 53′. $D_\circ$=−21° 26′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	..	..	..	..	..	..	21.5	22 30 40.95	+44.40	0.00	VII.	5	7.30	−23 42.89	− 3.4	−1.91	22 31 25.35	−21 50 8.2
2	9	..	..	53.	6.3	20.	..	..	33 6.23	44.40	0.00	V.	2	5.1	7 30.74	3.3	0.84	33 50.63	33 54.9
3	9	..	..	..	..	..	12.	25.4	33 44.99	44.40	0.00	VII.	4	4.35	17 15.45	3.2	1.48	34 29.39	43 40.1
4	9	..	..	29.5	43.	..	..	..	35 42.79	44.39	0.00	IV.	4	4.57	17 26.86	3.1	1.48	36 27.18	43 51.4
5	9	..	..	..	26.3	40.	..	..	36 26.30	44.39	0.00	V.	3	6.3	13 1.11	3.1	1.21	37 10.69	39 25.4
6	8	..	32.4	45.5	59.	..	..	..	37 58.89	44.38	0.00	V.	2	6.53	8 27.22	3.0	0.90	38 43.27	34 51.1
7	8	..	..	..	..	..	2.	15.5	38 35.07	44.38	0.00	VII.	5	7.59	23 57.51	3.0	1.93	39 19.45	50 22.4
8	9	..	..	11.5	25.	38.	..	..	41 24.70	44.38	0.00	V.	4	9.33	19 46.00	2.9	1.65	42 9.08	46 10.6
9	9	..	22.	35.	48.2	2.	..	..	42 48.41	44.37	0.00	V.	4	5.21	17 38.92	2.8	1.50	43 32.78	44 3.2
10	9	..	..	..	..	52.	5.	..	43 38.34	44.37	0.00	VI.	7	6.39	32 17.45	2.8	2.50	44 22.71	21 58 42.8
11	9	..	..	..	15.	28.5	..	..	45 14.97	44.37	0.00	V.	9	4.42	41 17.27	2.7	3.11	45 59.34	22 7 43.1
12	9	..	..	..	..	..	58.	11.5	46 31.11	44.36	0.00	VII.	7	7.32	32 45.00	2.7	2.53	47 15.47	21 59 10.2
13	9	..	..	8.	21.7	..	..	..	48 21.50	44.36	0.00	IV.	7	6.15	32 6.49	2.6	2.48	49 5.86	58 31.6
14	9	..	..	..	32.5	46.	..	..	49 32.45	44.36	0.00	V.	7	8.58	33 28.65	2.6	2.58	50 16.81	59 53.8
15	8	..	..	..	..	..	..	47.	50 6.34	44.36	0.00	VII.	3	10.12	15 6.38	2.5	1.33	50 50.70	41 30.2
16	9	..	..	..	..	0.0	13.	..	51 46.33	44.35	0.00	VI.	2	11.19	10 41.24	2.5	1.05	52 30.68	37 4.8
17	7	18.	32.2	45.	..	..	..	..	22 53 58.61	44.35	0.00	III.	3	7.41	13 50.52	2.4	1.24	22 54 42.96	40 14.2
18	8	..	..	..	..	..	..	29.	23 15 48.47	44.30	0.00	VII.	5	10.15	25 6.09	1.6	2.01	23 16 32.77	21 51 29.7
19	8	..	..	39.	52.5	6.	..	..	23 17 52.46	+44.30	0.00	V.	7	10.57	−34 28.66	− 1.6	−2.65	23 18 36.76	−22 0 52.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Aug. 31,	21	+ 41.78	0.000	− 0.36	+ 0.86	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(188) 25. Micrometer reading assumed as $9^r.2$ instead of $8^r.2$.
(188) 27. Micrometer thread assumed as 2 instead of 1.
(188) 30. Micrometer reading assumed as $4^r.26$ instead of $3^r.26$.
(188) 33. Transit over T. II assumed as $29^s.3$.

ZONE 189. AUGUST 31. K. BELT, —21° 53′. D₀=—21° 26′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	7	24.2	39.	51.5	. .	. .	. .	. .	23 23 5.43	+44.30	0.00	III.	9	12.51	—45 23.83	— 1.4	—3.39	23 23 49.73	—22 11 48.6
21	7	. .	. .	. .	. .	. .	. .	52.5	23 12.16	44.30	0.00	VII.	8	8.15	38 5.38	1.4	2.90	23 56.46	22 4 29.7
22	6	. .	. .	. .	. .	. .	7.3	21.	24 40.44	44.29	0.00	VII.	4	6.30	18 13.44	1.4	1.54	25 24.73	21 44 36.4
23	8	27.2	41.	54.2	7.3	. .	. .	. .	30 7.55	44.28	0.00	IV.	3	10.52	15 26.87	1.2	1.35	30 51.83	41 49.5
24	9	5.3	19.5	32.2	45.4	. .	. .	. .	34 45.84	44.28	0.00	IV.	6	9.50	28 54.90	1.1	2.27	35 30.12	55 18.3
25	10	. .	. .	23.2	37.	50.5	. .	. .	40 36.79	44.27	0.00	V.	5	9.54	24 55.79	1.0	1.99	41 21.06	51 18.8
26	8	. .	. .	. .	. .	59.	12.	. .	41 45.33	44.27	0.00	VI.	4	3.4	16 29.74	1.0	1.41	42 29.60	42 52.2
27	8	. .	. .	. .	. .	16.5	29.5	. .	43 2.83	44.27	0.00	VI.	2	11.3	10 33.17	1.0	1.03	43 47.10	21 36 55.2
28	7	. .	15.7	. .	41.2	. .	. .	. .	46 40.95	44.26	0.00	IV.	10	4.48	46 21.22	0.9	3.48	47 25.21	22 12 45.6
29	7	. .	16.2	29.4	42.5	. .	. .	. .	48 42.67	44.26	0.00	IV.	3	7.25	13 42.48	0.9	1.23	49 26.93	21 40 4.6
30	8	. .	. .	. .	39.	53.	. .	. .	50 39.12	44.26	0.00	V.	1	2.31	1 16.11	0.9	0.39	51 23.38	27 37.4
31	9	. .	. .	30.	43.	57.	. .	. .	43.12	. .	0.00	V.	2	2.16	6 7.55	. .	0.72		
32	9	. .	. .	. .	43.5	59.	. .	. .	54 43.41	44.25	0.00	V.	4	1.50	15 52.53	0.8	1.37	54 27.66	21 42 14.7
33	8	. .	. .	42.	55.3	. .	. .	. .	23 56 55.37	44.25	0.00	V.	9	7.18	42 35.92	0.8	3.22	23 57 39.62	22 8 59.9
34	8	. .	. .	46.2	0.0	. .	. .	. .	0 0 59.86	44.25	0.00	IV.	10	8.44	48 20.23	0.7	3.60	0 1 44.11	14 44.5
35	7	. .	. .	. .	. .	. .	2.	15.5	0 15.42	44.25	0.00	VII.	8	4.6	35 59.83	0.7	2.76	1 59.67	2 23.3
36	8	. .	29.	42.	55.	. .	. .	. .	2 55.49	44.25	0.00	IV.	8	9.2	38 29.40	0.7	2.94	3 39.74	22 4 53.0
37	8	. .	. .	. .	55.	9.	. .	. .	4 55.12	44.25	0.00	V.	1	1.52	0 56.44	0.7	0.36	5 39.37	21 27 17.5
38	6	. .	. .	. .	. .	. .	26.4	40.	6 59.58	44.24	0.00	VII.	8	1.54	34 53.26	0.7	2.68	6 43.82	22 1 16.6
39	7	. .	. .	. .	56.	10.	. .	. .	9 55.20	44.24	0.00	V.	7	5.45	31 51.33	0.7	2.48	10 39.44	21 58 14.5
40	7	. .	. .	22.	35.3	49.	. .	. .	18 25.20	44.24	0.00	V.	1	6.44	3 23.69	0.6	0.52	19 9.44	21 29 44.8
41	9	. .	. .	. .	. .	. .	14.	. .	19 47.36	44.24	0.00	VI.	9	4.14	41 3.04	0.6	3.12	20 31.60	22 7 26.8
42	9	. .	. .	42.2	55.3	9.	. .	. .	22 55.52	44.24	0.00	V.	9	10.52	44 23.84	0.6	3.35	23 39.76	22 10 47.8
43	7	. .	. .	39.	52.	6.	. .	. .	27 52.13	44.24	0.00	V.	2	7.29	8 45.37	0.6	0.90	28 36.37	21 35 6.9
44	9	. .	. .	. .	31.4	45.	. .	. .	0 30 31.38	+44.23	0.00	V.	5	9.55	—25 26.55	— 0.6	—2.03	0 31 15.61	—21 51 49.2

ZONE 190. SEPTEMBER 1. B. BELT. —20° 38′. D₀=—20° 10′ 0″.

1	10	. .	. .	. .	. .	5.5	19.	. .	20 3 52.25	+47.78	—0.01	VI.	2	9.2	— 9 32.16	—34.5	—1.10	20 4 40.02	—20 20 7.8
2	10	. .	. .	. .	33.	46.4	. .	. .	5 32.91	47.77	—0.01	V.	3	11.53	15 57.59	34.2	1.46	6 20.68	26 33.3
3	8	. .	. .	. .	. .	58.	11.	. .	6 44.51	47.77	0.00	V.	4	5.46	17 51.54	34.0	1.57	7 32.28	28 27.1
4	9	. .	. .	. .	. .	59.	12.	. .	7 45.50	47.77	—0.01	VI.	3	9.12	14 36.30	33.8	1.38	8 33.26	25 11.5
5	8	. .	37.	. .	. .	. .	. .	. .	10 3.63	47.76	0.01	II.	3	4.10	12 4.02	33.4	1.26	10 51.38	22 38.7
6	9	. .	. .	. .	. .	38.	. .	. .	10 24.55	47.76	—0.01	V.	3	4.1	11 59.59	33.3	1.25	11 12.30	22 34.1
7	8	. .	. .	. .	. .	. .	. .	38.5	10 58.18	47.76	—0.01	VII.	3	10.58	15 29.61	33.2	1.43	11 45.93	26 4.2
8	9	. .	. .	. .	. .	. .	18.	32.	12 51.65	47.76	0.00	VII.	7	5.18	31 37.46	32.8	2.40	13 39.41	42 12.7
9	8	. .	. .	. .	. .	. .	4.5	. .	13 37.94	47.76	—0.01	VI.	3	5.40	12 49.40	32.7	1.27	14 25.69	23 23.4
10	8	. .	. .	. .	. .	42.	54.5	. .	15 28.25	47.75	0.00	VI.	4	8.7	19 2.53	32.3	1.64	16 16.00	29 36.5
11	10	57.	10.5	. .	. .	. .	. .	. .	17 37.15	47.75	—0.01	II.	2	9.41	9 51.82	31.9	1.11	18 24.89	20 24.8
12	9	. .	. .	. .	34.	. .	. .	. .	18 33.85	47.75	+0.01	IV.	8	6.3	36 59.14	31.8	2.73	19 21.61	47 33.7
13	8	. .	. .	. .	. .	. .	. .	31.	18 51.04	47.75	0.01	VII.	9	3.17	40 34.15	31.7	2.94	19 38.80	51 8.8
14	10	. .	. .	. .	52.5	6.	. .	. .	20 52.51	47.74	+0.01	V.	8	4.20	36 7.17	31.3	2.67	21 40.26	46 41.1
15	10	. .	. .	. .	. .	6.5	. .	. .	21 53.03	47.74	—0.01	V.	2	4.56	7 28.23	31.2	0.96	22 40.76	18 0.4
16	9	. .	. .	. .	. .	19.3	. .	. .	23 5.88	47.74	0.00	V.	4	5.27	17 41.95	30.9	1.53	23 53.62	28 14.4
17	11	. .	37.	. .	. .	. .	. .	. .	25 3.76	47.73	0.00	II.	6	7.12	27 35.09	30.6	2.17	25 51.49	38 7.9
18	10	. .	. .	. .	. .	50.	3.	. .	25 36.52	47.73	0.00	VI.	6	10.16	29 7.88	30.5	2.24	26 24.25	39 40.6
19	10	. .	. .	. .	. .	. .	. .	. .	27	47.73	—0.01	IV.	2	10.23	10 13.14	30.3	1.13	27	20 44.6
20	10	. .	. .	3.	16.3	. .	. .	. .	20 28 16.10	+47.73	—0.01	VII.	3	3.10	—11 33.62	—30.0	—1.22	20 29 3.82	—20 22 4.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Sept. 1,	21	+ 44.80	l 0.123	— 0.37	+ 0.92	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(189) 28. Transit over II assumed as $13^s.7$ instead of $15^s.7$.
(189) 32. Transit observations discordant; thread V assumed to have been observed at $57^s.0$ instead of 59^s IV; minutes assumed as 53 instead of 54.
(189) 35. Minutes assumed as 1 instead of 0; and transits over T.'s III and IV assumed as recorded over T.'s VI and VII.
(189) 38. Minutes assumed as 5 instead of 6.
(189) 40. Transits III–V assumed as 12^s, $25^s.3$, and 39^s, instead of 22^s, $35^s.3$, and 49^s.
(189) 44. Micrometer reading assumed as $10^r.55$ instead of $9^r.55$.

ZONE 190. SEPTEMBER 1. B. BELT, −20° 38′. D_0 = −20° 10′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	11	. .	. .	. .	. .	9.	. .	39.	20 29 56.23	+47.72	0.00	V.	6	4.50	−26 23.60	−29.7	−2.09	20 30 43.95	−20 36 55.4
22	11	. .	56.5	9.5	. .	. .	. .	. .	33 22.94	47.72	0.00	III.	5	4.21	22 7.87	29.1	1.81	34 10.66	32 38.8
23	9	. .	25.	37.	. .	. .	. .	. .	35 51.22	47.71	+0.01	III.	10	4.125	46 3.29	28.6	3.28	36 38.94	56 35.2
24	10	. .	47.3	. .	. .	. .	. .	. .	37 14.02	47.71	0.00	II.	5	7.58	23 57.18	28.4	1.93	38 1.73	34 27.5
25	10	. .	. .	. .	. .	. .	. .	8.2	37 28.09	47.71	0.00	VII.	6	12.13	30 6.72	28.3	2.31	38 15.80	40 37.3
26	9	. .	9.8	21.2	34.3	. .	. .	. .	42 34.29	47.70	−0.01	IV.	3	7.15	13 37.44	27.4	1.32	43 21.98	24 6.2
27	10	. .	47.	. .	. .	. .	. .	. .	44 13.60	47.70	0.01	IV.	2	8.55	9 28.77	27.1	1.09	45 1.29	19 57.0
28	9	. .	. .	. .	16.5	30.	. .	. .	46 16.45	47.69	−0.01	V.	3	5.34	12 46.49	26.7	1.28	47 4.13	23 14.5
29	10	. .	. .	. .	12.7	. .	. .	. .	48 12.55	47.69	0.00	IV.	6	3.32	25 44.30	26.4	2.04	49 0.24	36 12.7
30	8	. .	. .	. .	. .	. .	. .	14.	48 33.87	47.69	0.00	VII.	6	8.17	28 7.73	26.3	2.20	49 21.56	38 36.2
31	9	. .	14.	27.	. .	. .	. .	. .	50 40.46	47.68	0.00	III.	5	6.10	23 2.84	26.0	1.89	51 28.14	33 30.7
32	8	. .	. .	19.3	32.7	. .	. .	. .	51 32.50	47.68	0.00	III.	4	9.4	19 31.38	25.8	1.67	52 20.18	29 58.9
33	10	. .	29.	41.3	. .	. .	. .	. .	52 55.35	47.68	+0.01	III.	9	11.30	44 43.00	25.6	3.20	53 43.04	55 11.8
34	8	. .	. .	. .	59.2	13.	. .	. .	53 59.29	47.68	−0.01	V.	2	6.36	8 18.66	25.4	1.00	54 46.96	18 45.1
35	4.5	. .	. .	. .	. .	17.	30.3	44.	55 3.67	47.68	−0.01	VII.	3	12.30	16 16.00	25.2	1.48	55 51.34	26 42.7
36	7	. .	54.5	7.3	. .	. .	. .	. .	57 21.01	47.67	+0.01	III.	8	4.23	36 8.68	24.8	2.67	58 8.69	46 36.2
37	9	. .	. .	. .	. .	. .	55.2	9.	58 28.73	47.67	0.00	VII.	6	7.21	27 39.48	24.6	2.17	20 59 16.40	38 6.3
38	7	. .	. .	. .	54.	8.	. .	. .	20 59 54.27	47.67	+0.01	V.	8	6.54	37 24.83	24.3	2.75	21 0 41.95	47 51.9
39	8	. .	16.2	29.	. .	. .	. .	. .	21 2 42.82	47.66	+0.01	III.	10	4.13	46 3.54	23.9	3.29	3 30.49	56 30.7
40	7	58.	12.	. .	. .	. .	. .	. .	4 38.58	47.66	0.00	II.	7	5.45	31 51.22	23.5	2.42	5 26.24	42 17.1
41	8	. .	11.6	24.5	. .	. .	. .	. .	5 38.10	47.66	0.00	III.	7	3.59	30 57.88	23.4	2.37	6 25.76	41 23.7
42	8	41.	55.1	. .	. .	. .	. .	. .	7 21.68	47.66	+0.01	II.	8	6.22	37 8.58	23.1	2.74	8 9.35	47 34.4
43	10	. .	. .	. .	. .	14.	27.2	. .	8 0.60	47.65	0.00	VI.	3	9.19	14 39.83	23.0	1.37	8 48.25	25 4.2
44	10	. .	. .	. .	36.	. .	. .	. .	9 35.85	47.65	−0.01	IV.	3	2.10	11 3.65	22.7	1.17	10 23.49	21 27.5
45	9	. .	. .	. .	. .	. .	. .	28.	9 47.94	47.65	0.00	VII.	7	9.3	33 30.92	22.6	2.52	10 35.59	43 56.0
46	9	. .	. .	. .	. .	. .	25.	29.	10 58.57	47.65	0.00	VII.	4	3.37	16 46.24	22.4	1.50	11 46.22	27 10.1
47	9	. .	. .	. .	. .	1.6	15.	. .	12 48.31	47.65	0.00	VI.	5	7.19	23 37.52	22.1	1.92	13 35.96	34 1.5
48	10	17.	30.5	. .	. .	. .	. .	. .	14 57.19	47.64	0.00	II.	3	11.10	15 35.80	21.8	1.43	15 44.83	25 59.0
49	9	. .	. .	. .	13.	. .	. .	. .	18 12.85	47.64	+0.01	IV.	9	4.8	41 0.15	21.2	2.98	19 0.50	51 24.3
50	9	. .	52.	5.	18.2	. .	. .	. .	20 18.26	47.64	0.00	IV.	3	9.9	14 34.93	20.9	1.37	21 5.90	24 57.2
51	10	. .	. .	. .	43.	45.3?	57.	. .	22 30.27	47.63	+0.01	VI.	8	9.20	38 38.44	20.5	2.83	23 17.91	49 1.8
52	11	. .	. .	. .	. .	. .	17.	30.5	23 50.40	47.63	0.00	VII.	7	8.5	33 1.68	20.3	2.49	24 38.03	43 24.5
53	7	. .	. .	24.	37.	. .	. .	. .	25 37.11	47.63	0.00	IV.	7	11.15	34 37.76	20.0	2.59	26 24.74	45 0.4
54	7	. .	. .	. .	. .	. .	. .	20.	25 40.09	47.63	+0.01	VII.	9	10.52	44 23.59	20.0	3.19	26 27.73	54 46.8
55	11	. .	. .	. .	. .	. .	25.	39.	26 58.60	47.63	0.00	VII.	5	7.2	23 28.81	19.7	1.90	27 46.23	33 50.4
56	11	. .	. .	. .	. .	. .	56.3	. .	28 29.76	47.62	−0.01	VI.	2	3.52	6 55.84	19.5	0.91	29 17.37	17 16.3
57	9	. .	. .	. .	. .	. .	4.	17.5	29 37.27	47.62	−0.01	VII.	2	5.4	7 32.01	19.3	0.94	30 24.88	17 52.3
58	8	54.	8.	21.	. .	. .	. .	. .	32 34.36	47.62	0.00	IV.	4	7.28	18 42.99	18.8	1.61	33 21.98	29 3.4
59	11	. .	. .	37.7	50.	. .	. .	. .	33 50.32	47.62	0.00	IV.	3	8.52	14 26.36	18.6	1.35	34 37.94	24 46.3
60	7	. .	. .	. .	. .	. .	. .	42.	34 1.59	47.62	−0.01	VII.	2	5.43	7 51.67	18.6	0.97	34 49.20	18 11.2
61	11	. .	. .	. .	52.6	. .	. .	. .	35 52.45	47.62	0.00	IV.	8	6.55	37 25.36	18.2	2.76	36 40.07	47 46.3
62	8	. .	5.	18.	. .	. .	. .	. .	38 31.27	47.61	−0.01	III.	1	11.28	5 46.88	17.8	0.84	39 18.87	16 5.5
63	11	. .	26.	38.8	. .	. .	. .	. .	39 52.55	47.61	+0.01	III.	8	12.15	40 6.68	17.6	2.93	40 40.17	50 27.2
64	11	. .	47.	0.0	. .	. .	. .	. .	41 23.36	47.61	0.00	III.	3	8.11	14 5.65	17.4	1.34	42 10.97	24 24.4
65	9	. .	. .	. .	. .	. .	33.	46.5	42 6.35	47.61	0.00	VII.	5	5.26	22 40.40	17.2	1.86	42 53.96	32 59.5
66	. .	. .	. .	. .	. .	39.	52.2	. .	43 25.6	47.61	. . .	.	.	. .	. . .	17.0			
67	9	. .	. .	. .	. .	. .	3.5	17.	44 36.91	47.61	0.00	VII.	7	7.17	32 37.47	16.8	3.47	45 24.52	42 56.7
68	8	. .	. .	. .	. .	. .	37.	. .	46 10.45	47.60	−0.01	VI.	2	10.45	10 24.12	16.5	1.11	46 58.04	20 41.7
69	10	. .	. .	. .	. .	. .	. .	5.	21 47 24.94	+47.60	0.00	VII.	7	9.26	−33 42.52	−16.3	−2.53	21 48 12.54	−20 44 1.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(190) 21. Transit over thread VII assumed as at 37^{s} instead of 39^{s}.
(190) 26. Transit over thread II assumed as at $7^{s}.8$ instead of $9^{s}.8$.
(190) 46. Transit over VII assumed as observed at 39^{s} instead of 29^{s}.
(190) 51. Transits incongruous; thread VI assumed as correctly observed; IV and V used as $30^{s}.4$ and $43^{s}.5$ instead of 43^{s} and $45^{s}.3$.
(190) 64. Transits over T.'s II, III, assumed as 57^{s} and 10^{s} instead of 47^{s} and 0^{s}.
(190) 66. Omitted micrometer reading.

Zone 191. September 1. B. Belt, −20° 38′. D_0 = −20° 10′ 0″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	11	. .	. .	. .	. .	. .	. .	57.	23 7 16.77	+47.57	0.00	VII.	5	4.19	−22 6.62	−57.6	−1.80	23 8 4.34	−20 33 6.0
2	10	. .	17.5	30.3	43.5	. .	. .	. .	11 43.81	47.57	+0.01	IV.	8	11.40	39 49.07	57.6	2.94	12 31.39	50 49.6
3	10	24.	37.6	50.5	. .	. .	. .	. .	14 4.07	47.57	0.00	III.	4	8.44	19 21.30	57.7	1.64	14 51.64	30 20.6
4	5.6	. .	. .	. .	. .	. .	. .	57.3	14 17.39	47.57	0.00	VII.	9	10.14	44 4.43	57.7	3.20	15 4.96	55 5.3
5	11	. .	. .	50.	3.	. .	. .	. .	19 3.09	47.57	0.00	IV.	7	5.7	31 32.20	57.7	2.42	19 50.66	42 32.3
6	10	. .	. .	. .	. .	. .	. .	55.0	19 14.76	47.57	0.00	VII.	5	2.50	21 24.74	57.7	1.76	20 2.33	
7	10	. .	. .	. .	. .	38.7	52.	. .	21 25.38	47.58	0.00	VI.	10	9.50	48 53.38	57.8	3.51	22 12.96	59 54.7
8	10	. .	. .	. .	. .	. .	48.5	1.7	22 21.62	47.58	0.00	VII.	2	6.21	8 10.83	57.8	0.95	23 9.20	19 9.6
9	10	. .	. .	. .	. .	40.	. .	. .	24 26.71	47.58	0.00	V.	9	9.52	43 53.58	57.8	3.20	25 14.29	54 54.6
10	10	. .	. .	. .	. .	. .	. .	39.	24 59.11	47.58	0.00	VII.	10	3.43	45 48.16	57.9	3.32	25 46.69	56 49.4
11	10	. .	. .	. .	. .	25.2	38.2	. .	30 11.70	47.58	0.00	VI.	4	2.5	16 0.0	58.0	1.43	30 59.28	26 59.4
12	11	. .	. .	. .	. .	. .	. .	15.5	31 35.27	47.58	0.00	VII.	5	4.29	22 11.66	58.0	1.81	32 22.85	33 11.5
13	9	. .	. .	. .	9.8	23.2	36.3	. .	33 9.72	47.58	0.00	VI.	5	8.59	24 27.97	58.0	1.97	33 57.30	35 27.9
14	10	. .	44.	56.5	10.	. .	. .	. .	36 10.17	47.59	0.00	IV.	7	9.57	33 58.43	58.1	2.57	36 57.76	44 59.1
15	10	42.	56.	8.5	22.	. .	. .	. .	38 22.15	47.59	0.00	IV.	5	9.32	24 44.73	58.2	1.98	39 9.74	35 44.9
16	10	. .	. .	13.3	27.	. .	. .	. .	40 26.68	47.59	0.00	IV.	5	6.56	23 26.07	58.2	1.90	41 14.27	34 26.2
17	10	. .	. .	13.	26.	. .	53.	6.5	46 26.31	47.59	0.00	IV.	9	5.43	41 48.05	58.4	3.07	47 13.90	52 49.5
18	10	32.8	46.2	. .	12.3	. .	. .	. .	50 12.82	47.60	0.00	IV.	9	3.27	40 39.47	58.5	3.00	51 0.42	51 41.0
19	9	. .	. .	. .	. .	6.	19.4	. .	50 52.73	47.60	0.00	VI.	9	3.7	40 29.27	58.6	2.99	51 40.33	51 30.9
20	11	. .	. .	. .	1.3	15.	. .	. .	53 1.42	47.60	0.00	V.	8	7.7	37 31.38	58.6	2.79	53 49.02	48 32.8
21	8	. .	. .	13.3	27.3	41.5	. .	. .	54 27.38	47.60	0.00	V.	9	6.15	42 4.16	58.7	3.09	55 14.98	53 6.0
22	10	. .	. .	. .	7.5	21.	. .	. .	56 7.43	47.60	−0.01	V.	1	1.1	5 29.72	58.7	0.77	56 55.02	16 29.2
23	10	. .	. .	. .	. .	31.3	45.	. .	57 18.17	47.61	0.00	VI.	4	7.50	18 53.95	58.8	1.60	58 5.78	29 54.4
24	11	. .	. .	. .	. .	. .	50.	3.5	23 58 23.41	47.61	0.00	VII.	7	9.53	33 56.13	58.8	2.56	23 59 11.02	44 57.5
25	11	. .	17.5	30.	43.5	. .	. .	. .	0 1 43.70	47.61	0.00	IV.	8	8.14	38 5.20	59.0	2.84	0 2 31.31	49 7.0
26	10	. .	. .	9.5	23.	36.5	. .	. .	3 22.87	47.61	0.00	V.	5	2.46	21 19.98	59.1	1.74	4 10.48	32 20.8
27	8	. .	. .	. .	57.5	11.	. .	. .	7 57.43	47.62	0.00	V.	1	5.26	2 44.35	59.3	0.60	8 45.05	13 44.3
28	11	. .	. .	. .	59.	12.2	. .	. .	10 58.89	47.62	0.00	V.	10	5.26	46 40.35	59.4	3.39	11 46.51	57 43.1
29	10	. .	. .	. .	29.	42.5	55.5	. .	12 28.96	47.63	0.00	VI.	7	11.29	34 44.70	59.5	2.62	13 16.59	45 46.8
30	6.7	. .	. .	. .	. .	. .	. .	3.	13 23.06	47.63	0.00	VII.	9	6.54	42 23.58	59.5	3.12	14 10.69	53 26.2
31	10	. .	58.	11.	. .	. .	. .	. .	16 24.54	47.63	0.00	IV.	6	11.45	29 52.89	59.7	2.33	17 12.17	40 54.9
32	9	. .	. .	. .	. .	. .	. .	14.3	16 34.27	47.63	0.00	VII.	7	13.4	35 32.44	59.7	2.67	17 21.90	46 34.8
33	7	. .	. .	. .	. .	29.	42.5	. .	19 15.79	47.64	0.00	VI.	10	6.00	46 57.39	59.8	3.40	20 3.43	58 0.6
34	10	. .	35.4	48.4	1.5	. .	. .	. .	22 1.74	47.64	0.00	IV.	6	11.41	29 50.87	60.0	2.33	22 49.38	40 53.2
35	11	. .	57.5	. .	23.4	37.	. .	. .	24 23.71	47.65	0.00	V.	6	6.41	27 19.57	60.1	2.15	25 11.36	38 21.8
36	10	. .	. .	42.	55.3	. .	. .	. .	32 55.17	47.66	0.00	IV.	5	3.13	21 33.61	60.6	1.77	33 42.83	32 36.0
37	9	. .	. .	6.5	19.5	. .	. .	. .	0 30 19.53	+47.66	0.00	IV.	5	6.18	−23 6.90	−60.4	−1.86	0 31 7.19	−20 34 9.2

Zone 192. September 2. K. Belt, −22° 31′. D_0 = −22° 5′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	. .	. .	. .	. .	48.3	. .	18 54 21.30	+48.82	+0.01	F.	9	3.30	−40 40.84	−17.2	−3.03	18 55 10.13	−22 46 31.1
2	9	. .	. .	. .	. .	44.1	. .	. .	56 30.63	48.81	+0.01	E.	10	0.47	43 20.80	17.0	3.26	18 57 19.45	49 11.1
3	9	. .	14.8	. .	41.4	. .	. .	. .	18 59 41.60	48.79	0.00	.	6	13.41	30 51.37	16.7	2.38	19 0 29.39	36 40.5
4	10	. .	. .	. .	9.9	. .	. .	. .	19 1 9.75	48.78	+0.01	.	9	6.20	42 6.71	16.6	3.12	1 58.54	47 56.4
5	8	. .	. .	. .	17.9	. .	. .	. .	2 17.75	48.78	−0.01	.	1	8.53	4 28.76	16.5	0.69	3 6.52	10 16.0
6	9	. .	. .	. .	. .	1.9	. .	. .	2 48.32	48.78	0.00	E.	4	10.21	20 10.19	16.5	1.69	3 37.10	25 58.4
7	6	. .	. .	. .	48.8	2.4	. .	. .	3 48.79	48.77	+0.01	.	9	8.7	43 0.67	16.4	3.18	4 37.57	48 50.3
8	8.9	. .	. .	. .	. .	24.6	. .	. .	19 4 10.99	+48.77	−0.01	E.	3	5.36	− 2 47.49	−16.3	−1.21	19 4 59.75	−22 18 35.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Sept. 2,	21	+ 45.36	*l* 0.011			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(191) 22. Hor. thread assumed as 2 instead of 1.
(192) 2. Micrometer reading assumed as $9^t\ 8^r.47$ instead of $10^t\ 0^r.47$, to agree with Arg. Z. 220, 81, W. Mer. Cir., July 17, and Mural July 17.

ZONE 192. SEPTEMBER 2. K. BELT, −22° 31′. D_0=−22° 5′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	10	34.5	. .	1.4	. .	. .	. .	. .	19 7 14.87	+48.76	−0.01	.	2	3.15	− 6 37.32	−16.0	−0.82	19 8 3.62	−22 12 24.1
10	9	. .	. .	53.4	6.8	. .	. .	. .	9 6.66	48.75	−0.01	.	3	12.47	16 24.85	15.9	1.45	9 55.40	22 12.3
11	9	. .	. .	. .	56.4	9.9	. .	. .	9 56.29	48.74	0.00	.	4	12.50	21 25.36	15.8	1.77	10 45.03	27 12.9
12	6.7	. .	. .	. .	49.7	3.2	. .	. .	10 49.62	48.74	+0.01	.	7	11.33	34 46.84	15.7	2.64	11 38.37	40 35.2
13	10	. .	1.9	15.2	. .	. .	. .	. .	12 28.68	48.73	−0.01	.	3	10.32	15 16.79	15.6	1.38	13 17.40	21 3.8
14	9	. .	23.0	35.8	. .	. .	. .	. .	14 49	48.73	+0.01	.	10	3.34	45 43.91	15.3	3.36	15 38.61	51 32.6
15	8.9	. .	28.8	41.4	. .	. .	. .	. .	15 55.50	48.72	+0.01	.	8	9.9	38 32.93	15.2	3.54	16 44.23	44 21.7
16	10	. .	. .	19.4	. .	. .	. .	. .	16 32.57	48.72	−0.01	.	2	6.13	8 7.08	15.2	0.91	17 21.28	13 53.2
17	11	. .	. .	. .	23.9	. .	. .	. .	20 23.75	48.70	0.01	.	2	12.20	11 12.13	14.8	1.11	21 12.44	16 58.0
18	10	. .	34.0	57.3	. .	. .	. .	. .	23 0.76	48.69	−0.01	.	3	6.15	13 7.19	14.6	1.23	23 49.44	18 53.0
19	9	. .	. .	. .	. .	. .	48.6	. .	24 21.67	48.68	0.00	VI.	4	9.10	19 34.28	14.5	1.65	25 10.35	25 20.4
20	10	. .	. .	41.8	55.3	. .	. .	. .	25 55.16	48.67	0.00	.	5	7.9	23 32.62	14.3	1.90	26 43.83	29 18.8
21	9	. .	43.8	57.0	. .	. .	. .	. .	27 10.46	48.67	−0.01	.	2	6.3	8 3.04	14.2	0.90	27 59.12	13 47.1
22	9	. .	. .	28.2	41.7	. .	. .	. .	27 41.48	48.66	−0.01	.	2	12.22	11 13.14	14.2	1.11	28 30.13	16 58.5
23	8.9	30.2	57.5	. .	. .	. .	. .	. .	30 10.90	48.66	0.00	.	4	6.25	18 11.23	13.9	1.56	30 59.56	23 56.7
24	10	. .	. .	. .	. .	. .	42.3	. .	32 15.31	48.65	+0.01	.	8	7.41	37 48.55	13.7	2.84	33 3.97	43 35.1
25	10	. .	. .	39.3	52.7	. .	. .	. .	33 52.53	48.64	−0.01	.	2	12.9	11 6.59	13.6	1.10	34 41.16	16 51.8
26	10	. .	. .	42.5	55.8	. .	. .	. .	34 55.94	48.64	+0.01	.	10	8.28	48 12.15	13.5	3.53	35 44.59	53 59.2
27	9	. .	20.6	. .	47.4	. .	. .	. .	37 47.38	48.62	−0.01	.	1	11.20	5 42.88	13.2	0.75	38 35.99	11 26.8
28	9	. .	24.9	37.7	. .	. .	. .	. .	48 51.64	48.57	0.00	.	7	8.25	33 12.04	12.2	2.54	49 40.21	38 56.8
29	8	. .	25.4	38.3	. .	. .	. .	. .	49 52.17	48.57	0.00	.	6	14.1	31 1.45	12.1	2.39	50 40.74	36 45.9
30	9	. .	. .	. .	. .	10.6	23.8	. .	51 56.95	48.56	0.00	V.	5	10.42	25 19.99	11.9	2.02	52 45.51	31 4.0
31	9	. .	. .	31.9	45.2	. .	. .	. .	19 54 45.22	48.55	0.00	.	6	13.9	30 35.24	11.7	2.36	19 55 33.77	36 19.3
32	10	4.9	18.8	. .	. .	. .	. .	. .	20 1 45.76	48.52	0.00	.	4	5.27	17 41.98	11.1	1.53	20 2 34.28	23 24.6
33	9.10	. .	12.6	. .	39.4	. .	. .	. .	4 39.45	48.51	0.00	.	5	7.5	23 30.60	10.8	1.90	5 27.96	29 13.3
34	7	43.1	56.9	. .	. .	. .	. .	. .	8 23.84	48.49	−0.01	.	2	10.48	10 25.75	10.5	1.05	9 12.32	16 7.3
35	9	. .	. .	. .	. .	41.3	54.2	. .	8 27.52	48.49	0.00	V.	4	13.29	21 44.98	10.5	1.79	9 16.01	27 27.3
36	10	. .	. .	. .	. .	47.3	. .	. .	9 33.77	48.48	0.00	V.	6	11.31	29 45.79	10.4	2.31	10 22.25	35 28.5
37	9	49.1	3.3	. .	. .	. .	. .	. .	12 30.12	48.47	0.00	.	4	9.57	19 58.13	10.1	1.68	13 18.59	25 39.9
38	9	. .	. .	45.7	59.4	. .	. .	. .	12 59.31	48.47	+0.01	.	9	8.56	43 25.38	10.1	3.22	13 47.79	49 8.7
39	9	. .	. .	30.9	. .	58.2	. .	. .	14 44.49	48.46	0.00	.	6	4.5	26 0.94	9.9	2.06	15 32.95	31 42.9
40	10	. .	. .	44.4	. .	. .	. .	. .	15 57.50	48.46	−0.01	.	1	5.57	3 0.01	9.8	0.57	16 45.95	8 40.4
41	11	. .	. .	. .	. .	. .	25.5	. .	15 58.60	48.46	−0.01	.	2	10.35	10 19.20	9.8	1.04	16 47.05	16 0.0
42	9	. .	2.8	15.8	. .	. .	. .	. .	18 29.53	48.45	0.00	.	5	10.1	24 59.35	9.6	2.00	19 17.98	30 41.0
43	6.7	. .	27.9	. .	53.8	. .	. .	. .	19 54.41	48.44	+0.01	.	10	6.56	47 25.77	9.5	3.50	20 42.86	53 8.8
44	9	56.9	11.2	. .	. .	. .	. .	. .	22 38.10	48.43	0.00	.	7	9.29	33 44.31	9.3	2.57	23 26.53	39 26.2
45	9	. .	. .	. .	39.8	53.3	. .	. .	22 39.72	48.43	+0.01	.	7	10.21	34 10.53	9.3	2.61	23 28.16	39 52.4
46	9	. .	29.5	. .	56.2	. .	. .	. .	23 56.38	48.42	0.01	.	8	8.57	38 26.88	9.1	2.90	24 44.81	44 8.9
47	10.11	. .	46.9	. .	. .	. .	. .	. .	29 14.15	48.40	+0.01	.	9	11.38	44 47.06	8.7	3.33	30 2.56	50 29.1
48	10	. .	. .	. .	58.8	. .	. .	. .	30 58.65	48.39	−0.01	.	1	6.37	3 20.19	8.6	0.58	31 47.03	8 59.4
49	10	54.3	8.8	. .	. .	. .	. .	. .	33 35.51	48.38	0.00	.	5	8.17	24 6.91	8.3	1.94	34 23.89	29 47.2
50	10	. .	. .	. .	. .	. .	15.4	. .	20 33 48.39	+48.38	+0.01	.	9	11.25	−44 40.50	− 8.3	−3.32	20 34 36.78	−22 50 22.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(192) 18. One of the transits wrong by 10^{s}; thread III assumed to have been observed at 47^{s}.3.
(192) 23. Transit across thread III assumed as recorded against thread II.

Zone 193. September 7. B. Belt, −18° 46′. $D_0 = -18° 21' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	27.	39.	25.3	. .	. .	. .	20 13 51.89	− 8.48	+0.01	V.	10	8.30	−48 13.14	− 18.1	−3.27	20 13 43.42	−19 9 34.5
2	9	. .	. .	. .	. .	53.3	6.	. .	14 39.90	8.48	0.00	VI.	6	7.32	27 45.21	18.1	2.16	14 31.42	18 49 5.5
3	9	. .	. .	. .	. .	. .	. .	46.	15 6.22	8.48	0.00	VII.	4	10.31	20 15.01	18.1	1.74	14 57.74	41 34.9
4	9	. .	0.0	12.9	26.	. .	. .	. .	17 26.17	8.49	0.00	IV.	8	5.20	36 37.45	17.9	2.64	17 17.68	57 58.0
5	9	. .	. .	. .	. .	. .	22.	. .	17 55.70	8.50	0.00	VI.	6	11.40	29 50.26	17.9	2.27	17 47.20	51 10.4
6	5	. .	. .	. .	. .	. .	. .	32.	18 52.22	8.50	0.00	VII.	4	11.25	20 42.23	17.8	1.76	18 43.72	18 42 1.8
7	8	. .	. .	11.	24.	. .	. .	. .	21 24.06	8.51	+0.01	IV.	8	8.48	43 21.34	17.7	3.03	21 15.56	19 54 42.1
8	9	. .	. .	45.6	59.	. .	. .	. .	23 58.69	8.52	0.00	IV.	3	7.40	13 50.05	17.5	1.39	22 50.17	18 35 8.9
9	11	. .	. .	58.	11.	. .	. .	. .	25 11.02	8.52	0.00	IV.	7	7.41	32 49.85	17.4	2.44	25 2.50	54 9.7
10	11	. .	. .	. .	. .	. .	15.	28.5	26 48.75	8.53	0.00	VII.	5	11.8	25 32.86	17.3	2.03	26 40.22	18 46 52.2
11	10	. .	. .	48.3	1.5	. .	. .	. .	30 1.52	8.54	+0.01	IV.	10	8.50	48 23.25	17.1	3.28	29 52.99	19 9 43.6
12	5.6	59.	13.	26.	38.5	52.	. .	. .	31 38.85	8.54	0.00	V.	4	6.00	18 28.85	17.0	1.61	31 30.31	18 39 47.5
13	11	. .	. .	. .	. .	. .	. .	48.	32 8.55	8.55	+0.01	VII.	9	8.13	43 3.42	17.0	3.00	32 0.01	19 4 23.4
14	11	. .	. .	. .	49.5	3.	. .	. .	33 49.61	8.56	+0.01	VI.	10	4.15	46 4.47	16.9	3.16	33 41.06	19 7 24.5
15	10	. .	. .	. .	. .	19.	32.	. .	35 5.75	8.56	0.00	VI.	5	8.54	24 25.46	16.8	1.97	34 57.19	18 45 44.2
16	11	. .	9.5	22.	. .	. .	. .	. .	37 35.55	8.57	0.00	III.	6	10.21	29 10.50	16.7	2.23	37 26.98	18 50 29.4
17	9	. .	33.	45.	58.2	. .	. .	. .	38 58.69	8.57	+0.01	IV.	10	9.7	48 31.82	16.6	3.29	38 50.13	19 9 51.7
18	9	. .	. .	. .	1.5	. .	. .	. .	40 1.35	8.58	0.00	IV.	5	7.17	23 36.65	16.5	1.92	39 52.77	18 44 55.1
19	7	. .	. .	. .	. .	. .	24.5	38.	40 58.19	8.58	0.00	VII.	3	7.53	13 56.33	16.4	1.39	40 49.61	35 14.1
20	10	. .	. .	. .	. .	. .	. .	6.	42 26.29	8.59	0.00	VII.	5	11.48	25 53.03	16.4	2.05	42 17.70	47 11.5
21	11	. .	. .	6.	19.6	. .	. .	. .	45 19.33	8.60	0.00	IV.	7	12.52	35 26.67	16.2	2.58	45 10.73	56 45.5
22	11	. .	. .	. .	. .	33.	. .	. .	46 19.76	8.60	0.00	VI.	4	13.12	21 36.34	16.1	1.81	46 11.16	18 42 54.3
23	9	. .	. .	. .	. .	. .	47.5	1.	47 21.38	8.60	+0.01	VII.	10	7.10	47 32.55	16.1	3.25	47 12.79	19 8 51.9
24	11	5.	19.	. .	. .	. .	. .	. .	50 44.98	8.61	−0.01	II.	1	9.55	4 59.91	15.9	0.91	50 36.36	18 26 16.7
25	11	53.5	7.	. .	. .	. .	. .	. .	53 33.37	8.62	0.00	II.	5	6.12	23 3.77	15.7	1.90	53 24.75	44 21.4
26	11	. .	. .	. .	. .	57.	10.	. .	54 43.75	8.63	0.00	VI.	6	6.15	27 6.38	15.7	2.12	54 35.12	48 24.2
27	7	. .	. .	. .	. .	. .	8.	21.3	55 41.63	8.63	0.00	VII.	4	11.33	20 46.27	15.6	1.77	55 33.00	42 3.6
28	9	37.	. .	3.5	16.4	. .	. .	. .	20 59 16.48	8.64	0.00	IV.	3	6.30	13 14.76	15.4	1.35	20 59 7.84	18 34 31.5
29	10	. .	. .	58.	11.2	. .	. .	. .	21 1 11.17	8.65	+0.01	IV.	8	12.15	40 6.71	15.3	2.85	21 1 2.53	19 1 24.9
30	8	. .	. .	. .	. .	. .	40.	53.	2 13.56	8.65	0.00	VII.	7	12.1	35 0.68	15.3	2.56	2 4.91	18 56 18.5
31	9	. .	48.	1.2	14.2	. .	. .	. .	6 14.14	8.67	−0.01	IV.	2	10.4	10 3.57	15.1	1.19	6 5.48	31 19.9
32	10	. .	. .	. .	. .	. .	18.0	31.	6 51.49	8.67	0.00	VII.	5	4.3	21 58.56	15.0	1.83	6 42.82	43 15.4
33	5.6	1.	14.5	27.5	40.5	. .	. .	. .	9 40.60	8.68	0.00	IV.	3	10.36	15 18.81	14.9	1.47	9 31.92	36 35.2
34	10	. .	. .	. .	20.3	34.	. .	. .	13 20.43	8.69	−0.01	VI.	2	12.25	11 14.54	14.7	1.24	13 11.73	32 30.5
35	10	. .	. .	. .	9.	23.	36.	. .	15 9.45	8.70	0.00	VI.	7	10.15	34 7.40	14.6	2.51	16 0.75	55 24.5
36	9	. .	. .	. .	1.5	15.	. .	. .	18 1.57	8.71	0.00	VI.	6	4.44	26 20.50	14.5	2.07	17 52.86	18 47 37.1
37	10	. .	. .	. .	. .	. .	. .	25.	18 45.52	8.71	+0.01	VII.	9	4.00	40 55.85	14.4	2.89	18 36.82	19 2 13.1
38	10	. .	9.5	22.	. .	. .	. .	. .	21 35.65	8.72	+0.01	III.	8	9.48	38 52.56	14.3	2.79	21 26.94	19 0 9.7
39	10	. .	. .	45.5	58.5	12.	. .	. .	22 58.56	8.72	0.00	V.	5	11.41	25 49.74	14.2	2.04	22 49.84	18 47 6.0
40	10	. .	. .	. .	. .	. .	. .	33.	23 53.40	8.72	0.00	VII.	7	7.15	32 36.47	14.2	2.43	23 44.68	53 53.1
41	10	. .	. .	. .	. .	53.5	6.	. .	25 39.98	8.73	−0.01	VI.	2	10.59	10 31.19	14.1	1.20	25 31.24	18 31 46.5
42	9	29.	43.6	56.	9.	. .	. .	. .	28 9.33	8.74	+0.01	IV.	9	6.43	42 18.31	14.0	2.97	28 0.60	19 3 35.3
43	8	. .	. .	. .	. .	20.5	33.	47.	29 7.20	8.74	+0.01	VII.	10	2.16	45 4.31	13.9	3.13	28 58.47	19 6 21.3
44	10	. .	. .	7.2	20.	33.3	. .	. .	31 20.07	8.75	0.00	V.	6	3.41	25 48.80	13.8	2.05	31 11.32	18 47 4.7
45	10	. .	. .	. .	. .	. .	. .	38.	31 58.57	8.75	+0.01	VII.	9	12.1	44 58.38	13.8	3.12	31 49.83	19 6 15.3
46	10	. .	16.	28.3	41.5	. .	. .	. .	34 41.81	8.76	+0.01	IV.	8	7.46	37 51.08	13.7	2.73	34 33.06	18 59 7.5
47	10	. .	. .	. .	. .	2.5	15.2	. .	35 49.11	8.76	0.00	VI.	7	3.33	30 44.69	13.6	2.32	35 40.35	52 0.6
48	9	. .	. .	27.6	40.5	54.	. .	. .	37 40.56	8.77	0.00	VI.	4	7.41	18 49.44	13.5	1.65	37 31.79	18 40 4.6
49	8	. .	. .	. .	. .	. .	44.	57.5	21 38 17.70	− 8.77	0.00	VII.	3	10.36	−15 18.54	− 13.5	−1.46	21 38 8.93	−18 36 33.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.
Sept. 7, 21	− 11.38	*l* 0.041			

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(193) 1. Transit over T. II assumed as recorded over T. IV. Other transits rejected.
(193) 7. Hor. thread assumed as 9 instead of 8.
(193) 8. Minutes assumed as 22 instead of 23.
(193) 12. Micrometer reading assumed as $7^{r}.00$ instead of $6^{r}.00$.
(193) 35. Minutes assumed as 16 instead of 15.

ZONE 193. SEPTEMBER 7. B. BELT, $-18°\ 46'$. $D_0 = -18°\ 21'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	. .	0.4	14.2	21 39 34.35	− 8.77	0.00	VII.	7	8.15	−33 6.73	−13.5	−2.45	21 39 25.58	−18 54 22.7
51	8	. .	. .	. .	9.	22.5	36.	. .	41 9.30	8.78	+0.01	VI.	9	9.10	43 32.32	13.4	3.04	41 0.53	19 4 48.8
52	8	. .	. .	. .	. .	. .	56.	9.5	42 29.81	8.78	0.00	VII.	8	2.53	35 23.06	13.3	2.59	42 21.03	18 56 39.0
53	10	. .	48.	. .	13.5	. .	. .	. .	47 13.93	8.79	0.00	IV.	8	3.5	35 29.38	13.1	2.60	47 5.14	56 45.1
54	8	. .	13.	25.4	39.	52.	. .	. .	48 38.81	8.80	0.00	V.	3	10.19	15 10.20	13.1	1.45	48 30.01	36 24.8
55	9	41.4	55.2	8.	21.	. .	. .	. .	51 21.17	8.81	0.00	IV.	4	12.37	21 18.81	13.0	1.79	51 12.36	42 33.6
56	7	25.	39.	51.4	4.5	. .	. .	. .	54 4.73	8.81	0.00	IV.	3	11.58	16 0.14	12.9	1.50	53 55.92	37 14.5
57	8	. .	40.	52.5	5.5	19.	. .	. .	56 5.69	8.82	−0.01	V.	2	11.56	11 0.01	12.8	1.21	55 56.86	32 14.0
58	8	8.	22.	35.	. .	. .	. .	. .	21 59 48.04	8.83	0.00	III.	4	6.48	18 22.80	12.6	1.62	21 59 39.21	39 37.0
59	8	. .	. .	. .	. .	. .	35.5	49.	22 0 9.18	− 8.83	−0.01	VII.	3	5.5	−12 31.62	−12.6	−1.30	22 0 0.34	−18 33 45.5

ZONE 194. SEPTEMBER 19. P. BELT, $-17°\ 30'$. $D_0 = -17°\ 6'\ 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	6.4	19.4	. .	45.5	. .	. .	. .	20 32 45.56	+ 3.12	−0.01	IV.	2	3.28	− 6 43.87	−11.71	−1.10	20 32 48.67	−17 13 6.7
2	10	. .	. .	. .	. .	14.5	. .	39.9	38 0.76	3.10	0.01	VII.	2	6.6	8 3.33	12.34	1.17	38 3.75	14 26.8
3	8	. .	. .	. .	. .	55.5	8.9	22.6	39 42.70	3.09	−0.01	VII.	2	11.8	10 35.60	12.55	1.29	39 45.88	16 59.4
4	7	46.5	0.1	12.6	. .	. .	. .	. .	42 26.17	3.08	+0.01	III.	9	10.37	44 16.29	12.87	2.96	42 29.26	50 42.1
5	11	. .	. .	58.5	. .	. .	. .	. .	45 11.42	3.07	0.00	III.	4	10.32	20 15.77	13.20	1.76	45 14.49	26 40.7
6	9	5.1	18.4	31.4	43.9	. .	. .	. .	49 44.25	3.05	−0.01	IV.	2	9.12	9 37.34	13.75	1.24	49 47.29	16 2.3
7	9	. .	. .	45.4	57.9	11.5	. .	. .	50 58.14	3.04	0.00	V.	4	11.575	20 58.87	13.90	1.80	51 1.18	27 24.6
8	10	23.5	36.5	49.5	. .	. .	. .	. .	53 2.71	3.03	0.00	III.	4	9.34	19 46.52	14.15	1.74	53 5.74	26 12.4
9	6	41.9	56.4	8.5	21.6	. .	. .	. .	56 21.86	3.02	+0.01	V.	8	9.53	38 55.09	14.56	2.70	56 24.89	45 22.4
10	4	. .	. .	. .	. .	. .	53.5	6.5	57 27.35	3.02	+0.01	VII.	9	8.15	43 4.47	14.70	2.91	57 30.38	49 32.1
11	8	. .	. .	. .	45.9	. .	12.5	25.9	20 59 46.16	3.01	−0.01	VII.	3	6.28	13 13.51	14.98	1.41	20 59 49.16	19 39.9
12	9	. .	. .	. .	. .	8.9	. .	34.8	21 1 55.59	3.00	0.00	VII.	6	6.48	27 22.90	15.25	2.12	21 1 58.59	33 50.3
13	10	. .	. .	58.5	. .	25.6	. .	. .	11 11.91	2.96	0.00	V.	4	5.43	17 50.03	16.42	1.64	11 14.87	24 18.1
14	6	. .	24.5	37.4	49.8	3.9	. .	. .	21 13 50.36	+ 2.95	0.00	V.	5	3.43	−21 48.72	−16.78	−1.84	21 13 53.31	−17 28 17.3

ZONE 195. SEPTEMBER 23. P. BELT, $-16°\ 53\frac{1}{2}'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	15.5	29.7	41.8	. .	. .	. .	. .	19 47 55.24	+19.06	0.00	III.	7	6.4	−32 0.93	. .	−2.33	19 48 14.30	
2	11	. .	. .	. .	. .	41.5	. .	7.8	49 28.28	19.05	−0.01	VII.	2	3.35	6 47.19	. .	1.13	49 47.32	
3	11	. .	6.4	. .	. .	. .	. .	. .	52 32.58	19.04	0.00	III.	6	11.32	29 46.32	. .	2.22	52 51.62	
4	9	. .	. .	. .	. .	. .	. .	16.8	52 37.84	19.04	+0.01	VII.	10	8.12	48 3.87	. .	3.15	52 56.89	
5	10	. .	21.8	34.4	47.5	. .	. .	. .	54 47.66	19.03	+0.01	IV.	9	4.45	41 18.81	. .	2.80	55 6.70	
6	9	. .	4.8	17.3	30.9	. .	. .	. .	19 56 30.61	19.02	0.00	IV.	4	8.4	19 1.16	. .	1.72	19 56 49.63	
7	10	28.4	41.8	54.5	. .	. .	. .	. .	20 5 7.86	18.99	+0.01	III.	8	8.41	38 18.79	. .	2.65	20 5 26.86	
8	9	. .	. .	. .	21.5	34.5	47.5	. .	6 21.45	18.98	+0.01	VI.	10	11.13	49 35.25	. .	3.23	6 40.44	
9	9	. .	. .	. .	. .	. .	. .	51.8	7 12.38	18.98	0.00	VII.	3	12.40	16 21.10	. .	1.59	7 31.36	
10	10	. .	. .	. .	2.9	. .	29.9	. .	12 3.30	18.96	+0.01	VI.	10	10.58	49 27.67	. .	3.23	12 22.27	
11	10	. .	. .	. .	. .	56.5	9.8	22.9	13 43.64	18.95	0.00	VII.	6	14.26	31 13.84	. .	2.30	14 2.59	
12	10	. .	. .	37.5	50.4	3.7	16.4	. .	21 50.46	18.92	0.00	VI.	7	10.41	34 20.52	. .	2.46	22 9.38	
13	8	. .	. .	29.5	42.4	55.4	. .	. .	23 42.42	18.91	+0.01	V.	8	8.27	38 11.73	. .	2.64	24 1.34	
14	7	4.6	17.6	30.6	43.	. .	. .	. .	26 43.86	18.90	0.00	IV.	7	9.34	33 46.84	. .	2.44	27 2.76	
15	11	. .	. .	22.6	. .	48.5	. .	. .	28 35.29	18.89	−0.01	V.	1	8.38	4 21.18	. .	1.00	28 54.17	
16	8	. .	. .	2.4	15.5	28.8	41.8	54.9	30 15.63	18.89	+0.01	VII.	8	4.49	36 21.61	. .	2.57	30 34.53	
17	7	. .	. .	. .	. .	0.5	13.4	26.5	20 31 47.26	+18.88	−0.01	VII.	3	1.33	−10 44.77	. .	−1.30	20 32 6.13	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Sept. 19,	22	− 0.30	*l* 0.053	− 0.52	+ 1.17	0.00
Sept. 23,	22	− 16.07	*l* 0.087	− 0.53	+ 1.18	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

ZONE 195. SEPTEMBER 23. P. BELT, —16° 53½′—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	10	. .	. .	. .	44.6	. .	10.5	. .	20 37 44.46	+18.86	+0.01	VI.	10	4.10	−46 1.96	. .	−3.05	20 38 3.33	
19	10	. .	. .	. .	27.4	. .	53.5	. .	39 27.37	18.85	+0.01	VI.	8	3.3	35 28.27	. .	2.52	39 46.23	
20	10	. .	54.6	7.4	20.5	33.8	. .	. .	42 20.57	18.84	0.00	V.	6	11.22	29 41.27	. .	2.23	42 39.41	
21	10	. .	. .	. .	. .	. .	. .	. .	43	18.84	−0.01	II.	2	9.47	9 54.89	. .	1.27		
22	8	. .	39.2	. .	. .	. .	. .	. .	50 5.21	18.81	−0.01	VII.	2	5.41	7 50.72	. .	1.15	50 24.01	
23	10	. .	. .	. .	. .	10.4	22.2	36.5	20 52 56.95	+18.80	0.00	VII.	7	7.55	−32 56.69	. .	−2.40	20 53 15.75	

ZONE 196. SEPTEMBER 25. B. BELT, —16° 53½′. Ḋ₀=—16° 27′ 0″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	23.3	37.2	49.2	. .	. .	. .	. .	20 5 2.88	+23.19	+0.01	III.	8	11.13	−39 35.43	−14.4	−2.70	20 5 26.08	−17 6 52.5
2	10	. .	. .	. .	. .	. .	. .	3.5	5 24.37	23.19	+0.01	VII.	8	4.35	36 14.55	14.3	2.54	5 47.57	17 3 31.4
3	7	. .	. .	55.	8.2	21.	. .	. .	7 7.93	23.18	0.00	V.	4	5.26	17 41.46	14.1	1.66	7 31.11	16 44 57.2
4	10	. .	. .	. .	. .	. .	. .	14.	7 34.65	23.18	0.00	VII.	4	11.32	20 45.82	14.0	1.80	7 57.83	48 1.6
5	10	. .	. .	18.5	31.	44.5	. .	. .	9 31.12	23.17	−0.01	V.	1	9.57	5 1.01	13.8	1.06	9 54.28	32 15.9
6	10	. .	. .	. .	. .	. .	49.	2.	10 22.88	23.16	0.00	VII.	6	12.50	30 25.44	13.7	2.26	10 46.04	16 57 41.4
7	9	. .	. .	. .	59.1	12.4	. .	. .	11 59.20	23.16	+0.01	V.	10	13.11	50 34.82	13.4	3.23	12 22.37	17 17 51.5
8	9	. .	. .	. .	16.5	. .	. .	. .	13 16.36	23.15	+0.01	IV.	10	7.39	47 47.45	13.3	3.09	13 39.52	17 15 3.8
9	9	. .	. .	. .	. .	. .	. .	18.3	13 39.12	23.15	0.00	VII.	7	7.7	32 32.49	13.2	2.36	14 2.27	16 59 48.1
10	10	. .	. .	. .	25.5	39.	. .	. .	16 25.63	23.14	0.00	V.	5	7.20	23 38.14	12.8	1.93	16 48.77	50 52.9
11	10	. .	51.	3.	17.5	. .	. .	. .	21 17.22	23.11	0.00	IV.	4	3.2	16 28.87	12.2	1.60	21 40.33	16 43 42.7
12	8	. .	. .	. .	. .	. .	. .	25.	21 45.86	23.11	+0.01	VII.	8	3.1	35 27.14	12.1	2.51	22 8.98	17 2 41.8
13	9	. .	. .	25.5	38.4	51.	. .	. .	23 38.29	23.10	0.01	V.	8	10.58	39 27.87	11.9	2.70	24 1.40	6 42.5
14	7	. .	. .	26.	39.	52.5	. .	. .	26 39.13	23.09	+0.01	V.	7	12.00	35 0.43	11.5	2.48	27 2.23	17 2 14.4
15	10	. .	5.2	18.	31.	. .	. .	. .	28 30.91	23.08	−0.01	IV.	1	11.12	5 38.85	11.2	1.08	28 53.98	16 32 51.1
16	8	32.	46.2	. .	. .	. .	. .	. .	30 11.99	23.07	+0.01	II.	8	7.14	37 34.84	11.0	2.62	30 35.07	17 4 48.5
17	10	. .	. .	. .	. .	. .	. .	55.	30 15.80	23.07	0.00	VII.	7	4.48	31 22.40	11.0	2.31	30 38.87	16 58 35.7
18	6.7	. .	. .	. .	. .	55.2	9.	23.	31? 42.87	23.07	−0.01	VII.	3	4.15	12 6.46	10.8	1.39	32 5.93	39 18.7
19	10	. .	27.	39.5	. .	5.2	. .	. .	33 52.57	23.06	0.00	V.	6	3.30	25 43.27	10.5	2.03	34 15.63	52 55.8
20	10	. .	. .	50.5	3.4	. .	. .	. .	36 3.36	23.04	0.00	IV.	6	4.14	26 5.48	10.3	2.05	36 26.40	53 17.8
21	10	. .	. .	. .	. .	. .	. .	4.	36 24.46	23.04	−0.01	VII.	2	4.53	7 26.52	10.2	1.16	36 47.49	34 37.9
22	10	. .	37.	50.	. .	. .	. .	. .	39 3.00	23.03	0.00	III.	5	2.32	21 12.93	9.9	1.82	39 26.03	48 24.7
23	7	. .	. .	. .	. .	. .	44.	57.4	39 18.06	23.03	0.00	VII.	6	4.45	26 20.89	9.8	2.06	39 41.09	53 32.8
24	10	37.5	51.5	4.	. .	. .	. .	. .	42 17.23	23.02	0.00	III.	7	3.56	30 56.38	9.4	2.29	42 40.25	16 58 8.1
25	10	. .	. .	. .	7.	20.5	. .	. .	43 7.17	23.01	+0.01	VI.	8	6.12	37 3.58	9.3	2.59	43 30.19	17 4 15.5
26	9	. .	. .	. .	. .	. .	27.	40.5	44 1.05	23.01	0.00	VII.	3	12.34	16 18.08	9.2	1.58	44 24.06	16 43 28.9
27	10	. .	. .	9.	21.5	. .	. .	. .	46 21.58	23.00	−0.01	IV.	3	9.11	14 35.93	8.9	1.50	46 44.57	41 46.3
28	10	. .	. .	. .	. .	. .	. .	16.	46 36.49	23.00	0.01	VII.	2	9.38	9 50.23	8.9	1.27	46 59.48	37 0.4
29	10	. .	. .	. .	24.	37.5	. .	. .	48 24.09	22.99	0.01	V.	3	4.53	17 24.84	8.7	1.64	48 47.07	44 35.2
30	7	. .	. .	. .	. .	. .	. .	32.5	48 52.99	22.98	−0.01	VII.	2	8.19	9 10.40	8.6	1.24	49 15.96	36 20.2
31	10	. .	. .	. .	. .	53.	. .	. .	51 39.94	22.97	0.00	V.	6	11.33	29 46.82	8.3	2.23	52 2.91	16 56 57.4
32	9	. .	. .	. .	. .	2.	14.5	28.	52 48.76	22.96	0.00	VII.	7	10.5	34 2.25	8.1	2.44	53 11.72	17 1 12.8
33	10	55.	9.	. .	. .	. .	. .	. .	55 34.86	22.96	0.00	II.	7	9.57	33 58.33	7.8	2.44	55 57.82	17 1 8.6
34	10	. .	. .	5.4	18.5	. .	. .	. .	56 18.32	22.95	0.00	IV.	5	2.43	21 18.49	7.7	1.82	56 41.27	16 48 28.0
35	9	. .	4.	16.5	. .	. .	. .	. .	58 29.89	22.94	0.00	III.	7	10.5	34 2.45	7.4	2.44	58 52.83	17 1 12.3
36	10	. .	. .	. .	. .	. .	7.	20.5	20 58 41.18	22.94	+0.01	VII.	8	7.33	37 44.30	7.4	2.63	20 59 4.13	17 4 54.3
37	10	. .	. .	12.	25.	. .	. .	. .	21 0 24.86	22.93	0.00	IV.	4	7.7	18 32.41	7.2	1.69	21 0 47.79	16 45 41.3
38	10	. .	. .	40.	53.	. .	. .	. .	1 52.86	22.92	0.00	IV.	4	9.11	19 34.93	7.0	1.74	2 15.78	46 43.7
39	9	. .	. .	. .	. .	51.5	4.5	. .	21 2 38.43	+22.92	−0.01	VI.	2	11.45	−10 54.39	− 6.9	−1.32	21 3 1.34	−16 38 2.6

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1848. h.	s.	s.	s.	s.	s.
Sept. 25, 22	+ 20.21	l 0.047	− 0.56	+ 1.22	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	THERMOM. Ex.
	1848. h. m.	in.	°	°

REMARKS.

(195) 19. Fine double star.
(196) 29. Hor. thread assumed as 4 instead of 3.

ZONE 196. SEPTEMBER 25. B. BELT, −16° 53½′. D_0 = −16° 27′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
40	9	12.3	25.3	38.3	. .	. .	. .	. .	21 6 51.38	+22.90	0.00	III.	3	10.59	−15 30.38	− 6.4	−1.54	21 7 14.28	−16 42 38.3
41	9	. .	43.	56.	. .	. .	. .	. .	9 8.82	22.89	−0.01	III.	1	7.28	3 45.87	6.1	0.98	9 31.70	30 53.0
42	8	52.2	6.	18.5	. .	. .	. .	. .	10 31.70	22.89	0.00	III.	4	12.14	21 7.19	5.9	1.81	10 54.59	16 48 14.9
43	10	. .	. .	. .	26.5	39.5	. .	. .	11 26.43	22.88	+0.01	V.	8	9.41	38 49.04	5.8	2.68	11 49.32	17 5 57.5
44	8	. .	41.3	53.8	6.5	. .	. .	. .	13 6.86	22.88	0.00	IV.	6	5.54	26 55.90	5.6	2.09	13 29.74	16 54 3.6
45	10	. .	. .	. .	. .	. .	. .	38.5	13 59.47	22.88	+0.01	VII.	9	8.42	43 18.10	5.5	2.90	14 22.36	17 10 26.5
46	10	. .	. .	. .	. .	. .	. .	50.	15 10.89	22.87	+0.01	VII.	8	7.6	37 30.69	5.3	2.62	15 33.77	4 38.6
47	10	. .	. .	. .	. .	. .	54.	7.	16 27.91	22.86	0.00	VII.	8	2.55	35 24.12	5.2	2.51	16 50.77	2 31.8
48	10	. .	. .	. .	23.	. .	. .	. .	18 22.86	22.86	+0.01	IV.	8	7.25	37 40.48	5.0	2.63	18 45.73	17 4 48.1
49	10	. .	. .	. .	. .	34.5	. .	. .	19 21.42	22.85	0.00	V.	6	4.55	26 26.13	4.8	2.07	19 44.27	16 53 33.0
50	10	. .	10.5	23.	36.	. .	. .	. .	21 36.19	22.84	0.00	IV.	6	12.46	30 23.65	4.6	2.26	21 59.03	57 30.5
51	9	20.5	34.2	46.5	59.5	. .	. .	. .	24 59.76	22.83	0.00	IV.	5	8.45	24 21.03	4.2	1.97	25 22.59	51 27.2
52	10	. .	7.2	. .	. .	. .	. .	. .	26 33.38	22.82	0.00	II.	6	9.16	28 37.66	4.0	2.17	26 56.20	55 43.8
53	10	10.3	25.	37.5	. .	. .	. .	. .	28 50.50	22.80	0.00	III.	7	4.41	31 19.07	3.7	2.31	29 13.30	58 25.1
54	9	. .	. .	. .	. .	. .	. .	48.	29 8.76	22.80	0.00	VII.	6	8.36	28 17.38	3.7	2.16	29 31.56	55 23.2
55	10	. .	. .	. .	10.	. .	. .	. .	31 9.86	22.80	0.00	.	3	7.32	13 46.02	3.5	1.46	31 32.66	16 40 51.0
56	10	. .	. .	42.	. .	. .	. .	. .	33 55.23	22.78	+0.01	III.	10	6.24	47 9.61	3.2	3.10	34 18.02	17 14 15.9
57	9	2.	15.5	28.3	41.5	54.	. .	. .	35 41.03	22.78	−0.01	IV.	3	4.24	12 11.22	3.0	1.38	36 3.80	16 39 15.6
58	10	. .	. .	. .	40.	. .	. .	. .	37 39.84	22.77	0.00	IV.	3	7.25	13 42.48	2.7	1.45	38 2.61	40 46.6
59	4	. .	. .	. .	. .	. .	48.	1.5	38 21.10	22.76	0.00	VII.	6	2.16	21 4.61	2.7	1.81	38 43.86	48 9.1
60	9	8.	21.5	34.2	47.	. .	. .	. .	41 47.28	22.75	0.00	IV.	6	4.22	26 9.51	2.3	2.06	42 10.03	53 13.9
61	9	. .	32.2	45.	58.	. .	. .	. .	43 58.09	22.74	0.00	IV.	7	2.59	30 27.66	2.0	2.26	44 20.83	57 31.9
62	10	. .	31.5	44.2	. .	. .	. .	. .	47 57.20	22.72	−0.01	III.	2	3.34	6 46.89	1.6	1.11	48 19.91	33 49.6
63	10	. .	. .	. .	. .	59.	12.	25.4	48 46.03	22.72	0.00	VII.	6	11.17	29 38.55	1.5	2.22	49 8.75	16 56 42.3
64	10	. .	. .	. .	4.	. .	. .	. .	51 3.86	22.71	0.00	IV.	7	12.40	35 20.62	1.3	2.51	51 26.57	17 2 24.4
65	10	. .	. .	. .	. .	. .	. .	17.	51 37.91	22.71	+0.01	VII.	8	10.55	39 26.16	1.2	2.73	52 0.63	17 6 30.1
66	10	. .	28.	40.5	. .	. .	. .	. .	53 53.82	22.70	0.00	III.	6	6.39	27 18.58	1.0	2.11	54 16.52	16 54 21.7
67	10	. .	. .	. .	47.	. .	. .	. .	54 46.86	22.70	0.00	IV.	6	5.15	26 36.23	0.9	2.08	55 9.56	53 39.2
68	9	. .	. .	. .	38.5	51.5	. .	. .	55 38.39	22.69	0.00	V.	6	4.12	26 4.45	0.8	2.05	56 1.08	53 7.3
69	10	. .	. .	13.5	26.2	. .	. .	. .	57 26.19	22.69	0.00	IV.	4	2.37	16 16.27	0.6	1.57	57 48.88	43 18.4
70	9	40.6	54.3	7.	. .	. .	. .	. .	21 59 20.06	+22.68	0.00	III.	4	3.42	−16 49.02	− 0.4	−1.60	21 59 42.74	−16 43 51.0

ZONE 197. SEPTEMBER 25. B. BELT, −16° 53½′. D_0 = −16° 26′ 50″.

1	9	. .	. .	. .	36.2	49.5	. .	. .	23 6 36.27	+22.44	0.00	V.	8	4.27	−36 10.71	−10.8	−2.58	23 6 58.71	−17 3 14.1
2	10	. .	. .	. .	. .	. .	. .	56.	7 16.54	22.44	0.00	VII.	3	6.45	13 22.10	10.7	1.39	7 38.98	16 40 24.2
3	9	. .	47.	59.2	12.2	. .	. .	. .	9 12.50	22.43	0.00	IV.	7	6.435	32 20.86	10.6	2.38	9 34.93	16 59 23.8
4	11	. .	. .	. .	. .	. .	. .	25.	9 45.97	22.43	0.00	VII.	9	8.2	42 57.93	10.5	2.94	10 8.40	17 10 1.4
5	9	. .	. .	. .	25.5	38.3	. .	. .	11 25.35	22.43	0.00	V.	2	8.12	9 7.07	10.4	1.18	11 47.78	16 36 8.7
6	10	. .	12.	24.5	. .	. .	. .	. .	13 38.00	22.43	0.00	III.	9	13.34	40 46.53	10.3	2.82	14 0.43	17 7 49.6
7	11	. .	. .	. .	33.5	. .	. .	. .	15 33.36	22.42	0.00	IV.	3	8.58	14 29.38	10.2	1.45	15 55.78	16 41 31.0
8	10	. .	. .	. .	. .	. .	34.	47.5	16 8.14	22.42	0.00	VII.	7	7.48	32 53.16	10.1	2.41	16 30.56	59 55.7
9	10	. .	. .	. .	47.5	2.	. .	. .	17 48.18	22.41	0.00	V.	7	4.2	30 59.41	10.0	2.31	18 10.57	16 58 1.7
10	10	. .	. .	. .	. .	. .	. .	1.	18 21.91	22.41	0.00	VII.	8	10.21	39 9.01	10.0	2.74	18 44.32	17 6 11.8
11	9	2.1	16.	28.5	41.5	. .	. .	. .	22 41.59	22.40	0.00	IV.	4	12.46	21 23.35	9.8	1.82	23 3.99	16 48 25.0
12	10	. .	. .	. .	. .	. .	. .	35.	33 55.90	22.37	0.00	VII.	8	9.40	38 48.34	9.1	2.72	34 18.27	17 5 50.2
13	9	. .	. .	. .	53.5	7.	. .	. .	35 53.58	22.36	0.00	V.	1	5.25	2 43.85	9.0	0.87	36 15.94	16 29 43.7
14	9	48.5	2.2	14.8	28.	. .	. .	. .	39 27.94	22.36	0.00	IV.	5	4.9	22 1.86	8.8	1.85	39 50.30	49 2.5
15	8.9	45.	58.4	11.	24.	. .	. .	. .	23 41 24.12	+22.35	0.00	IV.	3	9.165	−14 38.71	− 8.7	−1.46	23 41 46.47	−16 41 38.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(196) 59. Hor. thread assumed as 5 instead of 6.
(197) 6. Hor. thread assumed as 8 instead of 9.

ZONE 197. SEPTEMBER 25. B. BELT, −16° 53½′. $D_0 = -16° 26′ 50″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
16	10	. .	. .	. .	43.	56.	. .	. .	23 42 42.90	+22.35	0.00	V.	6	12.53	−30 27.15	− 8.7	−2.29	23 43 5.25	−16 57 28.1
17	10	. .	. .	54.	7.	. .	. .	. .	44 7.05	22.34	0.00	IV.	10	6.95	47 2.32	8.6	3.17	44 29.39	17 14 4.1
18	9	. .	. .	. .	. .	. .	. .	14.	44 35.00	22.34	0.00	VII.	10	3.4	45 28.56	8.6	3.09	44 57.34	12 30.3
19	10	. .	. .	. .	40.2	53.3	. .	. .	48 40.19	22.33	0.00	V.	10	5.7	46 30.78	8.4	3.14	49 2.52	17 13 32.3
20	10	. .	. .	. .	. .	. .	. .	57.	49 17.76	22.33	0.00	VII.	6	9.40	28 49.64	8.4	2.20	49 40.09	16 55 50.2
21	10	. .	4.3	17.	30.2	. .	. .	. .	54 30.06	22.32	0.00	IV.	3	6.00	12 59.63	8.2	1.37	54 52.38	39 59.2
22	10	. .	. .	3.5	16.2	. .	. .	. .	56 16.17	22.32	0.00	IV.	3	5.44	12 51.56	8.1	1.37	56 38.49	39 51.0
23	10	. .	. .	. .	. .	. .	. .	12.5	56 33.08	22.32	0.00	VII.	4	2.57	16 26.13	8.1	1.55	56 55.40	43 25.8
24	10	. .	38.8	51.5	4.5	. .	. .	. .	23 59 4.50	22.31	0.00	IV.	3	8.9	14 4.68	8.0	1.42	59 26.81	41 4.1
25	10	. .	. .	. .	8.	. .	33.5	. .	0 0 7.69	22.31	0.00	.	1	9.33	4 48.93	7.9	0.96	23 59 30.00	31 47.8
26	10	. .	. .	. .	. .	. .	. .	45.	4 5.55	22.30	0.00	VII.	3	7.14	13 36.72	7.8	1.39	0 4 27.85	40 35.9
27	10	. .	34.5	47.	0.2	. .	. .	. .	7 0.23	22.30	0.00	IV.	6	4.45	26 21.11	7.7	2.08	7 22.53	53 20.9
28	10	. .	. .	. .	59.2	12.5	. .	. .	10 59.23	22.29	0.00	V.	5	5.435	22 49.48	7.5	1.88	11 21.52	49 48.9
29	9	. .	. .	34.	47.	0.2	. .	. .	12 46.83	22.29	0.00	V.	1	5.35	2 48.90	7.5	0.86	13 9.12	16 29 47.3
30	9	. .	. .	. .	. .	. .	. .	16.	13 36.86	22.29	0.00	VII.	7	13.495	35 25.14	7.5	2.58	13 59.15	17 2 25.2
31	8.9	. .	. .	. .	. .	18.3	31.	44.3	15 5.04	22.29	0.00	VII.	4	9.10	19 34.21	7.4	1.71	15 27.33	16 46 33.3
32	9	. .	. .	42.3	55.	8.5	. .	. .	16 55.16	22.28	0.00	V.	5	9.14	24 35.63	7.4	1.98	17 17.44	51 35.0
33	9	. .	. .	. .	. .	. .	. .	12.	17 32.80	22.28	0.00	VII.	7	4.00	30 58.20	7.3	2.32	17 55.08	16 57 57.8
34	8.9	. .	15.5	28.	41.	. .	. .	. .	19 41.30	22.28	0.00	IV.	10	7.8	47 31.81	7.3	3.22	20 3.58	17 14 32.3
35	10	. .	. .	. .	. .	. .	. .	20.2	19? 41.06	22.28	0.00	VII.	8	3.48	35 50.84	7.3	2.57	21 3.34	17 2 50.7
36	9	. .	. .	15.5	28.3	41.3	. .	. .	22 28.23	22.28	0.00	V.	4	5.34	17 45.50	7.2	1.62	22 50.51	16 44 44.3
37	10	. .	3.	15.	28.2	. .	. .	. .	27 28.41	22.27	0.00	IV.	6	8.55	28 27.17	7.1	2.19	27 50.68	55 26.5
38	9	. .	. .	. .	. .	. .	23.	37.	27 57.32	22.27	0.00	VII.	4	11.505	20 55.14	7.1	1.78	28 19.59	16 47 54.0
39	9	. .	52.	4.3	17.2	30.2	. .	. .	30 17.46	22.26	0.00	V.	8	6.29	37 12.23	7.0	2.65	30 39.72	17 4 11.9
40	10	. .	. .	40.	53.	. .	. .	. .	31 53.02	22.26	0.00	IV.	9	6.15	42 4.19	7.0	2.92	32 15.28	17 9 4.1
41	10	. .	29.	41.5	. .	. .	. .	. .	34 54.84	22.26	0.00	III.	6	11.58	29 59.42	6.9	2.27	35 17.10	16 56 58.6
42	10	. .	. .	. .	. .	. .	. .	43.2	35 3.90	22.26	0.00	VII.	5	10.52	25 24.85	6.9	2.02	35 26.16	16 52 23.8
43	5.6	. .	. .	. .	49.	2.2	15.	. .	37 49.01	22.26	0.00	VI.	10	7.37	47 46.34	6.8	3.24	38 11.27	17 14 46.4
44	10	. .	. .	. .	10.	. .	. .	. .	41 9.86	22.25	0.00	IV.	10	3.18	45 35.83	6.8	3.11	41 32.11	17 12 35.7
45	10	. .	. .	. .	. .	. .	32.2	46.2	42 6.59	22.25	0.00	VII.	7	6.12	32 4.76	6.8	2.38	42 28.84	16 59 3.9
46	10	. .	. .	. .	. .	. .	. .	51.	44? 11.78	22.25	0.00	VII.	7	2.52	30 23.91	6.7	2.29	44 34.03	57 22.9
47	9	. .	. .	3.	16.3	29.3	. .	. .	46 16.15	22.25	0.00	V.	7	6.48	32 23.11	6.7	2.39	46 38.40	16 59 22.2
48	10	. .	35.	47.	0.	. .	. .	. .	48 0.44	22.25	0.00	IV.	9	9.35	43 45.04	6.7	3.02	48 22.69	17 10 44.8
49	9	. .	. .	14.2	27.3	40.5	. .	. .	49 27.22	22.25	0.00	V.	5	4.21	22 7.88	6.6	1.84	49 49.47	16 49 6.3
50	9	. .	. .	. .	. .	. .	. .	58.	50 18.40	22.24	0.00	.	1	5.32	2 47.41	6.6	0.83	50 40.64	16 29 44.8
51	9	. .	. .	. .	32.	. .	. .	. .	53 31.86	22.24	0.00	IV.	8	9.29	38 43.01	6.6	2.74	53 54.10	17 5 42.4
52	7.8	. .	. .	. .	. .	. .	15.3	29.	53 49.57	22.24	0.00	VII.	8	6.38	37 16.57	6.6	2.65	0 54 11.81	17 4 15.8
53	10	. .	29.2	42.	55.	. .	. .	. .	0 59 55.00	22.24	0.00	IV.	4	6.6	18 1.66	6.5	1.63	1 0 17.24	16 44 59.8
54	9	. .	12.	24.2	37.3	. .	. .	. .	1 2 37.58	22.24	0.00	IV.	8	10.50	39 23.86	6.5	2.78	2 59.82	17 6 23.1
55	10	. .	41.	54.	6.5	. .	. .	. .	4 6.80	22.24	0.00	IV.	5	8.47	24 22.04	6.5	1.97	4 29.04	16 51 20.5
56	11	. .	. .	13.5	26.	. .	. .	. .	6 26.18	22.24	0.00	IV.	6	9.11	28 35.23	6.5	2.19	6 48.42	55 33.9
57	8	. .	. .	. .	. .	. .	33.2	47.	7 7.36	22.24	0.00	VII.	2	9.39	9 50.74	6.5	1.18	7 29.60	36 48.4
58	8	. .	47.	0.	13.	. .	. .	. .	12 12.87	22.23	0.00	IV.	2	8.2	9 2.05	6.5	1.14	12 35.10	16 35 59.7
59	10	. .	24.2	36.6	49.8	. .	. .	. .	15 49.90	22.23	0.00	IV.	7	8.58	33 28.68	6.5	2.46	16 12.13	17 0 27.6
60	9	. .	. .	. .	. .	. .	. .	34.5	16 55.52	22.23	0.00	VII.	10	5.10	46 32.09	6.5	3.18	17 17.75	17 13 31.8
61	10	. .	. .	29.4	42.3	55.	. .	. .	20 42.07	22.23	0.00	V.	3	8.15	14 7.68	6.5	1.41	21 4.30	16 41 5.6
62	10	. .	. .	. .	48.	1.2	. .	. .	21 48.00	22.23	0.00	V.	6	7.27	27 42.79	6.5	2.15	22 10.23	54 41.4
63	9	. .	31.5	44.	57.	. .	. .	. .	24 57.17	22.23	0.00	VI.	6	8.43	28 21.00	6.5	2.19	25 19.40	55 19.7
64	9	. .	. .	27.5	40.4	53.2	. .	. .	1 28 40.24	+22.23	0.00	VII.	4	10.3	−20 0.87	− 6.5	−1.72	1 29 2.47	−16 46 59.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(197) 25. Minutes assumed as 59 instead of 0.
(197) 30. Micrometer reading assumed as $12^r.495$ instead of $13^r.495$.
(197) 35. Minutes assumed as 20 instead of 19.
(197) 46. Minutes doubtful.
(197) 50. Double.

ZONE 197. SEPTEMBER 25. B. BELT, −16° 53½′. D₀=−16° 26′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
65	9	. .	. .	. .	. .	59.	11.5	25.	1 29 45.67	+22.22	0.00	VII.	4	7.48	−18 52.86	− 6.5	−1.66	1 30 7.89	−16 45 51.0
66	9	. .	. .	. .	. .	. .	11.	25.	30 45.27	22.23	0.00	VII.	2	12.15	11 9.39	6.5	1.24	31 7.50	16 38 7.1
67	10	. .	. .	. .	56.	9.2	. .	. .	32 56.02	22.24	0.00	V.	8	3.57	35 55.58	6.5	2.59	33 18.26	17 2 54.7
68	4.5	5.	18.	31.	44.	57.	. .	. .	36 44.00	22.24	0.00	VII.	4	3.32	16 43.78	6.6	1.55	37 6.24	16 43 41.9
69	10	. .	. .	. .	. .	. .	1.	14.5	37 35.02	22.24	0.00	VII.	3	3.16	11 36.71	6.6	1.27	37 57.26	38 34.6
70	10	. .	. .	. .	24.	. .	. .	. .	42 23.86	22.24	0.00	IV.	1	8.65	4 4.55	6.6	0.85	42 46.10	16 31 1.7
71	10	24.	37.5	50.	3.	. .	. .	. .	44 3.29	22.24	0.00	IV.	7	13.33	35 47.34	6.6	2.58	44 25.53	17 2 46.5
72	10	. .	. .	12.3	25.	38.5	. .	. .	45 25.31	22.24	0.00	V.	10	5.45	46 49.94	6.7	3.22	45 47.55	17 13 49.9
73	10	. .	. .	. .	. .	. .	51.2	. .	46 25.21	22.24	0.00	VII.	4	3.12	16 33.69	6.7	1.54	46 47.45	16 43 31.9
74	10	. .	. .	. .	35.2	. .	. .	. .	48 35.06	22.24	0.00	IV.	1	6.17	3 10.10	6.7	0.83	48 57.30	30 7.6
75	9	. .	. .	58.	11.	. .	. .	. .	50 10.89	22.24	0.00	IV.	5	9.43	24 50.27	6.7	1.99	50 33.13	16 51 49.0
76	11	. .	. .	. .	. .	55.4	8.3	21.5	52 42.3	22.24	0.00	VII.	8	6.55	37 25.14	6.8	2.67	53 4.58	17 4 24.6
77	9	18.3	32.	44.5	. .	. .	. .	. .	56 57.82	22.25	0.00	III.	6	10.13	29 6.48	6.9	2.23	57 20.07	16 56 5.6
78	9	. .	. .	. .	. .	. .	. .	46.	1 57 6.83	22.25	0.00	VII,	7	8.55	33 26.95	6.9	2.46	1 57 29.08	17 0 26.3
79	10	. .	37.5	50.	. .	. .	. .	. .	2 0 3.39	+22.25	0.01	III.	7	11.6	−34 33.21	− 6.9	−2.52	2 0 25.64	−17 1 32.6

ZONE 198. OCTOBER 5. P. BELT, −20° 1′. D₀=−19° 35′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	14.6	27.4	40.9	. .	. .	22 35 27.59	+39.45	0.00	V.	7	8.36	−33 17.57	− 8.2	−2.51	22 36 7.04	−20 8 28.3
2	10	9.4	22.8	35.7	48.7	. .	. .	. .	38 49.08	39.44	0.00	IV.	4	13.425	21 51.83	8.0	1.82	39 28.52	19 57 1.7
3	10	24.4	. .	51.6	4.6	17.8	. .	. .	43 4.67	39.42	+0.01	.	8	13.13	40 35.95	7.7	2.95	43 44.10	20 15 46.6
4	8	. .	. .	. .	. .	. .	. .	34.6	43 54.43	39.42	0.00	VII.	3	9.24	14 42.21	7.7	1.38	44 33.85	19 49 51.3
5	7	. .	. .	. .	. .	. .	49.8	3.4	45 23.33	39.42	0.00	VII.	5	6.275	23 11.41	7.6	1.89	46 2.75	58 20.9
6	11	. .	. .	. .	23.1	. .	49.9	3.5	49 23.23	39.40	−0.01	VII.	3	2.345	11 15.73	7.4	1.18	50 2.62	19 46 24.3
7	10	. .	. .	2.3	15.4	28.8	41.9	. .	53 15.44	39.39	0.00	VI.	8	0.585	34 25.47	7.1	2.57	53 54.83	20 9 35.1
8	11	. .	. .	. .	. .	. .	. .	25.8	54 45.88	39.38	0.00	VII.	7	5.49	31 53.10	7.1	2.42	55 25.26	20 7 2.6
9	11	. .	. .	. .	. .	30.5	43.6	57.4	56 17.19	39.38	0.00	VII.	4	7.41	18 49.26	7.0	1.63	56 56.57	19 53 57.9
10	11	. .	. .	. .	. .	13.8	25.9	39.6	57 59.91	39.37	+0.01	VII.	8	13.305	40 44.78	6.9	2.96	22 58 39.29	20 15 54.6
11	11	. .	. .	. .	. .	. .	51.4	5.6	22 59 25.24	39.37	0.00	VII.	5	11.53	25 55.53	6.8	2.05	23 0 4.61	19 1 4.4
12	11	. .	50.4	2.9	. .	. .	. .	. .	23 2 16.38	39.36	0.00	III.	2	8.15	9 8.57	6.7	1.05	2 55.74	19 44 16.3
13	10	17.4	30.6	43.5	57.4	. .	. .	. .	5 57.14	39.35	0.00	IV.	2	2.24	6 11.61	6.5	0.87	6 36.49	41 19.0
14	7	. .	58.5	11.4	24.6	37.8	50.5	. .	8 24.44	39.34	0.00	VI.	1	12.33	6 19.57	6.4	0.88	9 3.78	41 26.9
15	9	. .	. .	. .	. .	9.4	21.7	35.6	9 55.51	39.33	0.00	VII.	1	9.35	4 33.77	6.3	0.78	10 34.84	39 40.9
16	8	. .	55.8	9.4	21.6	35.6	48.8	. .	12 22.15	39.33	0.00	VI.	3	6.54	13 26.74	6.2	1.29	13 1.48	48 34.2
17	8	32.6	46.	58.8	12.3	25.6	. .	. .	15 12.32	39.32	0.00	V.	4	11.28	20 43.98	6.1	1.73	15 51.64	19 55 51.8
18	11	56.4	10.5	23.1	. .	. .	. .	. .	17 36.77	39.31	0.00	III.	8	5.205	36 37.67	6.0	2.72	18 16.08	20 11 46.4
19	11	12.5	26.4	39.5	52.8	. .	. .	. .	23 52.61	39.29	0.00	IV.	4	5.5	17 30.89	5.7	1.55	24 31.90	19 52 38.1
20	11	. .	. .	. .	. .	14.6	27.5	. .	25 1.14	39.29	0.00	VI.	5	6.42	23 18.89	5.6	1.90	25 40.43	58 26.4
21	11	. .	. .	. .	1.9	15.5	28.3	41.6	31 1.80	39.27	0.00	VII.	4	6.45	19 21.55	5.4	1.59	31 41.07	54 28.5
22	9	. .	. .	. .	. .	. .	. .	46.5	32 6.33	39.27	0.00	VII.	3	8.55	14 2.63	5.4	1.33	32 45.60	49 9.4
23	10	. .	. .	. .	8.4	21.5	. .	. .	36 8.15	39.26	0.00	V.	1	3.455	1 53.67	5.2	0.60	36 47.41	19 36 59.5
24	11	1.9	15.9	28.3	. .	. .	. .	. .	38 42.14	39.25	0.00	III.	8	4.27	36 10.70	5.1	2.69	39 21.39	20 11 18.5
25	11	. .	. .	. .	. .	. .	. .	21.4	38 41.38	39.25	0.00	VII.	6	2.125	25 3.93	5.1	2.01	39 20.63	20 0 11.0
26	10	5.5	18.8	. .	. .	. .	. .	. .	42 45.49	39.24	0.00	II.	4	5.495	17 53.21	5.0	1.56	43 24.73	19 52 59.8
27	7	. .	. .	. .	. .	. .	23.6	37.5	42 57.20	39.24	0.00	VII.	2	8.48	9 24.96	5.0	1.05	43 36.44	44 31.0
28	11	. .	5.6	18.5	31.7	. .	. .	. .	46 31.80	39.23	0.00	IV.	5	5.44	22 49.76	4.9	1.86	47 11.03	19 57 56.5
29	10	8.8	23.1	35.5	. .	2.9	15.5	. .	51 49.31	39.22	0.00	VI.	9	11.57	39 57.52	4.8	2.93	52 28.53	20 15 5.2
30	11	. .	. .	. .	. .	45.5	58.8	12.6	23 56 32.43	+39.21	0.00	VII.	9	1.118	−39 31.01	− 4.7	−2.91	23 57 11.64	−20 14 38.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 5,	21	+ 36.68	l 0.119	− 0.41	+ 0.99	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(197) 70. Micrometer reading assumed as 7ʳ.65 instead of 8ʳ.65.
(198) 19. Transit over T. II assumed as at 26ˢ.4 instead of 24ˢ.4,
(198) 21. Micrometer reading assumed as 8ʳ.45 instead of 6ʳ.45.
(198) 29. Hor. thread assumed as 8 instead of 9.

ZONE 198. OCTOBER 5. P. BELT, −20° 1′. $D_\circ = -19° 35′ 0″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
31	12	. .	. .	. .	4.8	17.9	31.6	. .	0 0 4.78	+39.20	0.00	VI.	6	8.47	−28 23.02	− 4.6	−2.21	0 0 43.98	−20 3 29.8
32	3	. .	55.6	8.4	21.8	35.6	48.4	2.	6 21.85	39.18	0.00	VII.	2	11.16	10 39.59	4.5	1.12	7 1.03	19 45 45.2
33	12	. .	. .	. .	6.4	. .	32.8	45.9	8 6.20	39.18	0.00	VII.	8	8.56	38 26.10	4.4	2.84	8 45.38	20 13 33.3
34	7	. .	. .	. .	. .	. .	43.2	56.4	9 16.51	39.18	0.00	VII.	4	5.44	17 50.28	4.4	1.54	9 55.69	19 52 56.2
35	10	. .	44.6	57.6	10.9	23.9	36.9	. .	15 10.64	39.17	0.00	VI.	2	6.20	8 10.49	4.3	0.97	15 49.81	43 15.8
36	10	. .	55.4	8.5	21.7	35.4	. .	. .	0 17 21.69	+39.16	0.00	V.	1	7.26	− 3 4.86	− 4.3	−0.66	0 18 0.85	−19 38 9.8

ZONE 199. OCTOBER 6. B. BELT, −17° 31′. $D_\circ = -17° 5′ 0″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	50.	3.	16.	. .	. .	. .	22 38 15.90	+42.66	−0.01	IV.	2	3.41	− 6 50.43	− 3.01	−1.06	22 38 58.55	−17 11 54.5
2	9	. .	. .	. .	. .	. .	42.	55.	39 15.68	42.65	0.00	VII.	3	10.59	15 30.17	2.97	1.51	39 58.33	20 34.6
3	8	. .	. .	. .	. .	. .	. .	49.	40 9.82	42.65	+0.01	VII.	9	6.1	41 56.90	2.93	2.89	40 52.48	47 2.7
4	8	5.2	18.5	31.5	. .	. .	. .	. .	43 44.63	42.64	0.00	III.	5	3.56	21 55.28	2.81	1.84	44 27.27	26 59.9
5	9	. .	. .	21.	34.	. .	. .	. .	45 34.05	42.63	+0.01	IV.	9	11.16	44 35.97	2.74	3.04	46 16.69	49 41.8
6	9	. .	. .	32.5	. .	. .	. .	. .	48 45.68	42.62	+0.01	III.	8	12.52	40 25.35	2.63	2.81	49 28.31	45 30.8
7	8	. .	. .	57.	9.5	. .	. .	. .	50 9.61	42.62	0.00	VI.	3	11.31	15 46.43	2.59	1.52	50 52.23	20 50.5
8	8	. .	. .	58.	11.	. .	. .	. .	52 10.99	42.61	0.00	V.	8	4.5	35 59.62	2.53	2.58	52 53.60	41 4.7
9	6.7	. .	16.2	28.7	42.	. .	. .	. .	56 42.07	42.60	0.00	IV.	8	6.37	37 16.29	2.39	2.65	57 24.67	42 21.3
10	9	. .	. .	. .	. .	16.	. .	. .	58 2.85	42.59	0.00	VI.	5	3.59	21 56.71	2.35	1.84	22 58 45.44	27 0.9
11	8	. .	. .	27.3	40.	53.	. .	. .	22 59 40.02	42.59	0.00	V.	6	8.56	28 27.66	2.30	2.18	23 0 22.61	33 32.1
12	9	. .	. .	22.5	35.5	. .	. .	. .	23 2 35.33	42.58	0.00	V.	3	6.48	13 23.81	2.23	1.40	3 17.91	18 27.4
13	9	. .	38.	51.5	. .	. .	. .	. .	5 4.51	42.57	0.00	III.	8	10.16	39 6.70	2.16	2.74	5 47.08	44 11.6
14	7	. .	. .	. .	. .	. .	6.	19.	5 39.82	42.57	0.00	VII.	8	8.55	38 25.64	2.15	2.71	6 22.39	43 30.5
15	9	. .	. .	. .	. .	. .	6.	19.	6 39.73	42.56	0.00	VII.	5	9.21	24 38.94	2.12	1.98	7 22.29	29 43.0
16	9	. .	0.0	13.	. .	. .	. .	. .	9 25.90	42.56	−0.01	III.	1	9.34	4 49.42	2.05	0.95	10 8.45	9 52.4
17	9	. .	. .	7.5	20.5	. .	. .	. .	11 20.40	42.55	0.00	IV.	5	4.41	22 17.99	2.01	1.86	12 2.95	27 21.9
18	8	. .	27.5	40.2	. .	. .	. .	. .	12 53.47	42.55	0.00	III.	6	3.9	25 32.68	1.98	2.03	13 36.02	30 36.7
19	9	. .	. .	. .	. .	. .	44.	. .	13 17.89	42.54	0.00	VI.	6	5.2	26 29.58	1.97	2.08	14 0.43	31 33.6
20	9	. .	. .	. .	. .	52.	5.	. .	14 38.87	42.54	0.00	VI.	4	2.59	16 27.26	1.95	1.56	15 21.41	21 30.8
21	9	. .	. .	. .	. .	17.	. .	. .	21 3.89	42.52	0.00	V.	6	10.37	29 18.59	1.83	2.22	21 46.41	34 22.6
22	8	. .	48.	0.2	13.	. .	. .	. .	24 13.08	42.52	0.00	IV.	7	11.31	34 45.83	1.78	2.52	24 55.60	39 50.1
23	8	. .	. .	. .	20.3	33.	. .	. .	25 19.96	42.51	0.00	IV.	1	6.55	3 29.26	1.77	0.87	26 2.47	8 31.9
24	8	. .	. .	. .	. .	. .	. .	42.	26 2.86	42.51	0.00	VII.	9	11.12	44 33.72	1.76	3.05	26 45.37	49 38.5
25	9	. .	. .	40.3	54.	. .	. .	. .	28 53.06	42.50	0.00	IV.	8	8.41	38 18.81	1.71	2.70	29 36.16	43 23.2
26	9	. .	. .	51.	4.	. .	. .	. .	33 3.90	42.49	0.00	IV.	5	10.51	25 24.56	1.67	2.02	33 46.39	30 28.3
27	9	. .	. .	. .	23.	36.2	. .	. .	35 22.92	42.49	0.00	V.	1	9.32	4 48.41	1.65	0.94	36 5.41	9 51.0
28	7.8	3.	17.	29.5	42.	. .	. .	. .	39 42.80	42.48	0.00	IV.	6	5.33	26 45.31	1.61	2.09	40 25.28	31 49.0
29	9.10	38.	52.	5.	17.5	. .	. .	. .	43 17.88	42.47	0.00	IV.	8	7.26	37 40.99	1.60	2.68	44 0.35	42 45.3
30	9.10	. .	. .	. .	. .	36.3	49.	3.	44 23.23	42.47	0.00	VII.	6	8.00	27 59.21	1.59	2.17	45 5.70	33 3.0
31	9	. .	. .	. .	20.3	33.	. .	. .	48 19.97	42.46	0.00	VII.	2	6.58	8 29.50	1.58	1.13	49 2.43	13 32.2
32	9	11.3	25.	37.5	51.	. .	. .	. .	50 50.98	42.45	0.00	IV.	9	5.6	41 29.40	1.57	2.89	51 33.43	46 33.9
33	8	. .	. .	. .	0.5	13.9	26.	. .	52 0.34	42.45	0.00	VI.	6	5.31	26 44.20	1.57	2.09	52 42.79	31 47.9
34	8	. .	. .	. .	19.	32.	. .	59.	53 19.05	42.45	0.00	VII.	4	4.1	16 58.39	1.57	1.57	54 1.50	22 1.5
35	5.6	. .	. .	43.	55.2	9.	. .	. .	55 55.55	42.44	0.00	VI.	4	3.245	16 40.11	1.57	1.56	56 37.99	21 43.2
36	7	. .	. .	. .	. .	. .	. .	9.	56 29.74	42.44	0.00	VII.	8	4.17	36 5.46	1.57	2.60	57 12.18	41 9.6
37	9	. .	. .	. .	. .	17.	30.	43.5	23 58 3.97	+42.44	0.00	VII.	6	10.38	−29 18.88	− 1.57	−2.23	23 58 46.41	−17 34 22.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 6,	21	+ 40.01	l 0.116	− 0.50	+ 1.10	0.00

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(199) 10. Micrometer reading assumed as 3r.59 instead of 5r.59.

ZONE 200. OCTOBER 7. P. BELT, −19° 23′.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	11	27.6	41.8	54.6	. .	. .	. .	. .	22 42 7.97	+45.07	0.00	III.	7	8.2	−33 0.42	. .	−2.46	22 42 53.04	
2	10	. .	. .	10.4	23.2	36.5	49.5	. .	43 22.27	45.07	0.00	VI.	7	13.26	35 43.69	. .	2.62	44 8.34	
3	11	39.4	. .	5.6	18.4	32.4	46.5	. .	49 19.16	45.05	0.00	VI.	7	5.5	31 31.07	. .	2.37	50 4.21	
4	11	43.2	. .	9.4	23.9	. .	. .	. .	53 23.10	45.03	0.00	IV.	4	4.47	17 21.82	. .	1.57	54 8.13	
5	7	. .	. .	. .	. .	. .	. .	33.2	53 53.29	45.03	0.00	VII.	5	3.55	21 54.51	. .	1.82	54 38.32	
6	11	. .	. .	. .	. .	. .	23.6	. .	22 56 57.26	45.02	−0.01	VI.	3	2.43	11 20.17	. .	1.21	22 57 42.27	
7	9	21.4	35.6	48.5	. .	. .	. .	. .	23 0 1.81	45.01	0.00	III.	7	11.40	34 50.34	. .	2.58	23 0 46.82	
8	9	. .	. .	. .	22.6	. .	48.8	2.9	1 22.66	45.00	0.00	VII.	7	6.19	32 8.24	. .	2.42	2 7.66	
9	8	. .	9.4	22.2	35.4	. .	. .	. .	4 35.44	44.99	0.00	IV.	4	3.27	16 41.47	. .	1.52	5 20.43	
10	9	. .	. .	. .	. .	4.6	17.8	30.9	5 51.35	44.99	0.00	VII.	9	6.56	42 24.60	. .	2.92	6 36.34	
11	8	. .	52.6	5.6	18.8	31.6	44.7	. .	8 18.71	44.98	0.00	VI.	9	7.24	42 38.86	. .	2.94	9 3.69	
12	9	. .	. .	. .	49.8	2.9	16.8	29.9	9 50.00	44.97	0.00	VII.	8	13.50	40 54.34	. .	2.83	10 34.97	
13	9	. .	. .	4.5	17.4	30.8	43.8	57.5	12 17.48	44.97	0.00	VII.	5	6.11	23 3.10	. .	1.89	13 2.45	
14	8	48.4	2.8	14.9	. .	. .	. .	. .	15 28.66	44.96	0.00	III.	7	6.45	32 1.17	. .	2.41	16 13.62	
15	11	. .	. .	. .	10.5	23.6	37.6	. .	21 10.63	44.94	0.00	VI.	5	3.34	21 44.09	. .	1.81	21 55.57	
16	10	57.5	11.5	24.1	37.4	. .	. .	. .	26 37.50	44.92	0.00	IV.	5	10.26	25 11.96	. .	2.01	27 22.42	
17	10	. .	. .	. .	. .	. .	27.8	. .	32 1.35	44.91	+0.01	VI.	10	12.15	50 6.49	. .	3.49	32 46.27	
18	5	0.2	14.5	26.5	40.5	53.6	6.4	. .	35 40.16	44.90	0.00	VI.	2	5.399	7 50.27	. .	1.00	36 25.06	
19	9	. .	. .	15.4	28.	41.8	54.6	7.7	37 28.23	44.89	0.00	VII.	7	6.15	42 6.22	. .	2.91	38 13.12	
20	10	. .	. .	. .	59.9	13.5	26.2	39.9	39 0.04	44.89	+0.01	VII.	10	1.50	44 51.19	. .	3.17	40 44.94	
21	6.7	. .	. .	37.3	51.1	4.8	17.8	. .	42 51.16	44.88	+0.01	VI.	10	4.3	45 58.41	. .	3.24	43 36.05	
22	8	. .	. .	. .	. .	. .	36.6	49.9	44 10.13	44.88	0.00	VII.	6	2.15	25 5.20	. .	2.01	44 55.01	
23	9	. .	. .	. .	. .	. .	. .	56.9	45 16.94	44.87	0.00	VII.	4	6.29	18 12.98	. .	1.60	46 1.81	
24	12	. .	. .	. .	. .	. .	. .	6.6	46 26.89	44.87	0.00	VII.	8	3.49	35 51.30	. .	2.64	47 11.76	
25	11	. .	22.9	. .	. .	. .	. .	. .	48 49.34	44.86	0.00	II.	3	10.13	15 7.08	. .	1.43	49 34.20	
26	9	. .	17.8	30.5	43.5	57.8	. .	. .	50 43.94	44.86	0.00	V.	5	7.37	23 46.71	. .	1.93	51 28.80	
27	10	. .	. .	. .	. .	. .	. .	3.9	51 23.99	44.86	0.00	VII.	5	3.50	21 5.00	. .	1.77	52 8.85	
28	10	. .	. .	. .	18.4	. .	44.6	. .	56 18.27	44.84	−0.01	VI.	1	4.39	2 20.57	. .	0.67	57 3.10	
29	10	. .	. .	. .	37.4	50.4	3.9	. .	58 37.31	44.84	0.00	V.	8	13.14	40 36.43	. .	2.83	23 59 22.15	
30	10	. .	. .	. .	. .	. .	. .	14.6	23 59 34.84	44.84	0.00	VII.	7	6.50	32 23.87	. .	2.43	0 0 19.68	
31	10	. .	. .	. .	34.6	47.5	1.	. .	0 2 34.43	44.83	0.00	VI.	5	11.12	25 35.03	. .	2.04	3 19.26	
32	9	. .	. .	. .	. .	. .	. .	50.9	3 11.07	44.83	0.00	VII.	6	6.38	27 17.82	. .	2.13	3 55.90	
33	11	. .	39.9	52.2	. .	. .	. .	. .	7 5.79	44.82	0.00	III.	4	4.22	17 9.18	. .	1.53	6 50.61	
34	5	. .	. .	. .	. .	. .	. .	55.5	6 15.95	44.82	+0.01	VII.	10	6.35	47 14.91	. .	3.32	7 0.78	
35	11	. .	. .	. .	. .	20.5	. .	46.6	0 8 6.81	+44.82	0.00	VII.	2	3.9	− 6 34.03	. .	−0.93	0 8 51.63	

ZONE 201. OCTOBER 10. P. BELT, −16° 16′.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	37.4	49.9	3.8	15.5	. .	22 59 50.00	+54.07	−0.01	VI.	1	2.31	− 1 16.05	. .	−0.88	23 0 44.06	
2	10	47.7	1.5	14.6	. .	. .	. .	. .	23 2 27.22	54.06	0.00	III.	2	10.16	10 9.60	. .	1.29	3 21.28	
3	9	. .	. .	37.5	. .	3.8	16.4	29.4	7 50.48	54.04	0.00	VII.	6	7.51	27 54.67	. .	2.14	8 44.52	
4	10	. .	. .	. .	31.6	. .	58.4	10.8	9 31.77	54.04	0.00	VII.	1	6.38	3 20.47	. .	0.97	10 25.81	
5	9	. .	. .	. .	. .	5.6	18.4	31.6	10 52.61	54.03	0.00	VII.	10	4.41	46 17.47	. .	3.02	11 46.64	
6	3.4	. .	. .	40.4	52.4	6.6	18.5	. .	13 52.83	54.03	0.00	VI.	1	3.54	1 57.90	. .	0.91	14 46.86	
7	11	. .	. .	. .	. .	4.6	. .	. .	15 51.51	54.02	0.00	V.	4	4.36	17 16.26	. .	1.63	16 45.53	
8	8.9	. .	. .	59.9	11.9	25.6	38.2	. .	18 12.30	54.01	0.00	VI.	3	9.16	14 38.37	. .	1.50	19 6.31	
9	9	. .	. .	. .	. .	. .	. .	49.9	23 19 10.63	+54.01	0.00	VII.	3	15.11	−17 37.22	. .	−1.64	23 20 4.64	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 7,	22	+ 42.48	*l* 0.119	− 0.45	+ 1.03	0.00
10,	22	+ 52.53	*l* 0.133	− 0.50	+ 1.02	0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(200) 13. Double star.
(200) 19. Fine double star; same magnitude.
(200) 20. Minutes assumed as 40 instead of 39.
(200) 28. Transits over T.'s IV and VI assumed as 28^{s}.4 and 54^{s}.6 instead of 18^{s}.4 and 44^{s}.6.
(200) 33. Minutes assumed as 6 instead of 7.

ZONE 202. OCTOBER 10. P. BELT, −16° 16′. $D_\circ = -15^\circ\ 50'\ 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	48.8	1.8	14.9	1 43 35.84	+54.89	0.00	VII.	7	8.40	−33 19.40	− 4.67	−2.43	1 44 30.69	−16 23 26.5
2	10	. .	. .	. .	5.5	18.4	. .	. .	51 5.30	54.85	0.00	V.	1	2.23	1 12.08	5.78	0.78	52 0.15	15 51 18.6
3	10	12.4	25.5	38.3	51.4	4.1	16.4	30.6	54 51.16	54.86	0.00	VI.	3	3.275	11 42.64	6.36	1.31	55 46.02	16 1 50.3
4	12	. .	. .	. .	. .	. .	17.4	29.9	56 51.16	54.86	0.00	VII.	7	9.46	33 52.68	6.67	2.46	57 46.02	24 1.8
5	10	. .	. .	. .	. .	. .	39.2	52.8	1 58 13.42	54.86	0.00	VII.	4	9.13	19 35.73	6.86	1.72	1 59 8.28	9 44.3
6	10	. .	. .	. .	. .	35.5	48.8	. .	2 7 22.70	54.87	−0.01	VI.	10	12.57	50 27.70	8.30	3.35	2 8 17.56	40 39.4
7	11	. .	30.6	41.9	55.6	. .	. .	. .	9 55.79	54.87	−0.01	IV.	10	4.56	46 25.26	8.72	3.13	10 50.65	16 36 37.1
8	11	. .	18.2	. .	43.8	56.9	. .	. .	12 43.85	54.87	0.00	V.	2	4.35	7 17.65	9.18	1.08	13 38.72	15 57 27.9
9	10	. .	. .	. .	23.6	36.6	49.9	. .	14 23.64	54.88	+0.01	VI.	2	0.29	5 13.53	9.45	0.97	15 18.53	15 55 24.0
10	8.9	19.5	32.7	45.6	58.8	. .	. .	. .	17 58.58	54.88	0.00	IV.	2	11.47	10 55.50	10.03	1.26	18 53.46	16 1 6.8
11	11	. .	. .	32.6	. .	58.8	. .	24.6	20 45.38	54.89	0.00	.	2	6.17	8 9.10	10.48	1.12	21 40.27	15 58 20.7
12	11	. .	16.4	28.4	42.	. .	. .	. .	23 41.77	54.89	0.00	IV.	2	2.54	5 56.48	10.95	1.02	24 36.66	56 8.4
13	6	. .	. .	. .	. .	. .	30.6	44.1	24 4.66	54.89	+0.01	VII.	1	0.19	4 11.36	11.01	1.00	24 59.56	15 54 23.4
14	10	. .	. .	. .	. .	31.6	44.6	. .	34 18.65	54.91	−0.01	VI.	10	11.23	49 40.30	12.72	3.32	35 13.55	16 39 56.3
15	11	. .	. .	. .	58.8	. .	25.6	37.9	35 59.06	54.91	0.00	VII.	7	12.30	35 15.37	13.01	2.55	36 53.97	16 25 30.9
16	10	. .	28.6	40.4	53.8	. .	. .	. .	38 53.77	54.92	+0.01	IV.	1	9.49	4 57.00	13.49	0.95	39 48.70	15 55 11.4
17	10	. .	. .	. .	. .	. .	. .	49.9	39 10.52	54.92	0.00	VII.	2	10.55	10 29.07	13.52	1.24	40 5.44	16 0 43.8
18	11	. .	. .	43.4	56.6	9.8	22.8	. .	42 56.54	54.93	0.00	VI.	2	10.27	10 15.07	14.18	1.23	43 51.47	0 30.5
19	10	. .	. .	50.8	3.8	16.2	. .	. .	49 3.53	54.94	0.00	V.	6	11.39	29 49.84	15.24	2.26	49 58.47	20 7.3
20	9	. .	. .	. .	. .	17.8	29.9	43.8	50 4.52	54.94	0.00	VII.	8	5.12	36 33.21	15.42	2.62	50 59.46	26 51.2
21	10	. .	. .	55.4	8.5	21.5	34.4	. .	52 8.49	54.95	−0.01	VI.	10	11.46	49 51.91	15.76	3.34	53 3.43	16 40 11.0
22	10	. .	. .	23.5	. .	48.5	1.6	. .	2 54 35.72	+54.95	+0.01	VI.	1	3.28	− 1 44.65	−16.22	−0.78	2 55 30.68	−15 52 1.7
ZONE 203. OCTOBER 10. P. BELT, −19° 23′. $D_\circ = -18^\circ\ 57'\ 40''$.																			
1	8	16.4	29.8	43.4	55.6	9.8	. .	. .	3 9 56.13	+54.86	−0.01	V.	2	7.195	− 8 40.58	− 7.48	−0.98	3 10 50.98	−19 6 29.0
2	9	. .	. .	. .	. .	15.6	29.8	42.6	12 2.83	54.87	0.00	VII.	6	3.27	25 41.50	7.94	2.04	12 57.70	23 31.5
3	10	22.6	36.4	48.6	. .	. .	. .	. .	15 2.57	54.88	+0.01	III.	9	3.00	40 25.83	8.61	2.99	15 57.46	38 17.4
4	9	. .	13.5	25.5	39.	. .	. .	. .	16 39.01	54.88	−0.01	IV.	1	5.1	3 31.77	8.98	0.66	17 33.88	1 21.4
5	10	52.8	7.4	19.4	. .	. .	. .	. .	18 33.11	54.89	0.00	III.	6	6.37	27 17.56	9.40	2.15	19 28.00	25 9.1
6	10	. .	. .	16.5	29.5	43.6	. .	. .	19 29.70	54.89	0.00	V.	3	10.47	15 24.32	9.63	1.38	20 24.59	13 15.3
7	10	. .	. .	. .	. .	. .	23.6	37.5	20 57.36	54.89	0.00	VII.	2	15.4	12 34.56	9.96	1.22	21 52.25	19 10 25.7
8	10	. .	. .	. .	8.4	20.6	33.4	. .	23 7.51	54.90	−0.01	VI.	1	2.18	1 9.46	10.45	0.52	24 2.40	18 59 0.4
9	12	. .	. .	41.6	. .	. .	. .	. .	25 54.89	54.91	0.00	III.	8	5.1	36 27.84	11.08	2.75	26 49.80	19 34 21.7
10	8	52.6	5.8	19.	32.6	. .	. .	. .	28 32.22	54.91	−0.01	IV.	1	9.50	4 57.50	11.68	0.75	29 27.12	2 49.9
11	12	. .	23.4	36.4	. .	2.9	. .	. .	30 49.61	54.92	0.00	V.	3	13.12	16 37.42	12.23	1.46	31 44.53	14 31.1
12	10	. .	. .	. .	. .	. .	16.8	30.6	31 50.62	54.92	0.00	VII.	6	14.37	31 19.34	12.46	2.41	32 45.54	29 14.2
13	10	. .	6.2	18.9	32.4	45.6	. .	. .	34 32.37	54.93	0.00	V.	7	4.3	30 59.90	13.05	2.39	35 27.30	28 55.3
14	10	. .	. .	. .	. .	. .	. .	45.6	35 5.58	54.93	0.00	VII.	3	7.6	13 32.64	13.22	1.26	36 0.51	11 27.1
15	10	. .	. .	. .	. .	. .	49.9	3.8	37 23.80	54.94	0.00	VII.	8	9.1	38 28.62	13.76	2.87	38 18.74	36 25.3
16	10	. .	. .	15.8	. .	42.8	. .	. .	39 29.35	54.95	0.00	V.	8	9.32	39 14.19	14.24	2.90	40 24.30	37 11.9
17	9	56.6	10.4	23.6	36.2	. .	. .	. .	42 36.49	54.96	0.00	IV.	3	8.36	14 18.30	14.97	1.31	43 31.45	12 14.6
18	12	. .	. .	. .	. .	47.4	0.	14.6	43 34.15	54.96	0.00	VII.	5	7.54	23 55.04	15.21	1.93	44 29.11	21 52.2
19	8	. .	. .	. .	25.4	. .	51.6	. .	49 25.26	54.98	−0.01	VI.	1	2.57	1 29.13	16.59	0.53	50 20.23	59 26.2
20	9	44.6	58.8	10.8	23.8	. .	. .	. .	3 52 24.51	54.99	+0.01	.	9	7.3	42 28.39	17.31	3.14	3 53 19.51	40 28.8
21	11	. .	. .	7.7	20.2	34.	46.6	. .	4 1 20.49	55.03	0.00	VI.	7	10.3	34 1.34	19.45	2.58	4 2 15.52	32 3.4
22	9	. .	. .	. .	. .	. .	50.4	4.6	4 2 24.38	+55.03	0.00	VII.	5	12.58	−26 28.32	−19.72	−2.10	4 3 19.41	−19 24 30.1

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848. h. Oct. 10, 22	s. + 52.53	s. *l* 0.133	s. − 0.50	s. + 1.02	s. 0.00

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848. h. m.	in.	°	°

REMARKS.

(202) 12. Micrometer reading assumed as 1$^{\text{r}}$.54 instead of 2$^{\text{r}}$.54.
(202) 13. Micrometer reading assumed as 1$^{\text{t}}$ 8$^{\text{r}}$.19 instead of 1$^{\text{t}}$ 0$^{\text{r}}$.19.
(203) 1. Double.
(203) 16. Micrometer reading assumed as 10$^{\text{r}}$.32 instead of 9$^{\text{r}}$.32.

ZONE 204. OCTOBER 12. P. BELT, −15° 38½′. D$_0$=−15° 13′ 10″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	45.4	58.5	. .	. .	. .	. .	21 33 11.29	+ 4.80	0.00	III.	4	6.5	−18 1.13	− 3.40	−1.67	21 33 16.09	−15 31 16.2
2	8	6.4	19.4	32.6	45.4	58.2	. .	. .	35 45.29	4.79	−0.01	V.	3	5.275	12 43.21	3.36	1.43	35 50.07	25 58.0
3	11	. .	. .	. .	. .	. .	21.6	34.9	38 55.71	4.78	−0.01	VII.	2	6.22	8 11.41	3.31	1.24	39 0.48	21 26.0
4	11	. .	. .	. .	55.4	8.4	21.6	34.6	40 55.52	4.77	0.00	VI.	6	13.16	30 38.68	3.28	2.27	41 0.29	43 54.2
5	8	. .	. .	31.6	43.7	56.8	. .	. .	46 44.06	4.74	+0.01	V.	9	11.14	44 34.94	3.21	2.92	46 48.81	57 51.1
6	9	53.1	6.4	19.2	. .	. .	. .	. .	49 32.35	4.74	+0.01	III.	8	5.48	36 51.55	3.18	2.56	49 37.10	50 7.3
7	12	. .	. .	. .	. .	. .	. .	35.5	49 56.60	4.73	0.00	VII.	8	1.59	34 55.89	3.17	2.47	50 1.33	48 11.5
8	10	30.9	44.6	56.8	9.6	. .	. .	. .	55 9.96	4.71	0.00	IV.	6	6.36	27 17.09	3.13	2.11	55 14.67	40 32.3
9	10	19.5	33.1	45.6	58.4	. .	. .	. .	57 58.62	4.70	0.00	IV.	5	8.24	24 10.44	3.11	1.96	58 3.32	37 25.5
10	8	. .	. .	11.4	24.5	37.8	. .	. .	21 59 24.32	4.70	−0.01	V.	1	0.51	0 20.49	3.10	0.85	21 59 29.01	13 14.4
11	10	. .	0.2	12.8	25.4	. .	. .	. .	22 6 25.78	4.67	0.00	IV.	8	6.27	37 11.24	3.08	2.57	22 6 30.45	50 26.9
12	11	. .	9.4	21.8	. .	. .	. .	. .	8 35.06	4.66	0.00	III.	6	10.44	29 22.12	3.07	2.21	8 39.72	42 37.4
13	11	. .	. .	. .	. .	. .	. .	58.9	11 19.96	4.66	0.00	VII.	7	6.29	32 13.34	3.06	2.34	11 24.62	45 28.7
14	12	. .	. .	. .	51.6	. .	. .	. .	12 51.46	4.65	0.00	IV.	6	6.12	27 4.98	3.06	2.10	12 56.11	40 20.1
15	11	. .	. .	. .	. .	. .	. .	46.9	13 7.93	4.65	0.00	VII.	7	2.33	30 14.34	3.06	2.25	13 12.58	43 29.6
16	11	. .	. .	58.3	11.5	24.7	37.4	50.8	15 11.53	4.95	0.00	VII.	6	9.12	28 35.53	3.06	2.17	15 16.18	41 50.8
17	11	12.4	25.5	38.5	. .	. .	. .	. .	17 51.51	4.64	0.00	III.	6	10.48	29 24.13	3.06	2.21	17 56.15	42 39.4
18	8	. .	. .	. .	. .	. .	. .	. .	. . .	. .	−0.01	VII.	2	.	4 58.79	. .	1.07		
19	8	. .	. .	. .	. .	. .	. .	49.9	22 10.61	4.61	−0.01	VII.	2	5.28	7 44.17	3.07	1.19	22 15.21	20 58.4
20	11	. .	. .	. .	. .	. .	. .	4.9	23 25.91	4.61	0.00	VII.	6	8.1	27 59.73	3.08	2.14	23 30.52	41 14.9
21	10	. .	. .	. .	19.4	32.6	45.6	. .	22 26 19.55	+ 4.60	+0.01	.	9	2.30	−40 10.74	− 3.09	−2.72	22 26 24.16	−15 53 26.6

ZONE 205. OCTOBER 14. P. BELT, −15° 38½′. D$_0$=−15° 14′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	45.9	59.8	12.	24.9	37.9	. .	. .	20 46 25.15	+ 8.71	0.00	V.	8	5.35	−36 45.00	+ 9.57	−1.53	20 46 33.86	−15 50 56.96
2	9	54.9	8.4	20.2	33.6	. .	. .	. .	49 33.78	8.69	0.00	IV.	6	11.53	29 56.92	9.90	2.22	49 42.47	44 9.24
3	10	5.6	19.6	. .	. .	. .	. .	. .	51 45.20	8.68	0.00	II.	6	7.9	27 33.63	10.12	2.13	51 53.88	41 45.64
4	9	32.6	45.7	58.9	11.8	. .	. .	. .	53 11.57	8.68	−0.01	IV.	1	7.16	3 39.85	10.27	1.05	53 20.24	15 17 50.63
5	10	. .	. .	. .	. .	16.4	29.9	42.9	54 3.91	8.67	+0.01	VII.	10	10.39	49 18.01	10.36	3.12	54 12.59	16 3 30.77
6	10	32.5	45.9	57.8	. .	. .	. .	. .	57 11.31	8.66	0.00	III.	3	11.36	15 49.04	10.68	1.59	20 57 19.97	15 29 59.95
7	10	20.2	33.6	46.8	59.2	10.9	. .	. .	20 59 59.35	8.64	0.00	V.	3	12.12	16 7.18	10.96	1.60	21 0 7.99	30 17.82
8	11	49.4	3.6	15.4	. .	. .	. .	. .	21 3 28.75	8.63	0.00	III.	4	9.46	19 52.57	11.31	1.77	3 37.38	34 3.03
9	9	. .	. .	. .	. .	7.9	20.5	33.7	3 54.71	8.63	0.00	VII.	4	14.375	22 19.29	11.35	1.86	4 3.34	36 52.48
10	10	4.9	17.6	. .	. .	. .	. .	. .	6 43.88	8.62	0.00	II.	6	12.44	30 22.55	11.63	2.25	6 52.50	44 33.17
11	6.5	. .	. .	. .	. .	30.2	43.6	56.7	7 17.58	8.61	0.00	VII.	7	8.32	33 15.37	11.69	2.38	7 26.19	47 26.06
12	9	24.5	38.6	50.8	3.9	16.5	. .	. .	13 3.73	8.59	0.00	V.	7	8.9	33 3.96	12.24	2.37	13 12.32	47 14.09
13	10	. .	. .	. .	. .	. .	18.5	31.5	13 52.52	8.58	0.00	VII.	4	8.10	19 3.97	12.33	1.73	14 1.10	33 13.37
14	11	. .	. .	. .	. .	. .	. .	47.9	15 8.88	8.58	0.00	VII.	6	4.2	25 59.22	12.44	2.05	15 17.46	40 8.83
15	9	22.6	36.5	48.8	1.9	. .	. .	. .	18 2.02	8.56	+0.01	II.	8	10.46	39 21.76	12.72	2.66	18 10.59	53 31.70
16	12	. .	. .	. .	. .	. .	. .	19.9	19 40.70	8.56	0.00	VII.	3	9.28	14 44.29	12.88	1.53	19 49.26	28 52.94
17	10	. .	. .	. .	33.6	46.2	58.8	. .	21 33.21	8.55	0.00	VI.	7	10.45	34 22.55	13.05	2.43	21 41.76	48 31.93
18	10	. .	. .	4.9	. .	25.6	. .	. .	26 12.47	8.53	−0.01	V.	1	6.43	3 23.19	13.49	1.03	26 20.99	17 30.73
19	10	13.5	26.5	39.2	. .	. .	. .	. .	29 52.36	8.51	0.00	III.	5	1.37	20 45.19	13.82	1.81	30 0.87	34 53.18
20	9	28.5	41.6	53.8	. .	. .	. .	. .	33 7.23	8.50	0.00	III.	4	4.21	17 8.68	14.10	1.64	33 15.73	31 16.22
21	10	. .	. .	. .	. .	. .	. .	25.9	33 46.56	8.49	−0.01	VII.	1	7.43	3 53.25	14.16	1.05	33 55.04	18 0.14
22	8	. .	. .	28.3	40.8	54.6	7.5	20.6	35 41.24	8.49	−0.01	VII.	2	13.39	11 52.04	14.33	1.41	35 49.72	25 59.12
23	10	. .	. .	. .	. .	39.4	. .	. .	37 26.45	8.48	0.00	V.	7	12.3	35 1.94	14.48	2.46	37 34.93	49 9.92
24	10	. .	. .	. .	. .	5.8	18.2	31.6	21 38 52.47	+ 8.47	−0.01	VII.	2	6.43	− 8 22.00	+14.60	−1.25	21 39 0.93	−15 22 28.65

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 12,	22	+ 1.93	*l* 0.126			
Oct. 14,	22	+ 5.59	*l* 0.107			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	THERMOM. Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(204) 10. Micrometer reading assumed as $0^{r}.01$ instead of $0^{r}.51$.
(205) 9. Micrometer reading assumed as $14^{r}.375$ instead of $10^{r}.375$.
(205) 18. One of the transit observations (assumed T. V) in error by 5^{s}.

Zone 205. October 14. P. Belt, −15° 38½′. $D_0 = -15° 14' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
25	10	. .	26.5	38.6	51.8	5.2	17.5	. .	21 40 51.93	+ 8.46	0.00	VI.	7	11.43	−34 51.79	+14.78	−2.46	21 41 0.39	−15 48 59.47
26	12	. .	57.4	10.4	. .	. .	. .	. .	45 23.40	8.44	0.00	III.	7	9.12	33 35.72	15.16	2.40	45 31.84	47 42.96
27	9	. .	. .	27.5	40.7	53.6	. .	. .	46 40.62	8.44	+0.01	V.	9	9.20	43 37.45	15.27	2.86	46 49.07	57 45.04
28	9	49.8	3.7	15.5	. .	. .	. .	. .	49 29.12	8.43	0.00	III.	8	4.6	36 0.13	15.51	2.51	49 37.55	50 7.13
29	10	. .	. .	. .	. .	. .	18.9	31.9	49 53.01	8.42	0.00	VII.	8	0.14	34 2.95	15.54	2.42	50 1.43	48 9.83
30	12	. .	26.8	39.	. .	. .	. .	. .	53 52.35	8.41	0.00	III.	6	7.41	27 49.83	15.85	2.13	54 0.76	41 56.11
31	9	. .	40.8	52.9	6.4	19.4	. .	. .	55 6.31	8.40	0.00	V.	6	4.43	26 20.08	15.95	2.06	55 14.71	40 26.19
32	8	15.6	29.9	41.9	54.8	. .	. .	. .	21 57 54.72	8.39	0.00	IV.	5	6.43	23 19.51	16.18	1.92	21 58 3.11	37 25.25
33	11	. .	. .	. .	. .	. .	53.1	. .	22 0 27.29	8.38	−0.01	VI.	2	6.46	8 23.64	16.37	1.24	22 0 35.66	22 28.51
34	12	. .	. .	. .	. .	. .	. .	36.4	7 57.15	8.34	−0.01	VII.	2	11.52	10 57.81	16.94	1.35	8 5.48	25 2.22
35	8	43.4	56.4	9.8	22.4	34.9	. .	. .	6 22.43	8.35	0.00	V.	8	4.46	36 20.30	16.83	2.53	6 30.78	50 26.00
36	9	51.4	5.8	18.5	31.4	. .	. .	. .	8 31.04	8.34	0.00	IV.	6	8.43	28 21.12	16.98	2.16	8 39.38	42 26.30
37	10	. .	50.8	3.9	16.4	29.5	41.9	. .	10 16.50	8.34	0.00	VI.	7	5.11	31 34.12	17.11	2.31	10 24.84	45 39.32
38	11	8.8	. .	35.8	. .	. .	. .	. .	12 48.34	8.33	0.00	III.	6	4.27	26 12.01	17.29	2.06	12 56.67	40 16.78
39	10	. .	. .	. .	. .	. .	29.9	42.9	13 3.98	8.32	0.00	VII.	7	1.55	29 24.87	17.30	2.22	13 12.30	43 29.79
40	9	. .	42.9	55.5	8.4	21.4	. .	. .	15 8.49	8.32	0.00	V.	6	7.39	27 48.83	17.45	2.13	15 16.81	41 53.51
41	10	8.4	22.6	34.6	47.5	0.9	. .	. .	17 47.80	8.30	0.00	V.	6	9.14	28 36.73	17.65	2.17	17 56.10	42 41.25
42	9	28.5	41.6	54.5	7.6	. .	. .	. .	22 7.39	8.29	−0.01	IV.	2	3.49	6 54.47	17.94	1.16	22 15.67	20 57.69
43	10	. .	. .	. .	. .	. .	13.7	26.8	22 47.69	8.28	−0.01	VII.	1	11.35	5 50.20	17.98	1.08	22 55.96	19 53.33
44	11	. .	50.5	2.9	13.9	. .	41.4	. .	26 15.97	8.27	+0.01	VI.	8	10.29	39 13.18	18.21	2.67	26 24.25	53 17.64
45	12	. .	. .	52.9	. .	. .	. .	. .	29 5.82	8.26	0.00	III.	6	13.50	30 55.89	18.40	2.28	29 14.08	44 59.77
46	11	8.9	21.9	34.8	. .	. .	. .	. .	31 47.74	8.25	−0.01	III.	2	10.49	5 27.25	18.57	1.09	31 55.98	19 29.77
47	11	. .	. .	. .	. .	26.4	39.2	52.9	32 13.47	8.25	−0.01	VI.	2	7.44	8 52.88	18.59	1.24	32 21.71	22 55.53
48	9	35.4	48.8	. .	. .	. .	. .	. .	36 14.64	8.23	0.00	II.	4	7.19	13 39.36	18.83	1.47	36 22.87	27 42.10
49	10	. .	. .	. .	. .	. .	. .	49.9	36 10.63	8.23	−0.01	VII.	2	9.10	9 36.12	18.83	1.28	36 18.85	23 38.57
50	10	. .	58.9	11.	24.4	37.5	50.6	. .	39 24.52	8.22	+0.01	VI.	9	4.35	41 13.68	19.02	2.77	39 32.75	55 17.43
51	10	. .	. .	. .	27.4	40.9	53.8	. .	42 27.70	8.21	0.00	VI.	5	4.54	22 24.46	19.19	1.88	42 35.91	36 27.15
52	10	39.9	52.6	5.6	18.5	. .	. .	. .	46 18.68	8.19	0.00	IV.	7	10.44	34 22.14	19.42	2.44	46 26.87	48 25.16
53	8	45.5	59.9	12.4	. .	. .	. .	. .	48 25.34	8.18	0.00	III.	7	8.43	33 21.10	19.53	2.40	48 33.52	47 23.97
54	9	. .	. .	. .	39.9	52.9	. .	. .	49 39.77	8.18	−0.01	V.	1	1.34	0 47.38	19.60	0.87	49 47.94	14 48.65
55	9	. .	. .	. .	. .	49.9	. .	. .	52 36.77	8.17	−0.01	V.	1	1.19	0 39.81	19.75	0.86	52 44.93	14 40.92
56	11	18.6	32.6	44.8	. .	. .	. .	. .	54 58.15	8.16	+0.01	III.	9	4.45	41 18.79	19.87	2.78	55 6.32	55 21.70
57	11	5.8	18.6	31.5	43.6	. .	. .	. .	56 44.24	8.15	−0.01	IV.	2	10.0	10 1.55	19.96	1.29	56 52.38	24 2.88
58	11	. .	. .	. .	. .	41.6	54.5	7.9	57 28.78	8.15	0.00	VII.	8	8.10	38 2.97	20.01	2.62	57 36.93	52 5.58
59	11	. .	. .	. .	. .	. .	. .	14.6	22 58 35.58	8.14	0.00	VII.	6	4.56	26 26.45	20.06	2.07	22 58 43.72	40 28.46
60	9	. .	10.2	22.6	35.7	. .	. .	. .	23 0 35.81	8.14	0.00	IV.	8	6.26	37 10.74	20.17	2.58	23 0 43.95	51 13.15
61	9	. .	. .	. .	. .	1.9	14.6	27.7	1 48.63	8.13	−0.01	VII.	1	0.33	0 16.43	20.23	0.83	1 56.75	14 17.03
62	10	. .	. .	. .	. .	. .	38.8	51.5	3 12.81	8.13	0.00	VII.	9	3.39	40 45.32	20.30	2.76	3 20.94	54 47.78
63	10	. .	. .	. .	. .	55.6	9.4	. .	5 43.04	8.12	--0.01	VI.	1	3.8	1 34.70	20.42	0.89	5 51.15	15 35.17
64	11	. .	. .	. .	. .	. .	. .	9.9	7 30.60	8.11	0.00	VII.	2	4.32	7 15.95	20.51	1.16	7 38.71	21 16.60
65	12	. .	56.2	. .	. .	. .	. .	. .	10 17.28	8.10	0.00	II.	8	10.31	39 14.19	20.64	2.68	10 25.38	53 16.23
66	9	. .	13.4	25.5	38.5	51.4	4.6	17.4	14 38.68	8.09	0.00	VII.	8	7.6	37 30.70	20.83	2.60	14 46.77	51 32.47
67	12	. .	. .	. .	20.4	. .	. .	. .	18 20.26	8.07	0.00	IV.	4	5.41	17 49.04	21.01	1.65	18 28.33	31 49.68
68	12	. .	5.6	18.6	31.5	. .	. .	. .	23 31.41	8.06	0.00	IV.	4	4.34	17 15.27	21.22	1.63	23 39.47	31 15.68
69	11	. .	. .	. .	. .	. .	. .	27.4	23 48.33	8.06	0.00	VII.	5	7.40	23 48.04	21.23	1.94	23 56.39	37 48.75
70	12	. .	. .	. .	. .	. .	39.9	51.5	25 12.31	8.05	0.00	VII.	7	11.18	34 39.06	21.29	2.46	25 20.36	15 48 40.23
71	10	. .	. .	. .	. .	4.9	17.6	. .	26 1.86	8.05	+0.01	VI.	10	12.18	50 8.03	21.35	3.22	27 9.92	16 4 9.90
72	9	27.1	41.5	. .	. .	. .	. .	. .	30 6.99	8.04	0.00	II.	8	14.24	41 11.66	21.48	2.79	30 15.03	15 55 12.97
73	5.4	10.5	23.7	36.5	49.8	2.9	. .	. .	23 34 49.54	+ 8.02	0.00	V.	2	6.48	− 8 24.71	+21.65	−1.21	23 34 57.56	−15 22 24.27

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1848.	h, m.	in.	°	°

REMARKS.

(205) 39. Micrometer reading assumed as $0^r.55$ instead of $1^r.55$.
(205) 44. Transit observations over T. IV assumed as $15^s.9$ instead of $13^s.9$.
(205) 46. Hor. thread assumed as 1 instead of 2.
(205) 48. Hor. thread assumed as 3 instead of 4.
(205) 65. Transit over T. II assumed as $51^s.2$ instead of $56^s.2$.
(205) 70. Transit over T. VI assumed as $37^s.9$ instead of $39^s.9$.
(205) 71. Transits over T.'s V and VI assumed as $14^s.9$ and $27^s.6$ instead of $4^s.9$ and $17^s.6$, and minutes as 27 instead of 26.

Zone 205. October 14. P. Belt, −15° 38½′. $D_\circ = -15° 14′ 20″$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
74	9	. .	. .	23.6	36.4	49.5	. .	. .	23 36 36.26	+ 8.02	−0.01	V.	1	2.1	− 1 0.99	+21.70	−0.86	23 36 44.27	−15 15 0.15
75	10	. .	. .	. .	59.9	12.6	25.8	. .	37 59.76	8.01	0.00	VI.	5	2.25	21 9.32	21.75	1.81	38 7.77	35 9.38
76	12	. .	. .	. .	. .	45.8	58.4	. .	39 32.65	8.01	0.00	VI.	2	8.56	9 29.19	21.80	1.26	39 40.66	23 28.65
77	12	. .	. .	. .	. .	32.6	45.5	58.4	41 19.57	8.00	0.00	VII.	6	13.53	30 57.21	21.86	2.29	41 27.57	44 57.64
78	9	. .	. .	. .	. .	. .	0.9	13.9	42 35.01	7.99	0.00	VII.	7	11.49	34 54.70	21.90	2.48	42 43.00	48 55.28
79	12	. .	14.6	. .	39.5	. .	. .	. .	47 39.98	7.98	0.00	IV.	6	5.42	26 49.85	22.05	2.09	47 47.96	40 49.89
80	11	55.5	. .	21.6	34.6	47.9	. .	. .	52 34.45	7.97	0.00	V.	2	1.2	5 30.24	22.18	1.05	52 42.42	19 29.11
81	10	. .	32.6	45.5	. .	. .	. .	. .	54 58.61	7.96	0.00	III.	8	9.00	38 28.37	22.23	2.67	55 6.57	52 28.81
82	7	. .	. .	. .	38.8	. .	. .	. .	23 57 38.66	7.96	−0.01	IV.	1	2.42	1 21.69	22.29	0.86	23 57 46.61	15 20.26
83	9	49.9	3.6	15.9	28.8	. .	. .	. .	0 0 29.02	7.95	0.00	IV.	6	3.5	25 30.68	22.35	2.02	0 0 36.97	39 30.35
84	10	13.6	26.5	39.5	51.8	. .	. .	. .	2 39.13	7.94	0.00	IV.	1	6.23	3 13.12	22.39	0.95	2 47.07	17 11.68
85	5	. .	. .	13.8	26.4	39.5	. .	. .	4 26.60	7.94	0.00	.	10	4.4	45 59.04	22.41	3.05	4 34.54	59 59.68
86	9	14.6	27.4	40.	52.6	. .	. .	. .	6 53.11	7.93	0.00	IV.	6	0.34	24 14.55	22.46	1.96	7 1.04	38 14.05
87	10	. .	. .	20.5	33.5	. .	. .	. .	8 33.23	7.93	0.00	IV.	1	8.44	4 24.23	22.48	0.99	8 41.16	18 22.74
88	11	. .	. .	. .	. .	. .	33.5	46.8	9 7.67	7.93	0.00	VII.	4	8.4	19 0.95	22.49	1.71	9 15.60	33 0.17
89	10	58.5	. .	24.6	37.4	. .	. .	. .	0 11 37.46	+ 7.92	0.00	.	5	11.55	−25 56.83	+22.53	−2.04	0 11 45.38	−15 39 56.34

Zone 206. October 18. P. Belt, −18° 46′. $D_\circ = -18° 18′ 10″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	48.8	3.5	15.5	28.9	. .	. .	. .	23 33 28.72	+17.97	0.00	IV.	7	7.58	−32 58.42	− 8.78	−2.45	23 33 46.69	−18 51 19.7
2	7	. .	40.4	52.5	5.7	18.8	32.3	. .	36 5.80	17.96	0.00	VI.	10	8.26	48 11.04	9.07	3.31	36 23.76	19 6 33.4
3	10	. .	. .	29.9	42.9	56.4	9.8	. .	42 43.20	17.94	+0.01	VI.	10	10.22	49 9.53	9.81	3.36	43 1.15	19 7 32.7
4	11	. .	. .	. .	16.4	29.8	. .	. .	44 16.44	17.94	0.00	V.	7	8.26	33 12.52	9.98	2.46	44 34.38	18 51 35.0
5	10	45.6	59.6	11.9	24.9	38.7	. .	3.9	47 25.11	17.93	0.00	VII.	4	12.47	21 23.58	10.35	1.79	47 43.04	39 45.7
6	11	. .	. .	. .	. .	18.9	32.7	45.8	23 52 6.10	+17.92	0.00	VII.	7	6.52	−32 24.88	−10.91	−2.42	23 52 24.02	−18 50 48.2

Zone 207. October 18. P. Belt, −18° 46′. $D_\circ = -18° 19′ 40″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	7.4	20.5	33.6	46.6	59.9	1 49 20.33	+17.73	0.00	VI.	5	9.185	−24 37.80	− 7.06	−1.98	1 49 38.06	−18 44 26.8
2	10	. .	. .	23.1	36.4	49.5	2.9	. .	51 36.34	17.74	0.00	VI.	6	7.12	27 35.12	7.95	2.15	51 54.08	47 25.2
3	12	. .	. .	23.6	35.8	49.5	. .	. .	1 53 36.25	17.74	0.00	V.	7	6.17	32 7.47	8.75	2.41	1 53 53.99	51 58.6
4	5	. .	. .	8.8	21.6	35.4	. .	. .	2 1 21.74	17.75	0.00	V.	2	9.10	9 36.30	11.82	1.11	2 1 39.49	29 29.2
5	8	. .	43.6	56.5	9.4	23.5	. .	. .	4 9.66	17.75	+0.01	V.	2	4.19	7 9.57	12.95	0.97	4 27.42	27 3.5
6	9	. .	. .	. .	. .	. .	. .	20.5	4 40.52	17.75	+0.01	VII.	2	2.28	6 13.35	13.15	0.92	4 58.28	26 7.4
7	10	. .	. .	. .	28.5	41.9	54.9	8.8	6 28.66	17.75	0.00	VII.	5	0.58	20 25.27	13.89	1.73	6 46.41	40 20.9
8	11	. .	. .	. .	23.8	37.4	49.9	. .	8 23.82	17.75	0.00	VI.	8	4.9	36 1.55	14.64	2.64	8 41.57	55 58.8
9	11	. .	11.9	24.5	37.8	. .	. .	. .	12 37.83	17.75	0.00	IV.	5	5.15	22 35.13	16.34	1.86	12 55.58	42 33.3
10	8	. .	. .	. .	. .	56.9	. .	. .	14 43.55	17.74	+0.01	V.	1	1.39	0 49.89	17.19	0.61	15 1.30	20 47.7
11	10	. .	. .	. .	. .	. .	. .	42.9	2 17 3.27	+17.74	0.00	VII.	7	3.25	−30 40.49	−18.15	−2.33	2 17 21.01	−18 50 41.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 18,	22	+ 15.52	*l*0.155			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(205) 84. Transits over T.'s II–V assumed as recorded over T.'s I–IV.

ZONE 208. OCTOBER 20. P. BELT, −18° 46′. D₀=−18° 20′ 0″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	11	. .	. .	. .	14.6	. .	. .	. .	21 35 14.45	+25.88	0.00	VII.	8	5.15	−31 35.97	−17.50	−2.34	21 35 40.33	−18 51 55.8
2	11	. .	. .	. .	. .	56.6	9.9	23.7	37 43.61	25.87	0.00	VII.	4	2.22	16 8.43	16.92	1.52	38 9.48	36 26.9
3	10	. .	. .	. .	. .	. .	. .	38.8	38 59.22	25.86	0.00	VII.	8	0.10	34 0.87	16.85	2.49	39 25.08	54 20.2
4	10	. .	. .	. .	. .	17.4	30.8	44.6	48 4.48	25.82	0.00	VII.	3	12.4	16 2.90	14.55	1.51	48 30.30	36 19.0
5	10	50.5	4.6	17.4	29.9	44.6	. .	. .	53 30.55	25.80	0.00	V.	4	3.49	16 52.54	13.34	1.56	53 56.35	37 7.4
6	12	. .	. .	. .	. .	. .	57.9	11.4	55 31.58	25.80	−0.01	VII.	3	3.54	11 55.82	12.89	1.30	21 55 57.37	32 10.0
7	10	. .	. .	. .	35.5	48.8	1.9	14.6	21 59 35.50	25.78	0.00	VII.	3	7.0	13 29.61	11.96	1.38	22 0 1.28	33 43.0
8	11	. .	. .	. .	27.5	40.5	53.8	. .	22 1 27.38	25.77	0.00	VI.	5	6.46	23 20.92	11.55	1.91	1 53.15	43 34.4
9	10	. .	29.9	41.4	55.6	8.9	. .	. .	8 55.57	25.75	0.00	V.	7	10.38	34 19.08	9.89	2.50	9 21.32	18 54 31.5
10	10	. .	. .	. .	29.9	43.4	. .	. .	22 17 30.02	+25.71	+0.01	V.	10	5.36	−46 45.40	− 8.01	−3.18	22 17 55.74	−19 6 56.6

ZONE 209. OCTOBER 24. B. BELT, −18° 46′. D₀=−18° 19′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	40.	58.	6.5	19.	. .	. .	. .	0 0 19.28	+35.22	0.00	IV.	1	11.6	− 5 35.83	− 8.53	−0.95	0 0 54.50	−18 24 45.31
2	9	43.	57.	9.2	. .	. .	. .	. .	3 22.90	35.21	0.00	III.	6	10.8	29 3.95	8.56	2.22	3 58.11	48 14.73
3	6	. .	. .	. .	55.	8.3	21.3	. .	3 54.98	35.20	0.00	VI.	6	6.20	27 8.90	8.57	2.12	4 30.18	46 19.59
4	10	. .	. .	. .	. .	. .	10.	23.5	4 43 70	35.20	0.00	VII.	3	12.15	16 8.44	8.58	1.51	5 18.90	35 18.53
5	10	39.	53.	5.5	. .	. .	. .	. .	7 18.95	35.19	0.00	III.	5	11.28	25 43.18	8.59	2.04	7 54.14	44 53.81
6	9	. .	. .	8.	21.2	. .	. .	. .	8 21.06	35.18	0.00	IV.	5	9.29	24 43.21	8.60	1.98	8 56.24	43 53.79
7	10	. .	. .	. .	. .	. .	21.	34.	8 54.46	35.18	0.00	VII.	4	3.27	16 41.20	8.61	1.55	9 29.64	35 51.36
8	9	38.	51.5	4.5	. .	. .	. .	. .	11 17.65	35.17	0.00	III.	3	3.31	11 44.46	8.64	1.28	11 52.82	30 54.38
9	7	. .	. .	. .	51.3	5.	17.5	. .	11 51.37	35.17	0.00	VI.	3	5.39	12 48.93	8.65	1.34	12 26.54	31 58.92
10	8	. .	22.5	35.3	48.5	. .	. .	. .	15 48.51	35.15	0.00	IV.	4	9.00	19 29.39	8.71	1.70	16 23.66	38 39.80
11	10	. .	. .	18.	31.3	. .	. .	. .	17 30.98	35.15	0.00	IV.	1	9.39	4 51.96	8.74	0.90	18 6.13	24 1.60
12	10	. .	48.	1.	14.	. .	. .	. .	19 14.09	35.14	0.00	IV.	5	3.3	21 28.57	8.77	1.81	19 49.23	18 40 39.15
13	9	16.	30.	42.3	. .	. .	. .	. .	23 56.07	35.12	0.00	III.	9	9.44	43 49.55	8.87	3.04	24 31.19	19 3 1.46
14	9	. .	. .	. .	. .	39.5	53.	6.	24 26.49	35.12	0.00	VII.	8	6.16	37 5.43	8.88	2.68	25 1.61	18 56 16.99
15	9	. .	. .	. .	. .	. .	59.	12.	25 32.57	35.11	0.00	VII.	8	6.49	37 22.07	8.91	2.69	26 7.68	18 56 33.67
16	10	. .	. .	. .	. .	24.5	. .	. .	27 11.36	35.11	0.00	V.	9	7.16	42 34.93	8.94	2.98	27 46.47	19 1 46.85
17	8	. .	. .	24.	37.	. .	. .	. .	28 36.92	35.10	0.00	IV.	4	6.5	18 1.15	8.98	1.62	29 12.02	18 37 11.75
18	10	. .	. .	. .	33.	46.2	59.	. .	32 32.85	35.08	0.00	VI.	5	6.59	23 27.47	9.09	1.92	33 7.93	42 38.48
19	10	. .	. .	49.	2.5	. .	. .	. .	34 2.14	35.08	0.00	IV.	3	9.21	14 40.97	9.13	1.43	34 37.22	33 51.53
20	3.4	. .	. .	15.	28.	41.3	54.	. .	35 27.95	35.07	0.00	VI.	6	10.52	29 26.06	9.18	2.24	36 3.02	48 37.48
21	10	. .	. .	22.	35.	. .	. .	. .	37 34.95	35.06	0.00	IV.	5	7.18	23 37.15	9.24	1.92	38 10.01	18 42 48.31
22	10	. .	. .	. .	35.	45.	. .	. .	38 34.85	35.06	0.00	V.	9	4.46	41 19.29	9.28	2.91	39 9.91	19 0 31.48
23	6.7	. .	. .	. .	39.	52.2	5.2	19.	39 39.02	35.06	0.00	VII.	7	9.29	33 44.04	9.30	2.50	40 14.08	18 52 55.84
24	8	27.	40.5	53.5	. .	. .	. .	. .	45 6.63	35.04	0.00	III.	2	7.52	8 56.97	9.50	0.84	45 41.67	28 7.31
25	10	. .	. .	53.	6.	19.	. .	. .	46 5.94	35.03	0.00	V.	7	4.49	31 23.10	9.54	2.35	46 40.97	50 34.99
26	10	. .	. .	28.3	41.	. .	. .	. .	50 41.15	35.02	0.00	IV.	6	11.24	29 42.30	9.71	2.25	51 16.17	48 54.26
27	9	. .	. .	. .	57.4	. .	. .	. .	51 57.25	35.01	0.00	IV.	7	8.22	33 10.53	9.76	2.46	52 32.26	52 22.75
28	8	. .	. .	. .	. .	51.	4.	. .	52 37.76	35.01	0.00	VI.	8	7.8	37 31.80	9.78	2.70	53 12.77	56 44.28
29	10	. .	14.	27.	40.	. .	. .	. .	0 56 40.13	35.00	0.00	IV.	6	4.20	26 8.50	9.96	2.06	0 57 15.13	45 20.52
30	10	. .	37.	50.	3.	. .	. .	. .	1 4 3.06	34.98	0.00	IV.	4	5.3	17 29.88	10.29	1.58	1 4 38.04	36 41.75
31	8	. .	39.5	51.9	5.	. .	. .	. .	7 5.35	34.96	0.00	IV.	8	10.36	39 16.81	10.43	2.80	7 40.31	58 30.04
32	10	9.	23.	35.5	49.	. .	. .	. .	8 49.02	34.96	0.00	IV.	8	7.4	37 29.90	10.52	2.71	9 23.98	56 43.13
33	9	48.3	2.5	15.	. .	. .	. .	. .	15 28.37	34.94	0.00	III.	5	8.015	23 59.06	10.86	1.94	16 3.31	18 43 11.86
34	10	. .	17.	30.	43.	. .	. .	. .	16 43.23	34.94	0.00	IV.	9	4.00	40 56.12	10.92	2.90	17 18.17	19 0 9.94
35	10	. .	. .	. .	. .	. .	36.3	49.5	1 19 10.04	+34.93	0.00	VII.	10	9.2	−48 29.03	−11.04	−3.34	1 19 44.97	−19 7 43.41

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1848.	h.	s.	s.	s.	s.	s.
Oct. 20,	22	+ 22.95	*l* 0.180	− 0.51	+ 1.13	0.00
Oct. 24,	22	+ 32.96	*l* 0.082			

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1848.	h. m.	in.	°	°

REMARKS.

(208) 1. Hor. thread assumed as 7 instead of 8.
(208) 3. Minutes assumed as 38 instead of 37.
(209) 1. Transit over T. II is assumed to have been at 53^s instead of 58^s.
(209) 17. Declination differs 1′ from Arg. Z. 321, 1, and 6′ from Mer. Cir., 1848, October 17.
(209) 22. Transit observations discordant by 3^s; that over T. V used as 48^s instead of 45^s.

ZONE 209. OCTOBER 24. B. BELT, −18° 46′. D_0=−18° 19′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	9	. .	. .	. .	. .	33.	46.	. .	1 20 19.75	+34.93	0.00	VI.	7	4.27	−31 11.92	−11.11	−2.34	1 20 54.68	−18 50 25.37
37	7	. .	. .	. .	. .	. .	31.	45.	21 4.99	34.93	0.00	VII.	5	7.25	23 40.41	11.15	1.93	21 39.92	42 53.49
38	10	. .	0.4	13.	26.	. .	. .	. .	23 26.13	34.92	0.00	IV.	2	7.12	8 36.83	11.29	1.08	24 1.05	27 49.20
39	8	. .	. .	. .	. .	18.7	31.	45.	24 5.07	34.92	0.00	VII.	2	8.35	9 18.42	11.32	1.12	24 39.99	28 30.86
40	8	. .	. .	. .	. .	. .	. .	43.	25 2.99	34.92	0.00	VII.	1	7.41	3 52.18	11.37	0.82	25 37.91	23 4.37
41	10	. .	. .	55.3	8.3	21.5	. .	. .	28 8.31	34.91	0.00	V.	7	5.27	31 42.25	11.55	2.38	28 43.22	50 56.18
42	10	. .	. .	. .	36.4	50.	. .	. .	29 36.50	34.90	0.00	V.	4	10.41	20 20.30	11.64	1.74	30 11.40	39 33.68
43	9	42.3	56.4	9.	22.	. .	. .	. .	41 22.22	34.88	0.00	IV.	5	10.43	25 20.53	12.37	2.02	41 57.10	44 34.92
44	9	. .	37.5	50.2	3.	. .	. .	. .	49 3.31	34.86	0.00	IV.	4	10.26	20 12.76	12.89	1.73	49 38.17	39 27.38
45	7	. .	. .	. .	. .	. .	58.	. .	49 31.77	34.86	0.00	VII.	1	10.55	5 30.01	12.93	0.90	50 6.63	24 43.84
46	10	. .	. .	. .	20.	33.2	. .	. .	51 19.92	34.86	0.00	VI.	6	8.32	28 15.47	13.06	2.19	51 54.78	47 30.72
47	10	39.5	54.	6.3	19.	. .	. .	. .	53 19.25	34.85	0.00	IV.	7	7.33	32 45.82	13.21	2.44	53 54.10	52 1.47
48	10	. .	10.	23.2	36.5	. .	. .	. .	55 36.24	34.85	0.00	IV.	2	10.24	10 13.65	13.38	1.16	56 11.09	29 28.19
49	9	. .	. .	32.	45.	. .	. .	. .	56 44.96	34.85	0.00	IV.	5	10.17	25 7.42	13.46	2.01	1 57 19.81	44 22.89
50	8	. .	. .	. .	38.	52.	5.	. .	1 59 38.43	34.84	0.00	VI.	1	3.27	1 44.26	13.68	0.69	2 0 13.27	20 58.63
51	6.7	. .	. .	. .	5.	18.	. .	. .	2 1 4.78	34.84	0.00	V.	2	10.32	10 17.66	13.79	1.17	1 39.62	29 32.62
52	7	. .	. .	. .	. .	. .	. .	3.3	4 23.33	34.83	0.00	VII.	2	3.39	6 49.16	14.06	0.96	4 58.16	26 4.18
53	8	. .	. .	. .	. .	25.3	38.0	. .	6 11.89	34.83	0.00	VI.	5	2.20	21 6.78	14.20	1.77	6 46.72	40 22.75
54	9	. .	41.5	54.2	7.2	. .	. .	. .	8 7.50	34.83	0.00	IV.	8	5.34	36 44.52	14.35	2.67	8 42.33	56 1.54
55	10	. .	. .	. .	. .	1.	14.5	27.5	10 47.98	34.82	0.00	VII.	7	11.27	34 43.54	14.57	2.56	11 22.80	54 0.67
56	9	. .	. .	. .	. .	34.	47.	. .	12 20.74	34.82	0.00	VI.	5	6.21	23 8.30	14.70	1.89	12 55.56	18 42 24.89
57	7	. .	1.	14.	27.	. .	. .	. .	14 26.95	34.82	+0.01	IV.	1	3.24	1 4.	14.87	0.67	15 1.78	
58	6	. .	. .	. .	. .	. .	. .	57.5	15 18.04	34.82	0.00	VII.	9	7.39	42 46.28	14.95	3.02	15 52.86	19 2 4.25
59	8	. .	. .	. .	. .	59.5	12.	. .	16 46.01	34.82	0.00	VI.	7	4.52	31 24.53	15.07	2.37	17 20.83	18 50 41.97
60	10	. .	. .	. .	51.	4.5	18.	. .	25 51.29	34.81	0.00	VI.	8	4.18	36 6.08	15.86	2.64	26 26.10	55 24.58
61	10	. .	. .	. .	. .	36.	49.	. .	31 22.76	34.80	0.00	VI.	7	4.40	31 18.48	16.36	2.36	31 57.56	50 37.20
62	10	58.	12.	24.5	. .	. .	. .	. .	33 37.92	34.80	0.00	IV.	5	5.25	22 40.17	16.57	1.87	34 12.72	41 58.61
63	7	. .	. .	. .	. .	. .	. .	18.	33 38.06	34.80	0.00	VII.	2	7.4	8 32.53	16.57	1.06	34 12.86	18 27 50.16
64	10	. .	. .	27.	40.4	. .	. .	. .	35 40.27	34.80	0.00	IV.	9	4.3	40 57.63	16.76	2.93	36 15.07	19 0 17.32
65	8	. .	. .	. .	25.5	39.	. .	. .	37 25.51	34.80	0.00	V.	2	1.40	5 49.40	16.93	0.90	38 0.31	18 25 7.33
66	10	. .	. .	47.5	0.6	. .	. .	. .	39 0.49	34.80	0.00	IV.	5	2.37	21 15.47	17.08	1.78	39 35.29	40 34.33
67	10	. .	. .	. .	. .	32.	45.	. .	40 18.76	34.80	0.00	VI.	8	2.35	36 14.66	17.20	2.64	40 53.56	18 55 34.50
68	10	. .	. .	15.	28.	41.	. .	. .	42 28.03	34.80	0.00	V.	10	4.20	46 7.07	17.41	3.23	43 2.83	19 5 27.71
69	10	. .	3.	15.5	28.3	. .	. .	. .	44 28.82	34.80	0.00	IV.	8	11.7	39 32.43	17.61	2.84	45 3.62	18 58 52.88
70	10	. .	. .	. .	. .	. .	. .	53.	45 13.56	34.80	0.00	VII.	9	10.58	44 26.62	17.69	3.15	45 48.36	19 3 47.46
71	10	. .	. .	. .	56.	9.5	. .	. .	51 56.06	34.79	0.00	V.	5	9.48	24 52.76	18.34	1.99	52 30.85	18 44 13.09
72	9	. .	. .	. .	37.5	51.	. .	. .	53 37.52	34.79	0.00	V.	2	7.00	8 30.75	18.52	1.05	54 12.31	27 50.32
73	8	. .	. .	. .	. .	47.5	0.3	14.	54 34.21	34.79	0.00	VII.	6	9.24	28 41.52	18.62	2.22	55 9.00	48 2.36
74	10	. .	. .	. .	. .	. .	. .	13.5	2 55 33.86	−34.79	0.00	VII.	6	12.00	−30 0.18	−18.72	−2.29	2 56 8.65	−18 49 21.19

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1848.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1848, h. m.	in.	°	°

REMARKS.

(209) 67. Micrometer reading assumed as 8 $4^r.35$ instead of 8 $2^r.35$, to agree with Arg. Z. 318, 50.

ZONE 210. JANUARY 23. K. BELT, −26° 53′. $D_\circ = -26° 27′ 30″$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	2.9	. .	. .	. .	. .	6 10 16.90	− 0.96	−0.98	.	1	8.27	− 4 15.65	− 3.24	−3.91	6 10 14.96	−26 31 52.80
2	8	. .	48.8	2.8	. .	. .	. .	. .	11 16.83	0.96	1.00	.	5	10.8	25 2.88	3.56	6.10	11 14.87	52 42.54
3	8	. .	. .	. .	42.8	. .	. .	. .	13 42.81	0.97	1.00	.	6	6.58	27 28.17	4.34	6.25	13 40.84	26 55 8.76
4	8	12.8	26.8	. .	. .	. .	. .	. .	38 54.91	1.06	1.01	.	10	0.46	44 19.20	12.41	8.02	38 52.84	27 12 9.63
5	9	. .	9.3	. .	. .	. .	. .	. .	42 37.35	1.07	1.01	.	9	12.13	45 4.70	13.61	8.10	42 35.27	12 56.41
6	8.9	. .	. .	54.4	. .	. .	. .	. .	44 8.43	1.08	1.01	.	9	6.1	42 1.67	14.10	7.78	44 6.34	9 53.55
7	8.9	. .	. .	58.6	. .	. .	. .	. .	45 12.63	1.08	1.01	.	8	6.38	37 16.79	14.44	7.29	45 10.54	27 5 8.52
8	10	. .	. .	. .	49.0	. .	. .	. .	45 49.06	1.08	0.99	.	3	10.37	15 19.31	14.64	5.00	45 46.99	26 43 8.95
9	6.7	. .	32.8	46.8	. .	. .	. .	. .	47 0.82	1.09	0.99	.	4	7.8	18 32.91	15.02	5.33	46 58.74	26 46 23.26
10	10	. .	. .	. .	. .	28.8	. .	. .	48 14.76	1.09	1.01	V.	9	7.52	42 53.06	15.42	7.88	48 12.66	27 10 46.36
11	9	. .	. .	17.4	31.8	. .	. .	. .	49 31.60	1.09	1.00	IV.	6	9.58	28 58.93	15.84	6.42	49 29.51	26 56 51.19
12	9.10	. .	. .	. .	. .	4.3	. .	. .	49 50.29	1.09	1.00	.	6	9.5	28 32.21	15.94	6.37	49 48.20	56 24.52
13	9.10	. .	58.1	. .	. .	. .	. .	. .	51 26.14	1.09	1.00	.	7	5.15	31 36.23	16.44	6.69	51 24.05	59 29.36
14	7.8	. .	. .	54.3	8.1	. .	. .	. .	52 8.20	1.10	1.00	.	6	12.3	30 1.96	16.68	6.52	52 6.10	57 55.16
15	10	. .	. .	32.5	. .	. .	. .	. .	54 46.52	1.10	1.00	.	6	6.51	27 24.64	17.53	6.24	54 44.42	26 55 18.41
16	8.9	. .	. .	20.3	34.3	. .	. .	. .	55 34.28	1.10	1.00	.	7	7.44	32 51.37	17.79	6.82	55 32.18	27 0 45.98
17	10	. .	. .	. .	. .	11.8	. .	. .	57 57.81	1.11	1.00	V.	4	10.9	20 4.15	18.56	5.49	57 55.70	26 47 58.20
18	8.9	. .	. .	. .	59.9	. .	. .	. .	6 58 59.94	1.11	1.00	.	5	11.14	25 36.16	18.90	6.06	6 58 57.83	26 53 31.12
19	10	. .	47.8	. .	. .	. .	. .	. .	7 3 15.85	1.12	1.01	.	8	11.13	39 35.45	20.28	7.53	7 3 13.72	27 7 33.26
20	5.6	. .	51.9	. .	20.0	. .	. .	. .	4 19.90	1.12	1.02	.	10	6.19	47 7.11	20.62	8.33	4 17.76	15 6.06
21	7	23.3	37.3	. .	. .	. .	. .	. .	6 5.38	1.12	1.01	.	8	6.41	37 18.30	21.19	7.29	6 3.25	5 16.78
22	7	. .	. .	. .	24.8	. .	. .	. .	6 24.63	1.12	1.02	.	10	3.27	45 40.37	21.29	8.11	6 22.49	13 39.77
23	6	. .	. .	22.1	36.2	. .	. .	. .	7 36.12	1.13	1.01	.	8	8.43	38 19.82	21.68	7.40	7 33.98	27 6 18.90
24	4	. .	17.4	31.8	. .	. .	. .	. .	8 45.61	1.13	0.98	.	1	6.14	3 8.59	22.06	3.77	8 43.50	26 31 4.42
25	5.6	. .	. .	. .	. .	. .	17.3	. .	8 49.19	1.13	0.99	VI.	4	7.46	18 51.91	22.08	5.36	8 47.07	46 49.35
26	7	. .	16.8	30.8	. .	. .	. .	. .	11 44.81	1.13	0.98	.	1	7.51	3 57.49	23.03	3.85	11 42.70	31 54.37
27	6.7	9.9	23.9	. .	. .	. .	. .	. .	14 51.86	1.14	0.99	.	3	6.33	13 16.27	24.04	4.79	14 49.73	41 15.10
28	10	. .	5.3	. .	. .	. .	. .	. .	16 33.34	1.14	1.00	.	5	6.39	23 17.50	24.59	5.81	16 31.20	51 17.90
29	10	. .	7.5	. .	. .	. .	. .	. .	25 35.52	1.15	0.99	.	2	4.34	7 17.17	27.53	4.19	25 33.38	35 18.89
30	5	48.1	2.4	. .	. .	. .	. .	. .	28 30.22	1.15	0.99	.	3	7.5	13 32.40	28.48	4.80	28 28.08	41 35.68
31	9.10	. .	3.3	. .	. .	. .	. .	. .	29 31.34	1.15	1.00	.	7	4.52	31 24.64	28.81	6.67	29 29.19	26 59 30.12
32	8	. .	. .	50.9	. .	. .	. .	. .	30 4.93	1.15	1.01	.	9	7.11	42 32.42	29.02	7.84	30 2.77	27 10 39.28
33	8	. .	33.0	46.3	. .	. .	. .	. .	31 0.69	1.15	1.01	.	8	6.49	37 22.34	29.32	7.80	30 58.53	27 5 28.96
34	9	. .	. .	. .	9.9	. .	. .	. .	32 9.92	1.15	0.98	.	1	11.28	5 46.91	29.70	4.04	32 7.79	26 33 50.65
35	7	. .	. .	. .	20.2	. .	. .	. .	33 20.22	1.15	0.98	.	1	6.46	3 24.73	30.08	3.78	33 18.09	31 28.59
36	7	. .	. .	. .	. .	. .	. .	5.3	33 23.50	1.15	0.98	VII.	2	3.34	6 46.52	30.10	4.12	33 21.37	34 50.74
37	10	31.4	. .	. .	. .	. .	. .	. .	7 36 13.38	− 1.16	−1.00	.	5	4.9	−22 1.86	−31.02	−5.68	7 36 11.22	−26 50 8.56

ZONE 211. JANUARY 27. K. BELT, −26° 53′. $D_\circ = -26° 28′ 30″$.

1	9.10	. .	. .	. .	27.2	. .	. .	. .	4 4 27.17	− 4.31	−1.00	.	7	4.43	−31 20.10	− 7.47	−6.68	4 4 21.86	−27 0 4.3
2	9	35.5	. .	58.8	. .	. .	. .	. .	20 17.58	4.44	0.99	.	2	7.22	8 41.87	8.53	4.25	20 12.15	26 37 24.7
3	8.9	. .	. .	55.2	. .	23.8	. .	. .	22 9.50	4.45	1.00	.	7	4.39	31 18.09	8.65	6.68	22 4.05	27 0 3.4
4	8.9	. .	. .	. .	. .	. .	1.0	. .	22 32.83	4.45	0.99	VI.	2	7.58	8 59.85	8.67	4.27	22 27.39	26 37 42.8
5	7	. .	. .	. .	. .	. .	56.3	10.2	23 28.26	4.46	0.99	VI.	2	5.34	7 47.25	8.73	4.16	23 22.81	36 30.1
6	10	. .	. .	. .	59.2	. .	. .	. .	26 59.22	4.49	0.99	.	1	8.39	4 21.71	8.93	3.80	26 53.74	33 4.4
7	10	. .	. .	. .	. .	57.8	. .	. .	27 43.88	4.49	0.99	V.	2	3.57	6 58.46	8.99	4.08	27 38.40	35 41.5
8	9.10	38.0	52.0	. .	. .	. .	. .	. .	4 30 20.02	− 4.51	−1.00	.	5	7.3	−23 29.59	− 9.16	−5.84	4 30 14.51	−26 52 14.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(211) 2. Transit over T. III assumed to have been at $3^s.8$ instead of $58^s.8$.

ZONE 211. JANUARY 27. K. BELT, —26° 53′. D$_{\circ}$=—26° 28′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	9.10	. .	. .	. .	37.8	. .	. .	. .	4 30 37.86	— 4.52	—1.00	.	3	11.10	—15 35.94	— 9.18	—4.98	4 30 32.34	—26 44 20.1
10	9	. .	. .	28.8	42.6	. .	. .	. .	31 42.67	4.52	1.00	.	8	4.27	36 10.73	9.26	7.21	31 37.15	27 4 57.2
11	9	2.3	16.3	. .	. .	. .	. .	. .	30 44.35	4.57	1.00	III.	6	12.39	30 20.08	9.73	6.57	38 38.78	26 59 6.4
12	9.8	. .	. .	. .	. .	1.6	. .	. .	38 47.59	4.57	1.00	V.	7	10.19	34 9.49	9.74	7.00	38 42.02	27 2 56.2
13	8	. .	20.2	34.2	. .	. .	. .	. .	40 48.21	4.59	0.99	.	1	11.28	5 46.91	9.88	3.94	40 42.63	26 34 30.7
14	10	. .	. .	. .	26.2	. .	. .	. .	41 26.14	4.59	1.00	.	7	9.49	33 54.40	9.92	6.42	41 20.55	27 2 40.7
15	10	. .	22.0	. .	. .	. .	. .	. .	47 50.02	4.64	0.99	II.	3	3.43	11 50.37	10.40	4.58	47 44.39	26 40 35.4
16	9	. .	. .	20.4	. .	. .	. .	. .	4 48 34.42	— 4.64	—1.00	.	6	11.30	—29 45.33	—10.44	—6.52	4 48 28.78	—26 58 32.3

ZONE 212. FEBRUARY 10. B. BELT, —26° 16′. D$_{\circ}$=—25° 50′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	56.	10.	24.	4 15 42.16	—23.38	—1.00	IV.	3	10.295	—14 45.26	— 7.55	—4.07	4 15 17.78	—26 5 6.89
2	8	. .	. .	22.3	36.5	50.3	. .	. .	20 36.31	23.42	1.01	IV.	10	6.13	47 4.08	8.00	7.15	20 11.88	37 29.23
3	9	. .	. .	3.	17.	31.	. .	. .	22 17.00	23.43	1.00	V.	6	10.39	29 19.58	8.16	6.41	21 52.57	19 44.15
4	7	. .	. .	. .	47.5	1.	. .	. .	23 47.18	23.45	1.01	IV.	10	4.15	46 4.58	8.31	8.05	23 22.72	36 30.94
5	9	. .	. .	55.	9.	. .	. .	. .	25 9.00	23.46	0.99	IV.	3	8.46	14 23.34	8.44	4.00	24 44.55	4 45.78
6	9	36.2	50.5	4.3	. .	. .	. .	. .	27 18.29	23.47	1.01	III.	10	7.16	47 35.81	8.65	8.20	26 53.81	38 2.66
7	9	. .	. .	3.	17.	. .	. .	. .	29 16.98	23.49	1.00	IV.	6	5.25½	26 41.52	8.84	6.16	28 52.49	26 17 6.52
8	9	. .	. .	9.	23.	. .	. .	. .	31 22.96	23.50	0.99	IV.	1	2.45	1 23.20	9.05	3.79	30 58.47	25 51 46.04
9	10	. .	. .	. .	40.	53.8	. .	. .	32 39.87	23.51	1.01	V.	9	2.10	40 0.61	9.18	7.45	32 15.35	26 30 27.24
10	10	. .	. .	. .	52.2	6.4	. .	. .	34 51.39	23.53	0.99	V.	3	7.19	13 39.42	9.40	4.91	34 26.87	4 3.73
11	11	. .	. .	1.5	16.	. .	. .	. .	37 15.66	23.55	1.01	V.	9	5.52	41 52.55	9.64	7.64	36 51.10	32 19.83
12	9	. .	. .	. .	. .	. .	45.6	59.3	38 17.62	23.56	1.00	VI.	5	3.23	21 38.48	9.75	5.68	37 53.06	12 3.91
13	9	. .	. .	. .	. .	. .	3.	17.	39 35.15	23.57	1.00	VII.	6	9.11	28 34.84	9.88	6.36	39 10.58	19 1.08
14	9	. .	. .	. .	7.	21.	. .	. .	41 6.94	23.58	1.01	V.	9	10.8	44 1.64	10.04	7.85	40 42.35	34 29.53
15	11	. .	59.8	13.5	27.5	. .	. .	. .	44 27.57	23.60	1.00	IV.	4	6.29	18 13.25	10.38	4.34	44 2.97	8 37.97
16	9	. .	. .	. .	. .	25.6	39.2	. .	45 11.40	23.61	1.00	VI.	7	7.34	32 46.16	10.46	6.76	44 46.79	23 13.38
17	11	. .	. .	. .	. .	. .	20.	34.	46 52.16	23.62	1.00	VII.	6	8.34	28 16.20	10.63	6.33	46 27.54	18 43.16
18	8	. .	. .	. .	. .	. .	23.	37.2	47 55.25	23.63	1.00	VII.	6	11.2	29 30.82	10.74	6.45	47 30.62	26 19 58.01
19	7	. .	. .	. .	47.	0.5	14.5	. .	49 46.72	23.65	0.99	V.	2	5.45	7 52.92	10.94	4.37	49 22.08	25 58 18.23
20	11	. .	. .	17.4	31.4	. .	. .	. .	52 31.30	23.66	1.01	IV.	10	4.21	46 7.60	11.23	8.05	52 6.63	26 36 36.88
21	10	. .	. .	36.5	50.5	. .	. .	. .	55 50.51	23.69	1.00	V.	4	9.48	19 53.55	11.58	5.51	55 25.82	10 20.64
22	6	. .	. .	. .	. .	. .	. .	10.	56 28.08	23.70	1.01	VII.	8	12.6	39 1.28	11.65	7.45	56 3.37	29 30.38
23	9	. .	. .	. .	27.	40.5	. .	. .	58 12.81	23.72	1.00	IV.	3	11.50	15 56.11	11.86	4.13	57 48.09	6 22.10
24	8	. .	. .	. .	36.	49.5	3.4	17.	4 59 35.56	23.72	1.00	VII.	7	4.13	31 4.58	11.99	6.59	4 59 10.84	21 33.16
25	7	22.	36.	50.	3.5	. .	. .	. .	5 5 3.77	23.76	1.00	IV.	3	11.6	15 33.93	12.59	4.10	5 4 39.01	6 0.62
26	11	. .	59.5	13.3	27.4	. .	. .	. .	7 27.37	23.77	1.00	IV.	4	12.4	21 2.07	12.85	5.62	7 2.60	11 30.64
27	9	. .	23.	37.	50.8	. .	. .	. .	8 50.87	23.79	1.00	IV.	7	6.55½	32 26.91	13.00	6.72	8 26.08	22 56.63
28	10	. .	. .	. .	. .	15.	29.	. .	10 1.12	23.79	1.01	VI.	10	4.39	46 16.52	13.13	8.07	9 36.32	36 47.72
29	10	. .	. .	. .	. .	. .	. .	45.	11 3.09	23.88	1.01	VII.	9	1.48	39 49.16	13.25	7.43	10 38.28	30 19.04
30	8	24.2	38.	52.	6.	. .	. .	. .	5 14 5.94	—23.82	—1.00	IV.	3	9.31½	—15 16.53	—13.60	—4.06	5 13 41.12	—26 5 44.19

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(212) 1. Micrometer reading assumed as 9$^{\mathrm{r}}$.295 instead of 10$^{\mathrm{r}}$.295.
(212) 22. Micrometer reading assumed as 10$^{\mathrm{r}}$.6 instead of 12$^{\mathrm{r}}$.6.
(212) 23. Transit over T.'s V and VI assumed as recorded over T.'s IV and V.
(212) 30. Micrometer reading assumed as 10$^{\mathrm{r}}$.31½ instead of 9$^{\mathrm{r}}$.31½.

ZONE 213. FEBRUARY 13. B. BELT, −33° 8′. D₀=−32° 43′ 50″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	27.5	. .	57.	. .	7 55 27.25	−26.38	−1.01	VI.	9	8.20	−43 7.05	−11.22	−9.32	7 54 59.86	−33 27 17.59
2	8	. .	14.	29.	. .	. .	. .	. .	7 59 43.90	26.39	1.00	III.	5	11.41	25 49.73	11.77	6.14	59 16.51	9 57.64
3	7	. .	. .	. .	25.	40.	. .	. .	8 1 25.02	26.39	1.00	V.	5	8.53	24 25.02	11.98	5.89	7 59 57.63	33 8 32.89
4	9	8.5	23.	. .	. .	. .	. .	. .	2 52.96	26.40	1.00	II.	2	10.25	10 13.90	12.16	3.38	8 2 25.56	32 54 19.52
5	9	. .	. .	. .	33.5	48.3	. .	. .	3 33.51	26.40	0.98	V.	1	9.00	4 32.23	12.25	2.38	3 6.13	32 48 36 86
6	8	. .	48.2	3.	. .	. .	. .	. .	8 18.00	26.41	1.00	III.	5	5.58	22 56.75	12.85	5.63	7 50.59	33 7 5.23
7	10	. .	. .	. .	57.	12.	. .	. .	11 57.03	26.41	1.00	V.	6	7.15	27 36.68	13.30	6.47	11 29.62	11 46.45
8	10	. .	. .	. .	5.3	20.4	. .	. .	13 5.44	26.41	0.99	V.	4	6.26	18 11.68	13.45	4.78	12 38.04	2 19.91
9	9	. .	. .	. .	. .	16.5	32.	. .	14 1.85	26.42	1.00	VII.	7	5.56	31 56.41	13.56	7.26	13 34.43	16 7.23
10	9	. .	. .	. .	. .	. .	29.3	44.5	15 59.54	26.42	1.01	VII.	7	10.9	34 3.99	13.81	7.65	15 32.11	33 18 15.45
11	10	. .	. .	. .	. .	53.	8.	. .	16 38.09	26.42	0.99	VI.	2	7.27	8 44.17	13.89	3.12	16 10.68	32 52 51.18
12	10	. .	. .	. .	. .	40.	54.5	. .	19? 24.84	26.42	1.00	VI.	4	12.13	21 6.48	14.24	5.30	18 57.42	33 5 16.02
13	10	. .	. .	. .	. .	. .	. .	11.	20 26.41	26.42	0.99	VII.	3	10.45	15 22.84	14.37	4.28	19 59.00	32 59 31.49
14	10	. .	. .	. .	. .	. .	. .	59.5	22 14.98	26.43	0.99	VII.	2	8.33	9 17.18	14.59	3.22	21 47.56	32 53 26.99
15	7.8	. .	53.5	8.4	23.3	. .	. .	. .	25 23.35	26.43	1.00	IV.	5	8.50	24 23.55	14.98	5.89	24 55.92	33 8 33.42
16	8	. .	48.5	3.3	. .	. .	. .	. .	27 18.29	26.43	0.99	III.	4	5.485	17 52.76	15.22	4.72	26 50.87	33 2 2.70
17	10	. .	. .	9.	23.5	. .	. .	. .	28 23.74	26.43	0.99	IV.	3	9.02½	14 31.65	15.36	4.12	27 56.32	32 58 41.13
18	8	. .	. .	. .	. .	. .	13.	28.3	29 43.25	26.43	1.02	VII.	10	2.53	45 22.73	15.53	9.74	29 15.80	33 29 38.00
19	8	. .	. .	. .	0.0	15.	30.	. .	32 0.06	26.44	1.00	VI.	6	10.14	29 6.79	15.81	6.75	31 32.62	13 19.35
20	8	. .	. .	26.3	41.3	. .	. .	. .	33 41.30	26.44	1.00	IV.	4	11.48	20 54.10	16.02	5.26	33 13.86	5 5.38
21	8	. .	. .	. .	. .	. .	. .	18.4	34 33.42	26.44	1.02	VII.	9	12.25	45 10.25	16.12	9.71	34 5.96	33 29 26.08
22	10	. .	45.	59.5	. .	. .	. .	. .	38 14.62	26.44	0.99	III.	2	11.23	10 43.33	16.58	3.46	37 47.19	32 54 53.37
23	10	. .	. .	. .	. .	. .	57.5	12.5	38 28.74	26.44	0.99	VII.	2	11.15½	10 39.11	16.61	3.45	38 1.31	32 54 49.17
24	8	. .	. .	35.	49.8	4.5	. .	. .	40 49.74	26.44	1.01	V.	8	6.17	37 6.14	16.90	8.20	40 22.29	33 21 21.24
25	7.8	. .	. .	. .	. .	31.	46.	. .	42 16.09	26.44	0.98	VI.	2	3.29	6 44.16	17.08	2.76	41 48.67	32 50 54.00
26	10	. .	57.	12.3	. .	. .	. .	. .	49 27.01	26.44	0.98	III.	2	2.3	6 0.96	17.98	2.63	48 59.59	50 11.57
27	7.8	. .	. .	. .	. .	. .	17.	32.	49 47.27	26.44	0.98	VII.	2	2.31	6 14.64	18.02	2.66	49 19.85	32 50 25.32
28	10	. .	. .	. .	10.	25.	. .	. .	54 9.92	26.44	1.02	V.	10	3.32	45 42.84	18.57	9.81	53 42.46	33 30 1.22
29	8	. .	6.	21.2	36.	. .	. .	. .	57 36.01	26.44	0.99	IV.	4	2.34	16 14.76	18.99	4.43	57 8.58	0 28.18
30	9	. .	. .	. .	. .	. .	28.	43.	8 58 58.20	26.44	1.00	VII.	5	3.55	21 54.29	19.16	5.44	8 58 30.76	33 6 8.89
31	9	. .	31.5	46.4	1.2	. .	. .	. .	9 1 1.30	26.44	0.99	IV.	3	7.32	13 46.02	19.42	4.00	9 0 33.87	32 57 59.44
32	9	. .	. .	. .	. .	. .	8.8	24.	1 39.10	26.44	1.00	VII.	4	10.5	20 1.67	19.49	5.10	1 11.66	33 4 16.26
33	8	. .	. .	. .	. .	57.	13.	27.5	8 42.74	26.43	0.98	VII.	1	8.9½	4 6.33	20.37	2.30	8 15.33	32 48 19.00
34	9	. .	23.	38.	53.	. .	. .	. .	12 52.94	26.43	0.99	IV.	3	9.45	14 53.08	20.89	4.18	12 25.52	32 59 8.15
35	7.8	. .	. .	. .	. .	17.	32.	47.	14 2.07	16.43	1.01	VII.	9	10.1	43 57.65	21.03	9.19	13 34.63	33 28 18.17
36	8	. .	4.	19.2	34.	. .	. .	. .	16 33.99	26.42	1.01	IV.	8	7.18	37 36.95	21.34	8.30	16 6.56	21 56.59
37	10	. .	. .	43.	58.	. .	. .	. .	17 57.97	26.42	1.00	IV.	6	6.41	27 19.60	21.52	6.41	17 30.55	11 37.53
38	9	. .	. .	. .	. .	. .	7.2	22.3	18 37.46	26.42	0.99	VII.	4	5.46	17 51.07	21.60	4.71	18 10.05	2 7.38
39	8	. .	. .	. .	46.2	1.3	. .	. .	20 46.27	26.42	1.00	V.	7	3.16	30 36.17	21.87	7.03	20 18.85	14 55.07
40	8	. .	. .	. .	. .	. .	54.	9.	21 24.19	26.42	1.00	VII.	5	8.15	24 5.40	21.95	5.84	20 56.77	8 23.19
41	9	. .	. .	. .	27.	42.2	. .	. .	23 27.19	26.41	0.99	V.	4	3.34	16 44.95	22.21	4.51	22 59.79	33 1 1.67
42	10	. .	11.3	26.4	. .	. .	. .	. .	25 41.22	26.41	0.99	III.	2	6.49	8 25.18	22.49	3.05	25 13.82	32 52 40.72
43	9	. .	. .	. .	. .	. .	42.	. .	26 11.97	26.41	0.98	VI.	1	4.23	2 12.39	22.56	1.96	25 44.58	32 46 26.91
44	10	. .	. .	. .	29.	44.	. .	. .	28 29.09	26.40	0.99	V.	4	9.38	19 48.49	22.05	5.05	28 1.70	33 4 6.39
45	10	. .	. .	. .	. .	45.	59.4	4.4	30 29.81	26.40	0.99	VII.	3	3.20	11 38.44	23.10	3.59	30 2.42	32 55 55.13
46	10	. .	33.	. .	0.5	15.4	. .	. .	33 0.54	26.40	1.00	V.	4	10.30	20 14.72	23.43	5.13	32 33.14	33 4 33.28
47	10	. .	. .	. .	34.4	49.5	. .	. .	34 34.51	26.39	1.00	V.	5	10.27	25 12.40	23.63	6.04	34 7.12	9 32.07
48	10	. .	50.5	5.3	20.2	. .	. .	. .	38 20.28	26.39	1.00	IV.	5	10.55½	25 26.83	24.12	6.08	37 52.89	33 9 47.03
49	.	. .	. .	. .	. .	. .	. .	58.7	9 39 14.12	−26.38	−0.99	VII.	3	8.35	−14 17.29	−24.23	−4.08	9 38 46.75	−32 58 35.60

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(213) 3. Minutes of transit assumed as 0 instead of 1.
(213) 45. Transit over T. VII assumed to have been at $14^{s}.4$ instead of $4^{s}.4$.

ZONE 213. FEBRUARY 13. B. BELT, −33° 8′. D₀=−32° 43′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	10	..	..	..	..	..	27.	..	9 43 56.98	−26.37	−0.98	VI.	1	6.47	− 3 25.01	−24.85	− 2.16	9 43 29.63	−32 47 42.02
51	10	..	..	7.	22.	..	..	..	47 21.92	26.36	1.01	IV.	8	12.57	40 27.89	25.30	8.84	46 54.55	33 24 52.03
52	8	..	..	52.	7.5	22.5	..	..	49 7.37	26.36	0.99	V.	3	9.21½	14 41.16	25.53	4.16	48 40.02	32 59 0.85
53	8.9	..	..	..	34.	49.2	..	..	50 34.19	26.36	0.99	V.	4	5.53	17 55.03	25.73	4.72	50 6.84	33 2 15.48
54	9.10	..	..	23.	38.	..	..	..	52 37.98	26.35	0.99	IV.	3	5.43	12 51.05	26.01	3.80	52 10.64	32 57 10.86
55	8.9	..	25.	40.	55.2	..	..	..	9 55 54.98	−26.34	−1.01	.	9	7.34	−42 44.03	−26.45	− 9.28	9 55 27.63	−33 27 9.76

ZONE 214. FEBRUARY 13. B. BELT. −36° 16′. D₀=−35° 53′ 40″.

1	9	..	35.	50.	5.5	..	..	..	11 44 5.68	−25.94	−0.99	IV.	3	3.44	−12 21.31	− 0.87	− 3.73	11 43 38.75	−36 6 5.91
2	11	..	48.	3.5	19.	..	..	..	48 19.01	25.91	1.00	IV.	7	8.37	33 18.10	1.80	9.17	47 52.10	27 9.07
3	11	..	20.5	..	50.5	..	..	..	50 50.96	25.89	1.01	IV.	9	9.44	43 49.58	2.35	12.00	50 24.06	37 43.93
4	10	50.3	6.	21.	..	..	..	..	53 36.89	25.87	1.01	III.	9	11.31	44 43.47	2.94	12.24	53 10.01	38 38.65
5	10	46.	1.5	..	..	..	..	..	55 31.94	25.85	0.99	II.	3	11.2	15 31.67	3.35	4.55	55 5.10	9 19.57
6	11	..	..	..	..	31.5	..	1.5	58 15.37	25.83	1.01	VII.	9	5.27	41 39.42	3.94	11.41	57 48.53	35 34.77
7	11	..	16.	32.	47.5	..	..	..	11 58 47.55	25.83	1.00	IV.	5	2.33	21 13.45	4.05	6.01	11 58 20.72	15 3.51
8	11	..	27.3	42.3	58.2	..	..	..	12 2 58.12	25.80	1.00	IV.	6	7.20	27 39.26	4.95	7.68	12 2 31.32	21 31.89
9	11	..	..	..	..	..	..	26.2	6 39.96	25.76	0.99	VII.	2	11.44	10 53.43	5.72	3.38	6 13.21	4 42.53
10	8	..	..	..	48.	3.5	19.	..	15 47.92	25.60	1.01	VI.	9	13.3	45 29.66	7.61	12.45	15 21.23	39 29.72
11	11	..	..	..	..	50.	5.5	..	17 34.48	25.66	1.01	VI.	8	6.49	37 22.09	7.98	10.27	17 7.81	36 31 20.34
12	11	..	..	18.	..	..	..	..	23 33.47	25.60	0.99	V.	1	6.37	3 20.13	9.12	1.47	23 6.88	35 57 10.72
13	11	..	..	..	..	..	..	3.5	24 16.89	25.60	1.01	VII.	8	2.23½	35 7.89	9.25	9.66	23 50.28	36 29 6.80
14	11	..	..	..	19.3	..	..	..	28 19.21	25.56	1.01	IV.	8	5.8	36 31.40	9.99	10.04	27 52.64	30 31.43
15	11	..	33.2	49.	..	..	..	..	32 4.39	25.53	1.00	III.	7	7.56	32 57.36	10.62	9.09	31 37.86	26 57.07
16	10	..	4.	19.5	35.	..	..	..	36 35.02	25.49	1.00	IV.	7	3.38	30 47.32	11.36	8.52	36 8.53	24 47.20
17	9	..	..	..	47.3	2.5	..	..	37 47.04	25.48	1.01	V.	9	9.14	43 34.39	11.55	11.94	37 20.55	37 37.88
18	9	..	39.	54.2	9.5	..	..	..	41 9.42	25.44	0.99	IV.	3	8.35	14 17.79	12.12	4.25	40 42.99	8 14.16
19	9	..	..	..	..	42.0	57.4	..	42 26.43	25.43	1.01	V.	10	3.30	45 41.83	12.35	12.52	41 59.99	36 39 46.70
20	9	..	..	..	45.5	..	..	..	46 55.51	25.39	0.99	I.	1	1.37	0 48.35	13.14	0.85	46 29.13	35 54 42.34
21	9	..	..	52.	7.5	..	..	..	50 7.50	25.35	0.99	IV.	1	10.12	5 8.60	13.71	1.92	49 41.16	35 59 4.23
22	10	..	6.5	22.	37.	..	..	..	54 37.33	25.32	1.01	IV.	9	10.30	44 12.78	14.54	12.12	54 11.00	36 38 19.44
23	10	..	..	..	45.	0.5	..	..	12 59 45.06	25.26	0.99	V.	3	10.35	15 18.24	15.48	4.49	12 59 18.81	9 18.21
24	8	..	14.	29.5	45.	..	..	..	13 3 45.00	−25.23	−1.01	IV.	9	5.37	−41 45.03	−16.28	−11.46	13 3 18.76	−36 35 52.77

ZONE 215. FEBRUARY 19. K. BELT, −28° 46′. D₀=−28° 21′ 50″.

1	10	..	..	..	41.8	..	..	..	6 58 41.77	−24.15	−1.00	IV.	7	4.8	−31 2.45	− 8.12	− 6.74	6 58 16.62	−28 53 7.31
2	10	..	..	..	12.8	..	..	..	7 2 12.84	24.17	1.00	.	5	7.9	23 32.62	8.77	5.82	7 1 47.67	45 37.21
3	10	..	..	..	52.4	..	..	..	2 52.43	24.17	1.00	.	5	9.57	24 57.33	8.87	5.99	2 27.26	47 2.19
4	9	..	..	15.8	29.9	..	..	..	4 30.00	24.18	0.99	.	2	6.59	8 30.28	9.13	4.00	4 4.83	28 30 33.41
5	10	..	..	..	..	16.5	..	..	5 2.21	24.18	1.01	.	9	10.39	44 17.32	9.22	8.40	4 37.02	29 6 24.94
6	9	15.8	30.0	..	..	..	..	..	7 58.59	24.20	1.00	.	7	9.32	33 45.83	9.68	7.10	7 33.39	28 55 52.61
7	9	..	..	10.3	24.8	..	..	..	9 24.72	24.20	1.00	.	4	10.47	20 23.35	9.91	5.43	8 59.52	42 28.69
8	9.10	..	..	..	..	..	14.5	..	11 45.94	24.21	1.00	VI.	5	9.20	24 38.49	10.28	5.95	11 20.73	46 44.72
9	10	..	..	..	..	54.8	..	..	13 40.56	24.22	1.00	V.	5	4.46	22 20.47	10.58	5.66	13 15.34	28 44 26.71
10	.	38.8	53.7	..	..	..	..	..	18 21.96	24.24	1.01	.	8	8.4	38 0.16	11.31	7.61	17 56.71	29 0 9.08
11	5	..	..	..	..	49.5	4.2	18.6	7 18 35.55	−24.24	−1.00	.	8	9.43	−38 50.07	−11.35	− 7.71	7 18 10.31	−29 0 59.13

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(214) 1. Micrometer reading assumed as $4^{r}.44$ instead of $3^{r}.44$.
(214) 16. Time of transit over T. III assumed as $19^{s}.5$ instead of $17^{s}.5$.

ZONE 215. FEBRUARY 19. K. BELT, −28° 46′. D₀=−28° 21′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
12	7	58.9	13.1	. .	. .	. .	. .	. .	7 22 27.40	−24.26	−1.00	.	6	10.13	−29 6.50	−11.99	−6.51	7 22 2.14	−28 51 15.00
13	7.8	. .	. .	. .	8.3	. .	. .	. .	23 8.31	24.26	0.99	.	6	5.27	26 42.28	12.06	6.20	22 43.06	48 50.54
14	9	. .	. .	. .	. .	37.8	. .	. .	24 23.60	24.27	0.99	V.	3	8.52	14 26.31	12.25	4.71	23 58.34	36 33.27
15	9	. .	. .	. .	. .	. .	. .	34.9	24 52.30	24.27	0.99	VII.	2	10.47	10 24.83	12.32	4.22	24 27.04	32 31.37
16	8.9	. .	36.5	. .	5.3	. .	. .	. .	34 5.16	24.31	1.00	.	6	9.40	28 49.86	13.77	6.48	33 39.85	51 0.11
17	10	. .	. .	3.2	. .	. .	. .	. .	37 17.44	24.32	0.98	.	1	5.0	2 31.27	14.27	3.27	36 52.14	24 38.81
18	5.4	. .	44.1	. .	12.5	. .	. .	. .	38 12.58	24.32	0.99	.	3	7.45	13 52.57	14.41	4.64	37 47.27	36 1.62
19	9	0.7	14.6	. .	. .	. .	. .	. .	40 43.21	24.33	0.99	.	2	11.23	10 43.39	14.80	4.25	40 17.89	32 52.44
20	10	. .	. .	32.6	. .	. .	. .	. .	44 46.89	24.34	0.99	.	4	8.27	19 12.75	15.45	5.28	44 21.56	41 23.48
21	10	2.8	16.8	. .	. .	. .	. .	. .	53 45.49	24.37	1.01	.	7	10.55	34 27.68	16.86	7.17	53 20.11	28 56 41.71
22	9	. .	. .	14.9	29.8	. .	. .	. .	54 29.41	24.38	1.01	.	9	10.21	44 8.23	16.98	8.40	54 4.02	29 6 23.61
23	9	. .	. .	17.8	. .	47.4	. .	. .	55 32.61	24.38	1.00	.	5	5.30	22 42.70	17.15	5.70	55 7.23	28 44 55.55
24	9	. .	. .	25.9	40.3	. .	. .	. .	56 40.25	24.38	1.00	.	5	6.55	23 25.56	17.32	5.81	56 14.87	45 38.69
25	9	20.9	35.1	. .	. .	. .	. .	. .	58 3.71	24.39	1.01	.	8	7.28	37 41.99	17.54	7.59	57 38.31	59 57.12
26	9	. .	. .	. .	25.6	. .	. .	. .	7 58 25.65	24.39	1.00	.	5	5.54	22 54.80	17.60	5.73	7 58 0.26	45 8.13
27	9	34.0	48.8	3.3	. .	. .	. .	. .	8 1 17.25	24.40	1.01	.	8	2.28	35 10.72	18.05	7.27	8 0 51.84	57 26.04
28	9	37.6	. .	. .	. .	. .	. .	. .	6 20.22	24.41	0.99	.	3	2.23	11 10.20	18.83	4.30	5 54.82	33 23.33
29	9	. .	. .	. .	28.2	. .	. .	. .	8 28.25	24.42	0.99	.	3	5.56	12 57.61	19.16	4.52	8 2.84	35 11.29
30	9	. .	. .	. .	. .	. .	. .	26.1	11 43.46	24.42	0.99	VII.	4	5.40	17 48.13	19.67	5.12	11 18.05	28 40 2.92
31	9	. .	. .	. .	10.8	. .	. .	. .	13 10.70	24.43	1.01	.	9	1.58	39 54.59	19.89	7.87	12 45.26	29 2 12.35
32	9	. .	. .	. .	13.5	. .	. .	. .	14 13.48	24.43	1.00	.	7	2.37	30 16.57	20.05	6.66	13 48.05	28 52 33.28
33	9	. .	. .	. .	. .	. .	5.2	. .	14 36.73	24.43	1.01	VI.	9	6.0	41 56.45	20.11	8.13	14 11.29	29 4 14.69
34	9	. .	. .	34.3	. .	2.8	. .	. .	16 48.59	24.43	0.99	.	2	4.49	7 24.73	20.46	3.86	16 23.17	28 29 39.05
35	8.9	. .	. .	49.7	4.0	. .	. .	. .	18 3.98	24.44	0.99	.	2	4.7	7 3.55	20.65	3.80	17 38.55	29 18.00
36	9	. .	. .	4.3	18.3	. .	. .	. .	19 18.43	24.44	0.99	.	2	2.10	6 4.55	20.84	3.68	18 53.00	28 19.07
37	9	22.5	. .	51.2	. .	. .	. .	. .	21 5.33	24.44	1.00	.	4	12.23	21 11.74	21.12	5.51	20 39.89	43 28.47
38	9	. .	. .	. .	15.3	29.8	. .	. .	26 15.41	24.45	1.00	.	6	10.36	29 18.11	21.94	6.54	25 49.96	51 36.59
39	9	. .	. .	. .	25.3	. .	. .	. .	27 25.27	24.45	1.00	.	7	3.52	30 54.38	22.10	6.74	26 59.82	53 13.22
40	9	. .	. .	25.6	. .	54.2	. .	. .	28 39.93	24.46	0.99	.	3	4.19	12 8.70	22.29	4.41	28 14.48	28 34 25.40
41	9	. .	. .	. .	43.2	. .	. .	. .	29 43.11	24.46	1.01	.	8	8.33	38 14.78	22.46	7.67	29 17.64	29 0 34.91
42	9	32.1	. .	. .	. .	. .	. .	. .	37 14.95	24.47	1.01	.	8	3.46	35 50.06	23.63	7.35	36 49.47	28 58 11.04
43	9	. .	36.2	. .	. .	. .	. .	. .	38 4.70	24.47	0.98	.	2	3.21	6 40.34	23.76	3.74	37 39.25	28 57.84
44	9	. .	20.3	. .	. .	. .	. .	. .	38 48.81	24.47	0.99	.	3	4.55	12 26.85	23.87	4.44	38 23.35	28 34 45.16
45	9	. .	. .	32.5	. .	. .	. .	. .	40 46.79	24.47	1.02	.	10	9.10	48 33.33	24.18	8.99	40 21.30	29 10 56.50
46	7.8	27.9	42.1	56.4	. .	. .	. .	. .	44 10.68	24.48	1.00	.	7	6.12	32 4.98	24.69	6.88	43 45.20	28 54 26.55
47	10	. .	27.2	. .	. .	. .	. .	. .	45 55.74	24.48	1.00	.	7	5.27	31 42.28	24.97	6.83	45 30.26	54 4.08
48	9	. .	56.5	. .	. .	. .	. .	. .	50 25.03	24.48	1.00	.	7	2.48	30 22.11	25.66	6.68	49 59.55	52 44.45
49	9	. .	. .	. .	. .	48.8	. .	. .	50 34.55	24.48	0.99	.	5	7.89?	1	25.69	. .	50 9.08	
50	10	. .	41.9	. .	. .	. .	. .	. .	53 10.42	24.49	1.00	.	4	8.45	19 21.83	26.08	5.29	52 44.93	41 43.20
51	7	. .	. .	54.4	. .	22.8	. .	. .	8 59 8.65	24.49	0.98	.	1	5.52	2 57.49	27.01	3.29	8 58 43.18	25 17.79
52	10	9.1	. .	. .	. .	. .	. .	. .	9 0 51.80	−24.49	−0.99	.	4	8.15	−19 6.70	−27.27	−5.25	9 0 26.32	−28 41 29.22

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 216. FEBRUARY 19. K. BELT, −38° 46′ for Mural.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	51.0	. .	22.8	9 38 34.82	−25.17	−1.00	VI.	6	8.26	−28 12.27	. .	− 7.20	9 38 8.65	
2	9.10	. .	33.3	49.4	5.3	. .	. .	. .	41 5.37	25.16	0.99	.	3	6.5	13 2.15	. .	1.50	48 39.22	
3	10	. .	48.5	. .	. .	. .	. .	. .	44 20.59	25.16	1.00	.	6	7.32	27 45.32	. .	7.04	43 54.43	
4	10	. .	. .	. .	35.2	. .	. .	. .	47 35.06	25.15	1.02	.	9	4.31	41 11.75	. .	12.31	47 8.89	
5	8.9	. .	38.8	54.8	. .	. .	. .	. .	50 10.86	25.14	1.00	.	5	11.2	25 30.11	. .	6.19	49 44.72	
6	10	. .	35.8	. .	. .	. .	24.0	. .	51 7.92	25.14	1.00	.	6	5.23	26 40.26	. .	6.64	50 41.78	
7	10	. .	51.2	. .	. .	. .	. .	. .	55 23.25	25.13	0.99	.	4	7.52	18 55.10	. .	3.68	54 57.13	
8	10	. .	. .	. .	. .	. .	. .	0.9	57 12.98	25.12	0.99	.	4	4.16	17 6.19	. .	− 3.02	56 46.87	
9	9.10	. .	. .	. .	. .	. .	. .	39.3	9 57 51.54	−25.12	−0.98	.	2	5.56	− 7 58.51	. .	+ 0.39	9 57 25.44	
10	9	14.0	30.2	46.3	2.3	18.3	34.4	50.6	10 14	. .	. .	.	.	Mid.	. . .	. .	. .	10 14	
ZONE 217. FEBRUARY 23. B. BELT, −31° 53′. $D_0 = -31° 28′ 30″$.																			
1	8	3.	18.5	. .	. .	. .	. .	. .	5 59 47.60	+33.23	+0.99	II.	7	8.46	−33 22.43	− 0.23	− 7.34	6 0 21.82	−32 2 0.00
2	8	. .	28.	43.5	. .	. .	. .	. .	6 0 57.84	33.24	1.00	III.	5	8.46	24 21.49	0.42	5.90	1 32.08	31 52 57.81
3	8	. .	40.2	55.	. .	. .	. .	. .	3 9.68	33.21	1.00	III.	5	4.8	22 1.30	0.78	5.54	3 43.89	31 50 37.62
4	9	. .	. .	. .	. .	. .	54.	9.2	3 24.76	33.21	0.99	VII.	7	9.50	33 54.42	0.82	7.42	3 58.96	32 2 32.66
5	8	. .	. .	. .	33.	48.	. .	. .	5 33.14	33.20	1.00	V.	6	7.50	27 54.34	1.17	6.46	6 7.34	31 56 31.97
6	9	. .	. .	. .	. .	. .	58.	13.2	6 28.72	33.19	0.99	VII.	9	7.8	42 30.43	1.32	8.79	7 2.90	32 11 10.54
7	9	. .	. .	. .	37.6	52.8	. .	. .	10 37.91	33.16	1.01	V.	1	5.12	2 37.27	2.00	2.52	11 12.08	31 31 11.79
8	10	. .	. .	19.	34.2	. .	. .	. .	12 33.92	33.15	0.99	IV.	8	11.49	39 53.61	2.31	8.37	13 8.06	32 8 34.29
9	9	. .	. .	. .	58.5	13.5	. .	. .	13 58.70	33.14	1.01	V.	2	12.44	11 24.19	2.53	3.89	14 32.85	31 40 0.61
10	10	. .	. .	55.	10.	. .	. .	. .	16 9.86	33.12	1.01	IV.	2	.	4 59.0	2.88	2.90	16 43.99	33 34.78
11	7	. .	. .	. .	. .	. .	33.	48.	17 3.74	33.12	1.01	VII.	3	8.44	14 21.85	3.02	4.34	17 37.87	42 59.21
12	9	. .	. .	. .	. .	. .	19.	. .	18 49.47	33.11	1.00	VII.	4	3.20	16 37.46	3.30	4.70	19 23.58	45 15.46
13	8	. .	. .	23.8	38.	53.	. .	. .	20 38.30	33.09	1.00	V.	4	6.40	18 18.75	3.59	4.95	21 12.39	31 46 57.29
14	7	. .	. .	. .	30.	45.	. .	. .	22 30.02	33.08	0.99	V.	10	7.45	47 50.42	3.88	9.67	23 4.09	32 16 33.97
15	10	. .	. .	. .	0.	14.	. .	. .	25 59.71	33.06	1.01	V.	2	8.44	9 23.18	4.43	3.57	26 33.78	31 38 1.18
16	7	. .	. .	13.	28.	43.	. .	. .	26 28.01	33.05	1.00	V.	6	5.18	26 37.69	4.50	6.26	27 2.06	55 18.45
17	10	. .	. .	58.	12.3	. .	. .	. .	28 12.54	33.04	1.01	IV.	3	7.20	13 39.96	4.77	4.25	28 46.59	42 18.98
18	9	. .	. .	. .	. .	. .	15.	. .	28 45.46	33.04	1.01	VI.	3	9.56	14 58.42	4.86	4.43	29 19.51	43 37.71
19	7	. .	. .	. .	16.	30.5	. .	. .	30 15.95	33.03	1.00	V.	4	4.22	17 9.16	5.09	4.78	30 49.98	31 45 49.03
20	7	. .	. .	. .	36.4	51.3	. .	. .	31 36.39	33.02	0.99	V.	9	10.23	44 9.19	5.29	9.07	32 10.40	32 12 53.55
21	9	. .	. .	. .	2.5	17.3	. .	. .	33 2.60	33.01	1.01	V.	3	7.4	13 31.85	5.51	4.20	33 36.62	31 42 11.56
22	10	. .	. .	. .	46.	1.	. .	. .	34 46.18	33.01	1.00	V.	5	3.3	21 28.52	5.78	5.46	35 20.19	31 50 9.76
23	9	. .	. .	. .	. .	. .	. .	12.	35 27.70	33.01	0.99	VII.	9	2.26	40 8.24	5.88	8.41	36 1.70	32 8 52.53
24	9	. .	23.3	38.2	53.	. .	. .	. .	37 52.90	33.98	1.00	IV.	6	8.9½	28 4.23	6.26	6.49	38 27.88	31 56 46.98
25	9	. .	. .	. .	30.	44.5	. .	. .	39 29.82	32.97	0.99	V.	8	8.27	38 11.70	6.50	8.11	40 3.78	32 6 56.31
26	9	. .	. .	. .	11.	25.8	. .	. .	41 11.08	32.96	1.00	V.	5	6.20	23 7.86	6.76	5.72	41 44.04	31 51 50.34
27	9	. .	. .	. .	28.7	43.5	. .	. .	42 28.60	32.95	0.98	V.	10	12.4½	50 1.27	6.96	10.03	43 2.53	32 18 48.26
28	7	. .	. .	54.	9.	. .	. .	. .	44 8.86	32.94	1.01	IV.	1	6.51	3 27.24	7.22	2.65	44 42.81	31 32 7.11
29	9	. .	. .	. .	. .	. .	. .	56.	44 12.16	32.94	1.01	VII.	1	6.12	3 7.10	7.23	2.60	44 46.11	31 46.93
30	9	. .	. .	. .	. .	21.4	36.7	. .	46 6.95	32.93	1.00	VI.	5	2.49½	21 21.56	7.53	5.44	46 40.88	31 50 4.53
31	9	. .	. .	. .	. .	. .	55.	10.	47 25.60	32.92	0.99	VII.	10	6.59½	47 27.05	7.73	9.62	47 59.51	32 16 14.40
32	10	. .	. .	. .	. .	. .	26.	40.5	48 56.37	32.91	0.99	VII.	9	7.38	42 45.56	7.97	8.85	49 30.27	11 32.38
33	10	. .	. .	. .	54.	9.2	. .	. .	50 54.13	32.90	0.99	V.	10	3.58	45 55.95	8.27	9.35	51 28.02	32 14 43.57
34	10	. .	. .	. .	59.	. .	28.	. .	53 58.72	32.88	1.01	VI.	1	10.12	5 8.39	8.75	2.92	54 32.61	31 33 50.16
35	10	. .	. .	1.5	16.	30.5	. .	. .	6 57 16.04	+32.87	+1.01	V.	1	12.47	− 6 26.70	− 9.26	− 3.11	6 57 49.92	−31 35 9.07

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(216) 6. Transit over T. V assumed to have been recorded as over T. VI.

Zone 217. February 23. B. Belt, −31° 53′. D₀=−31° 28′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	9	. .	. .	. .	. .	. .	50.3	. .	6 58 20.78	+32.86	+1.00	VI.	4	6.38	−18 17.58	− 9.42	− 4.95	6 58 54.64	−31 47 1.95
37	9	. .	. .	. .	19.	33.5	. .	. .	7 0 18.93	32.85	1.00	V.	5	5.54½	22 55.00	9.73	5.68	7 0 52.78	51 40.41
38	9	. .	. .	. .	. .	. .	37.	51.5	1 7.49	32.84	1.01	VII.	3	7.26	13 42.51	9.86	4.25	1 41.34	42 26.62
39	8	. .	. .	. .	53.	8.	. .	. .	2 53.20	32.83	1.01	V.	3	5.47	12 53.02	10.13	4.12	3 27.04	41 37.27
40	9	. .	. .	. .	. .	. .	29.	44.	4 59.76	32.82	1.01	VII.	2	5.4	7 31.81	10.46	3.29	5 33.59	36 15.56
41	7.8	. .	. .	8.	23.	37.5	. .	. .	6 22.87	32.82	1.01	V.	3	10.20½	15 10.93	10.68	4.46	6 56.70	43 56.07
42	9	. .	. .	. .	. .	47.	2.	. .	7 32.40	32.82	1.00	VI.	6	11.50	29 55.20	10.86	6.78	8 6.22	58 42.84
43	7.8	. .	. .	48.5	3.	18.	. .	. .	10 3.20	32.80	1.01	V.	4	5.43	17 50.0	11.25	4.89	10 37.01	46 36.14
44	10	. .	. .	. .	. .	34.	48.?5	. .	11 19.14	32.79	1.00	VI.	5	4.18	22 6.18	11.45	5.56	11 52.93	31 50 53.19
45	7	. .	. .	. .	. .	. .	. .	1.	12 16.75	32.79	0.99	VII.	8	3.38½	35 45.79	11.60	7.72	12 50.53	32 4 35.11
46	9	. .	. .	. .	33.	. .	. .	. .	14 33.07	32.78	1.01	IV.	4	3.51	16 53.57	11.93	4.73	15 6.86	31 45 40.23
47	9	. .	. .	. .	53.	. .	. .	. .	15 53.06	32.77	1.01	IV.	4	2.14	16 4.67	12.16	4.60	16 26.84	44 51.43
48	8	. .	. .	. .	. .	. .	48.	. .	16 18.47	32.77	1.01	VI.	4	3.36	16 45.81	12.23	4.71	16 52.25	45 32.75
49	6.7	. .	. .	. .	. .	. .	44.	59.	18 13.70	32.76	1.00	VII.	6	3.50	25 52.89	12.53	6.13	18 47.46	31 54 41.55
50	10	. .	. .	. .	. .	36.	50.5	. .	19 21.17	32.75	0.99	VI.	9	9.33	43 43.82	12.71	9.01	19 54.91	32 12 35.54
51	9	. .	. .	. .	. .	. .	3.	18.	20 33.70	32.75	1.00	VII.	5	11.29	25 43.24	12.90	6.11	21 7.45	31 54 32.25
52	7	. .	. .	. .	31.	46.	1.	. .	22 31.27	32.74	1.01	VI.	1	7.36	3 49.73	13.21	2.70	23 5.02	31 32 35 64
53	10	. .	. .	. .	. .	. .	. .	34.2	23? 49.98	32.73	0.99	VII.	7	8.21½	33 9.79	13.41	7.30	24 23.70	32 2 0.50
54	10	. .	39.	54.	. .	. .	. .	. .	28 8.58	32.71	1.00	III.	4	10.5	20 2.12	14.11	5.22	28.42.29	31 48 51.45
55	9	. .	. .	14.	29.	43.5	. .	. .	29 28.86	32.70	1.00	V.	5	7.36	23 43.16	14.33	5.79	30 2.56	31 52 33.28
56	10	. .	. .	. .	. .	4.	19.	. .	30 49.41	32.70	0.99	VI.	8	6.16	37 5.49	14.54	7.94	31 23.10	32 5 57.97
57	7	. .	. .	. .	. .	. .	. .	21.5	31 37.48	32.70	1.00	VII.	4	7.21½	18 39.23	14.67	5.00	32 11.18	31 47 28.90
58	9	. .	. .	. .	. .	. .	0.	15.	33 30.61	32.69	0.99	VII.	10	2.36	45 14.19	14.98	9.25	34 4.29	32 14 8.42
59	9	. .	. .	. .	13.	27.5	. .	. .	40 12.89	32.66	1.00	VI.	6	6.55	27 26.45	16.06	6.39	40 46.55	31 56 18.90
60	9	. .	. .	. .	37.	51.5	. .	. .	41 36.83	32.65	0.99	VI.	8	5.5	36 29.68	16.30	7.84	42 10.47	32 5 23.82
61	9	. .	49.5	4.	19.	. .	. .	. .	43 18.88	32.64	0.99	IV.	7	9.48	33 53.89	16.58	7.42	43 52.51	32 2 47.89
62	9	. .	. .	. .	. .	. .	28.	43.	44 58.73	32.64	1.00	VII.	4	6.49½	18 23.11	16.86	4.96	45 32.37	31 47 14.93
63	9	. .	45.	59.5	14.3	. .	. .	. .	46 14.34	32.64	1.01	IV.	3	10.10	15 5.69	17.07	4.45	46 47.99	31 43 57.21
64	9	. .	. .	. .	. .	21.	35.5	. .	48 6.15	32.63	0.99	VI.	8	6.17	37 5.99	17.37	7.94	48 39.77	32 6 1.30
65	9	. .	. .	. .	39.	. .	. .	. .	51 39.05	32.62	1.01	IV.	3	6.50	13 24.84	17.96	4.17	52 12.68	31 42 16.97
66	9	. .	. .	. .	. .	. .	37.	52.	52 7.70	32.62	1.00	VII.	5	9.23	24 39.70	18.04	5.95	52 41.32	53 33.69
67	9	3.	18.	. .	. .	. .	. .	. .	54 47.31	32.61	1.00	II.	6	8.11	28 4.77	18.48	6.50	55 20.92	56 59.75
68	8	16.	30.5	. .	. .	. .	. .	. .	55 0.04	32.60	1.00	II.	5	8.54	24 25.36	18.52	5.90	55 33.64	31 53 19.78
69	7.8	. .	. .	. .	39.	54.	8.5	. .	56 39.08	32.60	0.99	VI.	7	9.22	33 40.57	18.79	7.39	57 12.67	32 2 36.75
70	7.8	. .	. .	. .	. .	. .	21.	36.	7 57 51.61	32.60	0.98	VII.	10	4.34	46 13.69	18.99	9.41	7 58 25.19	32 15 12.09
71	9	. .	29.	43.7	58.3	. .	. .	. .	8 0 58.38	32.59	1.01	IV.	2	1.42	5 50.43	19.51	3.02	8 1 31.98	31 34 42.96
72	9	. .	. .	. .	48.5	3.	. .	. .	3 48.26	32.58	0.98	V.	10	10.10	49 3.54	19.98	9.89	4 21.82	32 18 3.41
73	7.8	. .	. .	. .	. .	. .	53.5	8.	4 23.93	32.57	1.00	VII.	6	6.59	27 28.20	20.07	6.40	4 57.50	31 56 24.67
74	10	. .	. .	. .	. .	. .	7.	22.	5 37.70	32.57	1.00	VII.	6	.	23 56.92	20.28	5.87	6 11.27	52 53.07
75	9	. .	. .	. .	. .	. .	50.	4.5	7 20.44	32.57	1.00	VII.	5	6.34	23 14.50	20.56	5.73	7 54.01	52 10.79
76	10	. .	. .	. .	. .	. .	23.	37.5	10 53.52	32.56	1.02	VII.	1	9.20½	4 46.17	21.15	2.85	11 27.10	33 40.17
77	9	. .	. .	. .	. .	. .	. .	49.	12 4.83	32.55	1.00	VII.	6	9.3	28 30.72	21.34	6.56	12 38.38	57 28.62
78	9	. .	. .	. .	45.	. .	. .	. .	14 45.01	32.54	1.00	IV.	6	6.12	27 4.98	21.79	6.33	15 18.55	56 3.10
79	10	. .	. .	. .	. .	. .	35.5	50.	15 5.96	32.54	1.00	VII.	5	6.41	23 18.02	21.85	5.73	15 39.50	52 15.60
80	8.9	. .	. .	. .	49.	4.	. .	. .	16 49.18	32.54	1.00	V.	5	3.47	21 50.71	22.13	5.52	17 22.72	31 50 48.36
81	9	. .	5.	19.5	. .	. .	. .	. .	18 34.36	32.54	0.99	III.	8	7.57	37 56.57	22.42	8.07	19 7.89	32 6 57.06
82	10	. .	. .	. .	. .	. .	15.	30.	18 45.68	32.54	1.00	VII.	6	9.44½	28 51.65	22.45	6.61	19 19.22	31 57 50.71
83	7.8	. .	. .	. .	31.	46.	. .	. .	20 31.20	32.53	1.01	V.	3	5.17	12 37.89	22.75	4.07	21 4.74	41 34.71
84	9	. .	35.	49.5	. .	. .	. .	. .	8 24 4.33	+32.53	+1.00	III.	5	3.17	−21 35.58	−23.33	− 5.48	8 24 37.86	−31 50 34.39

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(217) 49. Minutes of transit assumed as 17 instead of 18.

ZONE 217. FEBRUARY 23. B. BELT, −31° 53′. $D_o = -31° 28' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
85	7.8	. .	. .	. .	. .	. .	. .	38.	8 23 54.08	+32.53	+1.01	VII.	3	1.19	−10 37.45	−23.30	− 3.75	8 24 27.62	−31 39 34.50
86	9	. .	. .	. .	. .	. .	24.	39.	25 54.74	32.52	1.01	VII.	3	9.8	14 33.94	23.63	4.35	26 28.27	31 43 31.92
87	7.8	. .	. .	. .	. .	12.5	27.3	. .	27 57.81	32.52	0.99	VII.	8	3.32½	35 42.77	23.97	7.71	28 31.32	32 4 44.45
88	8	. .	. .	. .	46.	1.	. .	. .	8 29 46.20	+32.51	+1.01	V.	3	11.21	−15 41.43	−24.27	− 4.53	8 30 19.72	−31 44 40.23

ZONE 218. MARCH 7. B. BELT, −34° 23½′. $D_o = -34° 0' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	31.	46.	. .	. .	7 25 30.96	+27.20	+1.00	V.	5	8.21	−24 8.86	−11.96	− 5.83	7 25 59.16	−34 24 26.65
2	10	. .	. .	. .	. .	7.	22.	. .	26 51.76	27.19	1.01	VI.	3	11.15	15 38.23	12.18	4.17	27 19.96	15 54.58
3	10	. .	. .	. .	. .	. .	. .	27.	27 41.75	27.18	1.01	VII.	3	11.34	15 47.52	12.32	4.20	28 9.94	16 4.04
4	10	. .	. .	. .	55.	10.5	. .	. .	29 55.25	27.17	1.01	V.	1	10.56	5 30.74	12.69	2.26	30 23.43	5 45.69
5	6	. .	. .	. .	20.4	36.	51.	6.	31 20.56	27.16	0.99	VII.	8	7.24	37 39.45	12.93	8.52	31 48.71	38 0.90
6	8	. .	. .	. .	15.	30.	. .	. .	33 14.92	27.15	1.00	V.	6	9.3	28 0.89	13.26	6.60	33 43.07	28 20.75
7	9	. .	. .	. .	. .	. .	27.5	43.	34 57.36	27.13	1.00	VII.	6	6.5½	27 1.17	13.55	6.40	35 25.49	27 21.12
8	9	. .	. .	37.5	52.5	. .	. .	. .	36 52.57	27.12	1.00	V.	7	3.54½	30 55.58	13.86	7.17	37 20.69	31 16.61
9	10	. .	. .	. .	12.5	27.	. .	. .	38 12.23	27.12	1.00	V.	4	7.1½	18 29.58	14.10	4.74	38 40.35	18 48.42
10	10	. .	. .	. .	. .	. .	31.	46.	41 0.72	27.10	1.01	VII.	1	11.24	5 44.37	14.59	2.29	41 28.83	6 1.25
11	9	10.	25.3	. .	. .	. .	. .	. .	43 55.64	27.08	0.99	II.	9	8.45½	43 19.85	15.11	9.67	44 23.71	43 44.63
12	10	. .	. .	. .	. .	28.5	. .	. .	44 13.35	27.08	1.00	VI.	6	11.18	29 39.04	15.16	6.92	44 41.43	30 1.12
13	9	. .	. .	. .	. .	. .	19.	34.5	44 48.91	27.08	1.00	VII.	4	9.58	19 58.10	15.27	5.02	45 16.99	20 18.39
14	6.7	. .	. .	. .	. .	26.	41.5	57.	46 11.23	27.07	1.00	VII.	4	9.5	19 31.38	15.52	4.93	46 39.30	19 51.83
15	7	. .	2.5	17.5	33.3	. .	. .	. .	48 32.93	27.05	1.00	V.	6	5.47½	26 52.56	15.93	6.38	49 0.98	27 14.07
16	10	. .	. .	47.	2.	. .	. .	. .	50 2.11	27.04	1.00	IV.	4	7.3	18 30.39	16.20	4.74	50 30.15	18 51.33
17	9	. .	11.	26.	. .	. .	. .	. .	51 41.25	27.04	1.00	III.	7	4.24	31 10.47	16.52	7.23	52 9.29	31 34.22
18	9	. .	. .	. .	34.	49.	. .	. .	52 33.89	27.03	0.99	V.	7	7.5	32 31.64	16.67	7.49	53 1.91	32 55.80
19	.	. .	. .	. .	19.	. .	. .	. .	54 19.08	27.02	1.00	.	.	.	. . .	. .	. .	54 47.10	
20	9	. .	. .	. .	. .	16.	31.	. .	55 0.76	27.02	1.01	VI.	3	9.2	14 31.17	17.13	3.96	55 28.79	14 52.26
21	9	. .	. .	. .	. .	. .	. .	15.	55 29.74	27.01	1.01	VII.	3	12.24½	16 12.97	17.22	4.28	56 57.76	16 34.47
22	10	. .	. .	. .	. .	28.	43.	. .	12.75	27.01	1.00	VI.	4	6.9	18 2.94	17.54	4.63	57 40.76	18 25.11
23	10	. .	. .	. .	. .	45.5	0.05	. .	58 30.26	27.00	1.00	V.	6	8.12	28 5.43	17.78	6.62	7 58 58.26	28 29.83
24	9	. .	. .	. .	. .	8.	23.	. .	7 59 52.76	26.99	1.00	VI.	4	8.26½	19 12.27	18.04	4.87	8 0 20.75	19 35.18
25	8	. .	. .	35.5	51.	. .	. .	. .	8 1 50.75	26.98	0.98	IV.	10	4.18	46 6.09	18.40	10.23	2 18.71	46 34.72
26	10	. .	. .	. .	18.	. .	. .	. .	3 17.90	26.97	0.99	IV.	8	7.59	37 57.63	18.68	8.59	3 45.86	38 24.90
27	9	. .	. .	19.	. .	. .	. .	. .	4 34.17	26.97	1.00	III.	6	8.29	28 14.00	18.93	6.64	5 2.14	28 39.57
28	10	. .	. .	. .	. .	10.	25.	. .	4 54.76	26.96	1.00	VI.	6	4.37	26 16.85	18.98	6.25	5 22.72	26 42.08
29	10	. .	. .	. .	. .	26.	. .	. .	6 10.82	26.96	0.99	V.	8	5.22	36 38.40	19.22	8.33	6 38.77	37 5.95
30	8.9	. .	. .	18.	33.	. .	. .	. .	7 33.10	26.95	1.01	IV.	4	3.37	16 46.52	19.48	4.38	8 1.06	17 10.38
31	10	. .	. .	. .	. .	. .	28.	43.5	8 57.90	26.94	1.00	VII.	4	10.1	19 59.62	19.74	5.02	9 25.84	20 24.38
32	9	. .	. .	. .	. .	. .	. .	45.5	9 0.29	26.94	1.01	VII.	2	14.11	12 7.56	19.75	3.49	9 28.24	12 30.80
33	10	. .	. .	. .	. .	. .	. .	27.	10 41.63	26.93	1.00	VII.	5	7.00	23 27.55	20.07	5.69	11 9.56	23 53.31
34	11	. .	. .	. .	. .	. .	22.	. .	11 51.62	26.93	1.00	VI.	4	7.28	18 42.76	20.28	4.78	12 19.55	19 7.82
35	6.7	. .	. .	. .	. .	29.	44.	59.	13.79	26.92	1.01	VII.	2	4.00	6 59.49	20.52	2.52	13 41.62	7 22.53
36	9	. .	. .	. .	52.5	8.	23.	. .	14 52.68	26.91	1.00	VII.	5	9.38	24 47.22	20.83	5.96	15 20.59	25 14.01
37	9	. .	. .	. .	. .	4.	19.	. .	16 47.76	26.91	1.00	VI.	6	9.13	28 36.01	21.18	6.72	17 15.67	29 3.91
38	9	. .	. .	. .	. .	5.	20.5	. .	17 50.01	26.90	1.00	VI.	6	9.13	28 36.01	21.36	6.72	18 17.91	29 4.09
39	10	. .	. .	. .	. .	41.	56.	. .	19 25.76	26.89	1.01	VI.	3	11.47	15 54.37	21.65	4.21	19 53.66	16 20.23
40	9	. .	. .	. .	. .	. .	1.	16.	20 30.72	26.89	1.01	VII.	1	12.10	6 7.56	21.84	2.35	20 58.62	6 31.75
41	5.6	. .	. .	. .	. .	. .	13.	28.	8 21 43.57	+26.88	+0.99	VII.	8	5.23	−36 38.43	−22.05	− 8.33	8 22 11.44	−34 37 8.81

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(218) 6. Micrometer reading assumed as $8^{r}.3$ instead of $9^{r}.3$.
(218) 35. Transit over T. V assumed as at 29^{s} instead of 27^{s}.

ZONE 218. MARCH 7. B. BELT, −34° 23½′. D₀=−34° 0′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
42	9	. .	. .	. .	. .	. .	. .	53.	8 23 7.87	+26.88	+1.01	VII.	2	3.26	− 6 42.34	−22.29	− 2.46	8 23 35.76	−34 7 7.09
43	7	. .	. .	23.	38.	. .	. .	. .	26 38.07	26.86	1.01	IV.	2	4.12	7 6.07	22.88	2.54	27 5.94	7 31.49
44	9	. .	. .	. .	. .	53.0	8.	. .	27 38.01	26.86	0.99	VI.	7	7.46	32 52.15	23.05	7.57	28 5.86	33 22.77
45	8	. .	. .	9.3	24.3	. .	. .	. .	36 24.38	26.82	1.01	IV.	3	2.58	11 27.85	24.45	3.37	36 52.21	11 55.67
46	10	. .	. .	. .	. .	43.	58.	. .	37 27.76	26.82	1.01	VI.	1	10.45	5 25.01	24.50	2.22	37 55.59	5 51.73
47	10	. .	. .	31.	46.	. .	. .	. .	46.04	26.81	0.99	IV.	8	8.35	38 15.79	24.81	8.65	39 13.84	38 49.25
48	10	. .	. .	. .	. .	. .	. .	51.	40 5.61	26.81	1.00	VII.	5	10.28	25 12.43	25.01	6.04	40 33.42	25 43.48
49	10	. .	. .	. .	. .	59.	. .	. .	41 43.80	26.80	0.98	V.	9	11.38½	44 47.25	25.30	9.98	42 11.58	45 22.53
50	10	. .	. .	. .	14.5	30.	45.	. .	43 14.70	26.80	1.01	VI.	4	4.20	17 7.97	25.56	4.44	43 42.51	17 37.97
51	10	. .	. .	28.	43.5	. .	. .	. .	45 43.28	26.79	0.99	IV.	8	9.53	38 55.11	25.99	8.78	46 11.06	39 29.88
52	10	. .	. .	. .	. .	. .	57.	12.	46 26.61	26.79	1.00	VII.	6	8.57½	28 27.90	26.12	6.69	46 54.40	29 0.71
53	10	. .	. .	. .	. .	. .	. .	20.	47 34.75	26.78	1.01	VII.	3	10.6	15 3.15	26.33	4.05	48 2.54	15 33.53
54	10	. .	40.	55.5	10.5	. .	. .	. .	50 10.50	26.77	1.00	IV.	5	9.3½	24 30.35	26.78	5.90	50 38.27	25 3.03
55	10	. .	. .	4.5	19.5	. .	. .	. .	51 19.61	26.77	1.00	IV.	4	8.39	19 18.81	26.99	4.88	51 47.38	19 50.68
56	10	. .	. .	32.5	48.	. .	. .	. .	52 47.76	26.76	0.99	IV.	9	8.19	43 6.72	27.27	9.62	53 14.51	43 43.61
57	9	. .	. .	. .	57.	12.	. .	. .	54 56.79	26.76	0.98	V.	10	11.55	49 56.47	27.66	11.01	55 24.53	50 35.14
58	9	. .	. .	. .	. .	25.	40.2	. .	56 9.86	26.75	1.01	VI.	3	6.3½	13 1.16	27.89	3.66	56 37.62	13 32.71
59	9	. .	. .	. .	. .	57.	12.3	. .	57 41.90	26.75	1.00	VI.	6	5.1	26 28.94	28.18	6.30	58 9.65	27 3.42
60	10	. .	. .	. .	. .	16.4	31.5	. .	8 59 1.21	26.74	1.01	VI.	3	3.29	11 43.25	28.42	3.41	8 59 28.96	12 15.08
61	10	. .	. .	. .	. .	46.	. .	. .	9 0 24.93	26.74	1.01	V.	3	2.13	11 5.10	28.68	3.30	9 0 52.68	11 37.08
62	8	. .	. .	. .	. .	33.	. .	. .	2 17.80	26.73	0.98	V.	9	10.5	44 0.11	29.05	9.83	2 45.51	44 38.99
63	9	. .	. .	. .	. .	. .	59.5	14.5	4 29.22	26.73	1.01	VII.	1	12.47	6 26.22	29.41	2.39	4 56.96	6 58.02
64	10	. .	. .	. .	0.5	15.5	. .	. .	8 0.48	26.72	1.01	V.	3	11.40	15 51.01	30.03	4.19	8 28.21	16 25.23
65	9	. .	. .	. .	17.6	33.	. .	. .	11 17.63	26.71	0.99	V.	9	8.52	43 23.30	30.60	9.69	11 45.33	44 3.59
66	11	. .	. .	. .	. .	15.5	31.	. .	13 0.51	26.71	1.01	VI.	3	6.50½	13 24.86	30.89	3.72	13 28.23	13 59.47
67	8	. .	. .	. .	33.3	48.2	3.	. .	14 32.97	26.70	0.99	V.	8	7.24½	37 40.17	31.14	8.55	15 0.66	38 19.86
68	8	. .	. .	. .	. .	. .	13.	. .	15 42.63	26.70	1.00	VI.	4	9.36	19 47.32	31.34	4.97	16 10.33	20 23.62
69	8	. .	. .	. .	. .	. .	. .	0.	16 14.77	26.70	1.01	V.	3	7.9	13 34.36	31.42	3.76	16 42.48	14 9.54
70	8	. .	. .	. .	. .	. .	. .	56.	17 10.45	26.70	0.99	VII.	8	3.29	35 40.95	31.58	8.14	17 38.14	36 20.67
71	9	. .	. .	37.3	. .	8.	. .	. .	19 52.66	26.69	1.00	V.	7	2.45	30 20.55	32.03	7.08	20 20.35	30 59.66
72	6.7	. .	. .	. .	. .	12.	27.	. .	20 56.75	26.69	1.00	VI.	5	1.43	20 48.00	32.20	5.17	21 24.44	21 25.37
73	9	. .	. .	. .	4.	19.	. .	. .	23 3.84	26.69	0.99	V.	9	3.17	40 34.37	32.56	9.13	23 31.52	41 16.06
74	10	37.	52.3	7.2	. .	. .	. .	. .	26 22.53	26.68	0.99	III.	8	7.17	37 36.39	33.12	8.53	26 50.20	38 18.04
75	9	. .	14.5	30.	45.	. .	. .	. .	30 44.99	26.67	1.01	IV.	3	11.37	15 49.56	33.84	4.18	31 12.67	16 27.58
76	9	. .	. .	. .	. .	. .	46.5	2.	31 16.39	26.67	1.00	VII.	5	6.58	23 26.54	33.94	5.70	31 44.06	24 6.18
77	9	. .	. .	12.	27.	. .	. .	. .	33 27.08	26.67	1.00	IV.	6	11.14½	29 37.51	34.29	6.93	33 54.75	30 18.73
78	8.9	. .	. .	. .	. .	40.5	56.	. .	34 25.51	26.67	0.98	VI.	10	7.7	47 31.08	34.46	10.54	34 53.16	48 16.08
79	6.7	. .	. .	. .	54.	9.2	. .	. .	35 53.90	26.66	0.98	V.	10	8.52½	48 24.45	34.71	10.72	36 21.54	49 9.88
80	10	. .	. .	. .	. .	26.5	41.7	. .	37 11.35	26.66	1.00	VI.	5	6.59	23 27.35	34.93	5.70	37 39.01	24 7.98
81	11	. .	. .	5.	20.	. .	. .	. .	40 20.07	26.66	1.00	IV.	7	3.34	30 45.31	35.45	7.16	40 47.73	31 27.92
82	6.7	. .	23.2	38.4	. .	. .	. .	. .	41 53.52	26.66	1.00	IV.	4	7.40	18 49.05	35.72	4.80	42 21.18	19 29.57
83	10	. .	. .	. .	. .	. .	. .	7.5	42 22.28	26.66	1.01	VII.	3	6.44	13 21.29	35.79	3.71	42 49.95	14 0.79
84	9	. .	. .	35.5	51.	. .	. .	. .	44 50.80	26.65	0.99	IV.	7	10.9	34 4.49	36.22	7.83	45 18.44	34 48.54
85	9	. .	. .	. .	. .	. .	0.5	15.5	45 30.14	26.65	1.00	VII.	5	7.34	23 44.70	36.33	5.77	45 57.79	24 26.80
86	6.7	. .	. .	22.	37.2	52.4	. .	. .	47 37.24	26.65	1.01	V.	2	12.51	11 27.70	36.68	3.36	48 4.90	12 7.74
87	7.8	. .	32.	47.	2.2	. .	. .	. .	50 2.20	26.65	1.01	IV.	1	12.33	6 19.69	37.09	2.36	50 29.86	6 59.14
88	7.8	. .	. .	. .	. .	. .	. .	3.4	50 18.06	26.65	1.00	VII.	4	13.14	21 36.93	37.14	5.33	50 45.71	22 19.40
89	11	. .	. .	. .	52.	. .	. .	. .	52 52.07	26.65	1.01	IV.	4	5.00	17 28.37	37.57	4.50	53 19.73	18 10.44
90	7.8	. .	. .	. .	. .	. .	. .	2.	9 53 16.46	+26.64	+0.99	VII.	7	12.7½	−35 3.70	−37.65	− 8.02	9 53 44.09	−34 35 49.37

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 218. MARCH 7. B. BELT, −34° 23½′. D₀=−34° 0′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
91	9	. .	. .	. .	9.	24.	. .	. .	9 55 8.98	+26.64	+1.01	V.	3	6.50½	−13 25.03	−37.96	− 3.73	9 55 36.63	−34 14 6.72
92	9	. .	. .	39.5	55.	. .	. .	. .	56 54.83	26.64	1.01	IV.	2	6.28	8 14.64	38.26	2.73	57 22.48	8 55.63
93	9	. .	. .	. .	. .	. .	26.	41.	57 55.63	26.64	1.00	VII.	5	9.38	24 47.22	38.43	5.96	9 58 22.27	25 31.61
94	9	. .	. .	. .	32.5	48.	3.	. .	9 59 32.68	26.64	1.00	VI.	6	4.48	26 22.39	38.70	6.28	10 0 0.32	27 7.37
95	7	. .	. .	6.	21.	. .	. .	. .	10 1 21.10	+26.64	+1.01	IV.	4	2.23	−16 9.20	−39.01	− 4.24	10 1 48.75	−34 16 52.45

ZONE 219. MARCH 12. K. BELT, −35° 38′. D₀=−35° 14′ 40″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	54.8	. .	. .	. .	. .	8 33 10.24	+26.46	+0.98	.	10	11.45	−49 51.49	− 4.95	−11.84	8 33 37.68	−36 4 48.28
2	9.10	. .	. .	7.8	. .	. .	. .	. .	34 23.17	26.46	1.01	.	4	4.36	17 16.28	5.19	4.25	34 50.64	35 32 5.72
3	8.9	. .	. .	. .	4.5	19.6	. .	. .	35 4.43	26.45	1.01	.	3	1.3	10 29.86	5.32	2.74	35 31.89	25 17.92
4	8	. .	. .	23.8	39.0	54.5	. .	. .	36 39.14	26.45	1.01	.	2	9.5	9 33.81	5.63	2.53	37 6.60	24 21.97
5	9	. .	51.9	7.1	. .	. .	. .	. .	38 22.58	26.44	1.00	.	5	5.36	24 45.73	5.97	5.94	38 50.02	39 37.64
6	11	. .	18.9	. .	. .	. .	. .	. .	41 49.71	26.43	0.99	II.	8	5.12	36 33.18	6.65	8.67	42 16.13	35 51 28.50
7	9	. .	. .	. .	. .	42.8	. .	. .	42 27.36	26.43	0.98	V.	10	7.55	47 55.45	6.77	11.38	42 54.77	36 2 53.60
8	9.8	. .	. .	. .	38.8	. .	. .	. .	43 38.59	26.42	0.98	.	10	9.21	48 38.87	7.01	11.55	44 5.99	36 3 37.43
9	8	. .	. .	. .	. .	. .	. .	47.9	44 2.06	26.42	1.01	VII.	2	4.59	7 29.22	7.08	2.08	44 29.49	35 22 18.38
10	7.8	. .	47.8	3.3	18.6	. .	. .	. .	46 18.60	26.42	0.99	.	10	0.7	43 59.53	7.53	10.44	46 45.01	58 57.50
11	9.10	. .	. .	. .	. .	. .	51.8	. .	47 20.92	26.41	1.01	VI.	3	4.36	12 17.04	7.73	3.13	47 48.34	27 7.90
12	9	. .	. .	. .	29.6	. .	0.7	. .	48 29.75	26.40	1.01	.	3	8.30	14 15.27	7.96	3.55	48 57.16	29 6.78
13	9.10	. .	. .	. .	5.9	. .	. .	. .	53 5.85	26.39	0.99	.	7	8.8	33 3.47	8.87	7.85	53 33.23	48 0.19
14	8.9	. .	58.9	14.2	. .	. .	. .	. .	8 59 29.61	26.37	1.01	.	3	9.46	14 53.59	10.12	3.72	8 59 56.99	29 47.43
15	9.10	. .	. .	. .	24.5	. .	. .	. .	9 7 24.49	26.35	1.00	.	6	11.44	29 52.39	11.66	7.12	9 7 51.84	44 51.17
16	7.8	. .	. .	. .	. .	. .	. .	10.	8 15.19	26.35	1.02	VII.	1	11.6	5 35.28	11.82	1.65	8 42.56	20 28.75
17	9	. .	. .	. .	1.2	. .	. .	. .	11 1.19	26.34	1.00	.	6	11.30	29 45.33	12.35	7.09	11 28.53	44 44.77
18	9.10	. .	. .	. .	58.6	. .	. .	. .	11 58.63	26.34	1.02	.	1	12.49	6 27.76	12.54	1.84	12 25.99	21 22.14
19	9	. .	. .	18.1	33.7	. .	. .	. .	9 13 33.55	+26.33	+0.99	.	9	3.48	−40 50.06	−12.84	− 9.63	9 14 0.87	−35 55 52.58

ZONE 220. MARCH 16. K. BELT, −36° 53′.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	. .	43.3	. .	7 34 12.06	+23.38	+0.99	VI.	9	11.27	−44 41.26	. .	−11.37	7 34 36.43	
2	10	. .	15.8	31.2	. .	. .	. .	. .	37 46.93	23.36	1.01	III.	3	9.23	14 41.92	. .	3.31	38 11.30	
3	10	. .	. .	25.3	. .	. .	. .	. .	38 40.99	23.36	0.98	.	10	9.50	48 53.50	. .	12.54	39 5.33	
4	8.9	. .	. .	24.7	40.3	. .	. .	. .	39 40.26	23.35	0.99	.	9	11.20	44 37.98	. .	11.34	40 4.60	
5	11	. .	5.1	. .	. .	. .	. .	. .	41 36.38	23.34	1.00	II.	6	7.50	27 54.14	. .	6.78	42 0.72	
6	10.9	. .	. .	10.4	26.3	. .	. .	. .	43 26.15	23.33	0.99	.	7	9.4	33 31.71	. .	8.27	43 50.47	
7	10	. .	10.7	26.3	. .	. .	. .	. .	45 42.01	23.32	0.99	.	10	3.34	45 43.91	. .	11.65	46 6.32	
8	8.9	. .	. .	40.6	56.1	. .	. .	. .	46 56.16	23.31	1.01	.	1	4.36	2 19.18	. .	0.14	47 20.48	
9	8.9	. .	. .	. .	41.3	56.5	. .	. .	47 41.16	23.30	1.01	.	1	7.19	3 41.36	. .	0.49	48 5.47	
10	8	. .	1.3	17.1	32.8	. .	. .	. .	51 32.71	23.29	1.00	V.	6	7.38	27 48.28	. .	6.76	51 57.00	
11	8	. .	. .	. .	. .	29.3	45.0	. .	52 13.68	23.28	0.99	VI.	9	4.31	41 11.50	. .	10.38	52 37.95	
12	7.8	. .	. .	. .	37.8	53.3	. .	. .	53 37.77	23.27	1.00	IV.	5	8.42	24 19.52	. .	5.81	54 2.04	
13	7	56.9	12.6	28.2	43.6	. .	. .	. .	55 43.78	23.26	1.00	.	5	5.39	22 47.24	. .	5.41	56 8.03	
14	7	. .	. .	. .	. .	26.8	42.3	57.9	56 11.17	23.26	1.01	VII.	2	7.32	8 46.36	. .	1.76	56 35.44	
15	9.10	. .	. .	. .	39.6	55.3	. .	. .	57 39.67	23.25	1.00	VI.	5	6.44	23 19.77	. .	5.56	58 3.92	
16	9	. .	. .	18.7	34.3	. .	. .	. .	7 59 34.32	23.24	1.01	.	2	2.36	6 17.67	. .	1.14	7 59 58.57	
17	8.9	. .	. .	. .	. .	. .	. .	30.3	8 1 43.37	+23.23	+1.00	VII.	7	3.36	−30 45.76	. .	− 7.54	8 2 7.60	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM. At.	THERMOM. Ex.
1849.	h. m.	in.	°	°

REMARKS.

(219) 16. Transit over T. VII assumed as 1ˢ.0 instead of 10ˢ.

ZONE 220. MARCH 16. K. BELT, −36° 53′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	7	. .	. .	. .	. .	. .	14.7	30.3	8 2 43.31	+23.23	+0.98	VI.	10	2.38	−45 15.42	. .	−11.53	8 3 7.52	
19	9.10	. .	. .	. .	23.8	. .	. .	. .	4 23.87	23.22	1.01	. .	3	9.55	14 58.12	. .	3.37	4 48.10	
20	6.7	. .	. .	. .	. .	20.3	35.9	. .	5 4.63	23.21	1.00	VI.	5	3.16	21 34.88	. .	5.10	5 28.84	
21	6.7	. .	. .	. .	28.4	. .	59.8	. .	6 28.40	23.21	1.01	VI.	1	6.22	3 12.37	. .	0.36	6 52.62	
22	10	. .	. .	. .	. .	6.3	. .	. .	7 50.60	23.20	0.98	.	10	5.58	46 56.51	. .	12.00	8 14.78	
23	9	. .	59.2	14.2	. .	. .	. .	. .	9 30.15	23.19	1.00	.	6	2.56	25 26.15	. .	6.11	9 54.34	
24	7.8	26.9	42.7	58.2	. .	. .	. .	. .	12 13.70	23.18	1.00	.	5	10.19	25 8.43	. .	6.03	12 37.88	
25	11.10	. .	. .	. .	. .	. .	. .	59.3	12 12.36	23.18	0.99	VII.	7	4.34	31 15.02	. .	7.67	12 36.53	
26	7.8	. .	. .	. .	46.1	1.6	. .	. .	13 46.04	23.17	1.00	.	6	6.55	27 26.66	. .	6.66	14 10.21	
27	10	. .	. .	. .	5.4	. .	. .	. .	17 5.45	23.16	1.01	.	2	8.44	9 23.23	. .	1.93	17 29.62	
28	10	19.2	34.3	. .	. .	. .	. .	. .	25 5.90	23.12	0.99	.	7	10.35	34 17.60	. .	8.50	25 29.01	
29	9.10	. .	7.8	23.7	. .	. .	. .	. .	26 39.22	23.12	1.00	.	6	8.26	28 12.55	. .	6.86	27 3.34	
30	6.7	. .	53.7	9.2	25.0	. .	. .	. .	28 24.93	23.11	0.99	.	8	4.45	36 19.81	. .	9.04	28 49.03	
31	9	. .	. .	. .	. .	. .	24.5	. .	28 53.17	23.11	1.00	VI.	4	10.23	20 10.99	. .	4.73	29 17.28	
32	10	41.3	56.9	. .	. .	. .	. .	. .	31 28.29	23.10	0.97	III.	9	4.18	41 5.13	. .	10.37	31 52.38	
33	7.8	. .	36.2	51.9	7.4	. .	. .	. .	33 7.48	23.09	1.00	.	6	6.21	27 9.51	. .	6.58	33 31.57	
34	9	. .	. .	. .	49.9	. .	. .	. .	35 49.94	23.08	1.01	.	2	7.34	8 47.93	. .	1.78	36 14.03	
35	8	. .	. .	. .	. .	44.4	0.1	15.8	36 28.86	23.08	1.00	VI.	4	12.16	21 7.97	. .	4.96	36 52.94	
36	7.8	. .	. .	54.2	10.2	25.6	. .	. .	38 10.00	23.07	1.00	V.	6	10.53	29 26.61	. .	7.18	38 34.07	
37	6.7	. .	. .	. .	. .	. .	12.6	28.1	38 41.37	23.07	1.01	VII.	1	13.39	6 52.41	. .	1.28	39 5.45	
38	9	. .	2.2	17.5	. .	. .	. .	. .	42 33.35	23.06	0.99	III.	9	6.13	42 3.12	. .	10.63	42 57.40	
39	9	48.4	3.9	. .	. .	. .	. .	. .	44 35.14	23.05	1.01	III.	3	8.46	14 23.28	. .	3.20	44 57.20	
40	9	. .	49.3	4.9	. .	. .	. .	. .	45 20.55	23.05	1.00	.	5	11.31	25 44.73	. .	6.19	45 44.60	
41	10	. .	11.5	. .	. .	. .	. .	. .	46 42.73	23.04	1.01	III.	3	7.3	13 31.33	. .	2.99	47 6.78	
42	8	. .	. .	50.6	6.2	. .	. .	. .	50 6.20	23.03	1.02	.	1	6.55	3 29.26	. .	0.43	50 30.25	
43	9	. .	. .	. .	44.2	59.9	. .	. .	51 44.16	23.03	0.99	V.	8	9.28	38 42.44	. .	9.69	52 8.18	
44	9.10	. .	3.7	19.2	. .	. .	. .	. .	53 34.87	23.02	1.01	.	3	5.34	12 46.52	. .	2.79	53 58.90	
45	9.10	. .	20.8	36.2	. .	. .	. .	. .	54 52.00	23.02	0.99	.	9	5.36	41 44.53	. .	10.55	55 16.01	
46	9.10	14.2	29.8	. .	. .	. .	. .	. .	56 1.00	23.01	1.01	.	3	12.12	16 7.20	. .	3.67	8 56 25.02	
47	8.9	. .	18.8	34.3	. .	. .	. .	. .	8 59 49.95	23.00	1.02	.	1	7.15	3 39.34	. .	0.47	9 0 13.97	
48	9.10	. .	. .	. .	. .	23.8	. .	. .	9 0 8.22	23.00	1.01	VI.	4	4.01	16 58.37	. .	3.89	0 32.23	
49	8.9	. .	15.8	31.2	. .	. .	. .	. .	1 46.93	23.00	1.01	III.	4	1.26	15 40.40	. .	3.56	2 10.94	
50	9	. .	. .	43.2	58.8	. .	. .	. .	2 58.79	23.00	0.99	.	8	6.8	37 1.66	. .	9.23	3 22.78	
51	9.10	27.9	. .	59.2	. .	. .	. .	. .	8 14.88	22.98	0.99	.	8	3.51	35 52.57	. .	8.94	8 38.85	
52	6.7	. .	. .	. .	. .	50.0	. .	. .	8 34.36	22.98	1.00	V.	6	10.32	29 16.03	. .	7.14	8 58.34	
53	6	. .	. .	. .	. .	. .	52.2	. .	9 20.86	22.98	1.00	VII.	4	5.34	17 44.97	. .	4.09	9 44.84	
54	8.9	. .	1.9	17.6	. .	. .	. .	. .	11 33.18	22.98	1.01	.	4	3.37	16 46.52	. .	3.84	11 57.17	
55	10.9	. .	. .	4.8	20.4	. .	. .	. .	12 20.45	22.97	1.00	.	4	4.22	17 9.21	. .	3.93	12 44.42	
56	7	17.4	32.9	. .	. .	. .	. .	. .	13 4.23	22.97	1.00	III.	6	6.32	27 15.01	. .	6.60	14 28.20	
57	9	. .	. .	. .	. .	. .	29.6	. .	14 58.24	22.97	1.01	VI.	3	5.44	12 51.31	. .	2.81	15 22.22	
58	7	32.2	47.8	3.3	19.2	. .	. .	. .	17 19.10	22.96	0.99	.	8	6.42	37 18.81	. .	9.32	17 43.05	
59	9.10	. .	56.5	. .	. .	. .	. .	. .	22 27.83	22.95	0.99	III.	9	4.32	41 12.20	. .	10.40	22 51.77	
60	9	. .	. .	55.9	. .	26.9	. .	. .	26 11.45	22.95	1.01	.	1	8.28	4 16.15	. .	0.61	26 35.41	
61	10	. .	24.1	39.5	. .	. .	. .	. .	27 55.23	22.94	1.01	III.	3	11.25	15 43.44	. .	3.55	28 19.18	
62	10	. .	. .	. .	17.2	. .	. .	. .	28 17.23	22.94	1.01	.	1	12.1	6 3.55	. .	1.06	28 41.18	
63	10	. .	46.8	2.8	. .	. .	. .	. .	33 18.28	22.93	0.99	III.	7	6.51	32 24.58	. .	7.99	33 42.20	
64	9	. .	. .	15.0	30.5	. .	. .	. .	35 30.59	22.93	1.01	.	3	6.29	13 14.25	. .	2.91	35 54.53	
65	11	. .	9.4	24.7	. .	. .	. .	. .	36 40.47	22.93	1.01	III.	3	6.52	13 25.79	. .	2.95	37 4.41	
66	9	27.3	42.8	. .	. .	. .	. .	. .	9 38 14.09	+22.93	+1.00	.	5	5.31	−22 43.20	. .	−5.38	9 38 38.02	

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(220) 56. Minutes of transit assumed as 14 instead of 13.

ZONE 220. MARCH 16. K. BELT, −36° 53′—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
67	8.9	. .	. .	35.8	51.3	. .	. .	. .	9 38 51.35	+22.92	+0.99	.	7	8.10	−33 4.48	. .	− 8.17	9 39 15.26	
68	8.9	. .	. .	. .	. .	. .	31.3	46.8	39 59.90	22.92	0.99	.	8	7.29	37 42.50	. .	9.43	40 23.81	
69	9.8	. .	. .	33.5	49.1	. .	. .	. .	40 49.11	22.92	0.99	.	7	6.9	32 3.47	. .	7.89	41 12.02	
70	7.8	. .	. .	32.3	47.5	. .	. .	. .	9 41 47.73	+22.92	+1.00	.	6	5.28	−26 42.78	. .	− 6.46	9 42 11.65	

ZONE 221. MARCH 16. K. BELT, −34° 23′. D₀=−33° 57′ 40″.

1	9	. .	18.2	33.8	. .	. .	. .	. .	11 31 48.74	+23.22	+1.00	.	6	4.44	−26 20.61	− 1.61	− 6.27	11 32 12.96	−34 24 8.49
2	9	. .	. .	. .	. .	. .	25.0	40.0	31 54.70	23.22	1.01	VII.	3	2.35	11 15.73	1.60	3.26	32 18.93	9 0.59
3	8	. .	. .	. .	32.0	47.2	. .	. .	33 31.89	23.23	0.98	V.	10	9.0	48 28.23	1.84	10.86	33 56.10	46 20.93
4	9	. .	. .	. .	. .	58.9	. .	. .	37 43.69	23.24	0.98	V.	10	9.7	48 31.77	2.43	10.86	38 7.91	46 25.06
5	8	. .	. .	0.7	15.9	31.0	. .	. .	39 15.84	23.25	0.99	. .	8	3.53	35 53.58	2.63	8.24	39 40.08	33 44.45
6	7.8	. .	. .	. .	9.9	25.7	40.2	55.6	40 10.13	23.25	1.00	.	6	2.58	25 27.15	2.77	6.09	40 34.38	23 16.01
7	10	44.5	. .	14.8	29.8	. .	. .	. .	44 29.85	23.26	1.01	.	3	3.11	11 34.40	3.35	3.31	44 54.12	9 21.06
8	7	. .	. .	13.8	28.7	44.0	59.1	14.1	45 28.83	23.27	1.00	.	3	12.11	16 6.69	3.49	4.21	45 53.10	13 54.39
9	9	28.9	44.3	59.5	14.5	29.6	44.4	59.8	49 14.43	23.28	1.00	.	5	7.25	23 40.68	4.01	5.74	49 38.71	21 30.43
10	9	44.1	59.3	14.3	29.7	44.6	0.0	14.9	11 51 29.56	23.29	1.00	.	7	3.14	30 35.22	4.31	7.14	11 51 53.85	28 26.67
11	9	. .	. .	. .	28.5	. .	. .	. .	12 4 28.57	23.35	1.00	.	4	5.50	17 53.58	6.04	4.57	12 4 52.92	15 44.19
12	8	. .	22.2	37.2	52.5	7.3	22.8	38.0	13 52.38	23.39	0.99	.	9	7.48	42 51.08	7.27	9.69	14 16.76	40 48.04
13	6	. .	. .	. .	18.7	33.8	49.0	3.9	15 18.57	23.40	0.99	.	8	5.46	36 50.57	7.47	8.44	15 42.96	34 46.48
14	6.7	. .	. .	48.9	3.5	19.3	34.1	49.2	17 3.87	23.41	1.00	.	5	6.54	23 25.06	7.67	5.68	17 28.28	21 18.41
15	8	. .	. .	. .	47.8	. .	. .	. .	20 47.82	23.42	1.01	.	1	4.35	2 18.67	8.15	1.47	21 12.25	0 8.31
16	9	. .	. .	. .	12.1	. .	. .	. .	27 12.13	23.46	1.01	.	1	10.15	5 10.11	8.95	2.06	27 36.60	3 1.12
17	8.7	. .	. .	. .	. .	. .	. .	59.8	30 14.44	23.47	1.00	VII.	5	5.4	22 29.06	9.34	5.49	30 38.91	20 23.89
18	9	25.4	40.4	55.7	11.0	26.0	41.2	56.5	12 35 10.88	+23.50	+0.99	.	8	7.8	−37 31.91	− 9.93	− 8.58	12 35 35.37	−34 35 30.42

ZONE 222. MARCH 19. B. BELT, −41° 15′. D₀=−40° 51′ 50″.

1	8	. .	39.	55.3	12.5	. .	. .	. .	8 2 12.25	+21.86	+1.00	IV.	7	3.28	−30 42.27	− 6.55	− 9.07	8 2 35.11	−41 22 47.89
2	10	. .	20.	36.	. .	. .	. .	. .	5 53.00	21.84	0.99	III.	8	3.42	35 47.97	6.87	11.85	6 15.83	27 56.69
3	7	. .	. .	. .	. .	. .	54.	11.	6 20.91	21.84	1.00	VII.	6	8.53	28 25.79	6.91	7.84	6 43.75	20 30.54
4	9	. .	. .	. .	. .	. .	. .	17.3	7 27.38	21.84	1.00	VII.	6	10.7	29 2.81	7.01	8.16	7 50.22	21 7.98
5	9	. .	. .	. .	. .	. .	. .	15.5	8 25.81	21.83	1.01	VII.	4	4.34	17 14.60	7.10	1.90	8 48.65	9 13.60
6	9	. .	15.	32.	49.2	. .	. .	. .	10 48.71	21.82	0.99	IV.	7	8.12	33 5.49	7.31	9.38	11 11.52	25 12.18
7	9	. .	. .	. .	3.4	20.	. .	. .	12 3.42	21.81	1.00	V.	5	5.17	22 36.07	7.43	4.74	12 26.23	14 38.24
8	9	. .	. .	. .	. .	26.	43.	. .	13 9.53	21.80	1.00	VI.	6	10.57	29 28.39	7.53	8.41	13 32.33	21 34.33
9	9	. .	. .	. .	. .	. .	. .	44.	14 53.89	21.79	0.99	VII.	8	12.36	40 16.64	7.69	14.31	15 16.67	32 28.64
10	9	. .	. .	12.5	29.	45.3	. .	. .	16 28.97	21.79	1.00	V.	4	11.48	20 54.03	7.83	3.84	16 51.76	12 55.70
11	8	. .	37.	53.5	10.3	. .	. .	. .	18 10.24	21.78	0.99	IV.	9	3.56	40 54.10	7.98	14.61	18 33.01	33 6.69
12	9	. .	. .	. .	. .	. .	17.	33.5	18 43.74	21.78	1.01	VII.	3	10.55	15 27.71	8.03	0.99	19 6.53	7 26.73
13	6	. .	. .	. .	. .	31.	47.5	4.	19 14.10	21.77	0.98	VII.	10	7.32	47 43.25	8.08	17.94	19 36.85	39 59.27
14	10	. .	. .	. .	. .	. .	12.	29.	21 38.95	21.76	1.00	VII.	5	4.13	22 3.20	8.30	4.45	22 1.71	14 5.95
15	10	. .	30.	47.	. .	. .	. .	. .	23 3.46	21.75	1.00	III.?	6	2.50	25 23.05	8.43	− 6.22	23 26.21	17 27.70
16	6.7	. .	. .	47.	3.5	20.5	. .	. .	25 3.71	21.74	1.01	V.	2	7.38	8 49.87	8.61	+ 2.42	25 26.46	0 46.06
17	9	. .	. .	. .	. .	51.3	8.	. .	26 34.68	21.74	1.00	VI.	6	7.3	27 30.39	8.76	− 7.35	26 57.42	19 36.50
18	6.7	. .	. .	3.	20.	37.	. .	. .	28 20.04	21.73	1.00	VI.	4	5.56	17 56.31	8.92	− 2.27	28 42.77	9 57.50
19	10	. .	. .	59.	15.5	32.	. .	. .	8 30 15.54	+21.72	+1.01	V.	2	9.53	− 9 57.94	− 9.09	+ 1.83	8 30 38.27	−41 1 55.20

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(222) 13. Minutes of transit assumed as 20 instead of 19.

ZONE 222. MARCH 19. B. BELT, −41° 15′. D_0=−40° 51′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	9.10	. .	. .	. .	23.	40.	. .	. .	8 32 23.09	+21.71	+0.99	V.	9	4.7	−40 59.58	− 9.29	−14.66	8 32 45.79	−41 33 13.53
21	9	. .	. .	. .	30.	47.	. .	. .	34 30.25	21.70	1.00	VI.	4	10.25	20 11.95	9.49	3.47	34 52.95	12 14.91
22	9.10	. .	. .	57.5	14.	. .	. .	. .	36 14.09	21.70	1.00	IV.	5	11.10	25 34.14	9.66	6.31	36 36.79	17 40.11
23	9	. .	. .	. .	. .	37.	54.	. .	37 20.53	21.69	1,00	VI.	6	7.4	27 30.90	9.76	7.35	37 43.22	19 38.01
24	9	. .	. .	. .	. .	. .	17.	34.	38 43.97	21.69	1.00	VII.	4	7.26	18 41.32	9.89	2.68	39 6.66	10 43.89
25	9	. .	. .	43.	59.5	. .	. .	. .	40 59.56	21.68	0.99	IV.	7	6.27	32 12.54	10.11	9.89	41 22.23	24 22.54
26	6	. .	. .	. .	. .	. .	23.	40.	43 49.97	21.67	1.01	VII.	4	7.14	18 35.27	10.38	2.63	44 12.65	10 38.28
27	8	. .	. .	. .	56.	. .	. .	. .	44 56.09	21.66	1.00	IV.	4	8.20	19 9.22	10.48	2.92	45 18.75	11 12.62
28	9	. .	. .	. .	18.5	35.	. .	. .	45 18.51	21.66	1.01	V.	3	8.19	14 9.65	10.52	0.33	45 41.18	6 10.50
29	8	. .	30.	47.	. .	. .	. .	. .	48 3.45	21.65	1.00	III.	5	6.56	23 26.00	10.78	5.18	48 26.10	15 31.96
30	9	. .	. .	. .	. .	. .	46.	2.5	48 12.61	21.65	0.99	VII.	7	7.32	32 44.65	10.80	10.19	48 34.25	24 55.64
31	10	. .	. .	. .	. .	40.	. .	. .	50 23.31	21.65	0.98	V.	9	7.30	42 41.94	11.01	15.50	50 45.94	34 58.45
32	10	. .	. .	24.	41.	. .	. .	. .	53 40.75	21.64	0.98	IV.	10	5.47	46 50.97	11.33	17.55	54 3.37	39 9.85
33	7	. .	. .	. .	24.	40.5	58.	. .	56 24.20	21.63	1.00	VI.	5	9.8	24 32.32	11.59	− 5.75	55 46.83	41 16 39.66
34	8	. .	18.	35.	52.	. .	. .	. .	57 51.60	21.62	1.02	V.	1	11.28	5 46.84	11.73	+ 3.93	58 14.24	40 57 44.66
35	9	. .	. .	. .	. .	42.	59.	. .	8 59 25.52	21.61	0.98	VI.	9	5.54	41 53.30	11.88	−15.11	8 59 48.11	41 34 10.29
36	9	. .	. .	. .	. .	. .	. .	22.	9 0 32.03	21.61	0.99	VII.	7	6.21	32 8.84	11.99	9.86	9 0 54.63	24 20.69
37	9	. .	37.	53.	10.	. .	. .	. .	7 9.98	21.60	0.99	IV.	7	5.58	31 57.91	12.63	9.77	7 31.57	24 10.31
38	8	. .	. .	13.	29.5	. .	. .	. .	8 29.59	21.59	1.00	IV.	5	8.26	24 11.45	12.76	5.58	8 52.18	16 19.79
39	9	. .	. .	. .	49.	5.5	. .	. .	10 48.93	21.59	1.00	V.	6	7.16	27 37.18	12.99	7.40	11 11.52	19 47.57
40	9	. .	. .	10.5	28.	44.5	. .	. .	13 27.70	21.58	1.00	V.	5	4.58	22 26.49	13.24	4.65	13 50.28	14 34.38
41	6.7	. .	9.	26.	43.5	. .	. .	. .	15 42.81	21.58	0.98	IV.	9	4.6	40 59.15	13.46	−14.67	16 5.37	41 33 17.28
42	9	. .	. .	. .	. .	44.	0.5	. .	17 27.31	21.57	1.02	VI.	1	8.3	4 3.25	13.63	+ 4.82	17 49.90	40 56 2.06
43	9	. .	. .	. .	. .	15.	31.5	. .	19 58.26	21.57	0.98	VI.	9	10.19	44 6.93	13.87	−16.20	20 20.81	41 36 27.00
44	8	. .	. .	. .	. .	. .	48.	4.5	20 14.52	21.57	0.98	VII.	9	9.43½	43 48.65	13.90	16.05	20 37.07	36 8.60
45	9	. .	48.	4.5	. .	. .	. .	. .	23 21.20	21.56	1.00	III.	5	6.18	23 6.83	14.20	4.99	23 43.76	15 16.02
46	9	. .	. .	. .	21.	. .	. .	. .	24 20.90	21.56	0.99	IV.	8	7.38	37 47.04	14.30	12.96	24 43.45	30 4.30
47	9	. .	. .	. .	. .	31.	47.5	. .	25 14.28	21.56	1.00	VI.	5	5.12½	22 33.57	14.39	4.72	25 36.84	14 42.68
48	9	. .	. .	. .	. .	. .	. .	6.5	26 16.34	21.55	0.98	VII.	9	8.7	43 0.00	14.49	15.65	26 38.87	35 20.14
49	9.10	. .	. .	. .	. .	16.5	33.3	. .	28 59.95	21.55	1.01	VI.	3	11.31	15 46.23	14.75	1.14	29 22.51	7 52.12
50	10	. .	23.	39.5	. .	. .	. .	. .	30 56.11	21.55	0.99	III.	6	9.22	28 40.71	14.94	7.97	31 18.65	20 53.62
51	9	. .	9.5	26.	43.	. .	. .	. .	33 42.81	21.54	0.99	IV.	6	10.12	29 6.00	15.21	8.19	34 5.34	21 19.40
52	8	. .	. .	46.	2.5	. .	. .	. .	35 2.59	21.54	1.00	IV.	5	11.1	25 29.60	15.34	6.27	35 25.13	17 41.21
53	10	. .	. .	. .	. .	. .	. .	56.5	35 6.51	21.54	0.99	VII.	7	8.53	33 25.49	15.35	−10.55	35 29.04	25 41.39
54	9	. .	. .	. .	. .	. .	13.5	29.5	36 40.03	21.54	1.01	VII.	2	9.57	9 59.36	15.50	+ 1.82	37 2.58	41 2 3.04
55	8	. .	. .	3.2	20.	. .	. .	. .	39 19.91	21.53	1.02	IV.	1	12.59	6 32.80	15.76	+ 3.57	39 42.46	40 58 34.99
56	10	. .	. .	52.	9.	. .	. .	. .	42 8.86	21.53	1.00	IV.	4	11.40	20 50.07	16.04	− 3.80	42 31.39	41 12 59.91
57	10	. .	. .	. .	. .	30.5	47.5	. .	43 14.02	21.53	0.99	VI.	7	8.40	33 19.31	16.14	10.50	43 36.54	25 35.95
58	9	26.	43.	59.5	. .	. .	. .	. .	47 16.02	21.52	1.01	III.	4	2.41½	16 18.46	16.53	1.42	47 38.55	8 26.41
59	9	54.2	11.	27.5	44.	. .	. .	. .	51 44.17	21.52	0.99	IV.	8	5.3	36 28.88	16.96	12.24	52 6.68	28 48.08
60	10	. .	. .	. .	47.	4.	. .	. .	53 47.16	21.52	0.99	V.	7	4.25	31 10.95	17.15	9.34	54 9.67	23 27.44
61	9	. .	. .	9.	25.5	. .	. .	. .	55 25.60	21.52	1.00	IV.	5	3.44	21 49.25	17.31	4.31	55 47.12	14 0.87
62	9	. .	. .	. .	6.5	. .	. .	. .	58 6.40	21.52	0.99	IV.	8	7.8	37 31.91	17.57	12.81	58 28.91	29 52.29
63	8	. .	. .	. .	. .	. .	10.	26.8	9 58 36.75	21.52	0.99	VII.	7	10.45	34 21.97	17.62	11.07	9 58 59.26	26 40.66
64	10	. .	. .	. .	. .	51.5	. .	. .	10 0 34.80	21.52	0.98	V.	9	12.36	45 16.24	17.81	−16.78	10 0 56.30	37 40.83
65	10	. .	. .	. .	18.3	35.	. .	. .	2 18.41	21.52	1.01	V.	2	10.58	10 30.72	17.99	+ 1.56	2 40.94	41 2 37.15
66	7	. .	. .	. .	57.	13.3	30.	. .	3 56.82	21.52	1.02	VI.	1	12.32½	6 19.14	18.15	+ 3.69	4 19.36	40 58 23.60
67	9	. .	. .	54.	10.5	27.3	. .	. .	10.63	21.52	1.00	V.	5	5.13½	22 34.30	. .	− 4.72		
68	5.6	. .	. .	. .	. .	20.	37.	53.5	10 8 3.53	+21.52	+0.99	VII.	7	3.7	−30 31.02	−18.58	− 8.96	10 8 26.04	−41 22 48.56

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(222) 33. Minutes of transit assumed as 55 instead of 56.

ZONE 222. MARCH 19. B. BELT, −41° 15′. D₀=−40° 51′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
69	6	. .	. .	26.	42.5	58.7	. .	. .	10 11 42.45	+21.52	+1.02	V.	1	6.5	− 3 3.98	−18.97	+ 5.32	10 12 4.99	−40 55 7.63
70	5.6	. .	. .	. .	. .	47.5	3.5	. .	15 30.57	21.52	1.02	VI.	1	3.31	1 46.09	19.39	+ 5.96	15 53.11	40 53 49.52
71	6	. .	. .	. .	. .	10.	26.5	43.	16 53.29	21.52	1.00	VII.	4	8.57	19 27.21	19.54	− 3.07	17 15.81	41 11 39.82
72	9	29.5	46.	2.5	. .	. .	. .	. .	20 19.26	21.52	1.00	III.	5	10.8	25 2.81	19.91	6.03	20 41.78	17 18.75
73	9	. .	. .	. .	. .	24.	40.5	. .	21 7.28	21.52	1.00	VI.	5	5.3	22 28.78	20.00	4.68	21 29.80	14 43.46
74	10	. .	. .	. .	59.	16.	. .	. .	22 59.08	21.53	0.98	VI.	9	6.50	42 21.54	20.19	15.34	23 21.59	34 47.07
75	8	. .	. .	. .	. .	36.5	53.	. .	24 19.77	21.53	0.99	VI.	7	12.26	35 13.26	20.33	−11.54	24 42.29	41 27 35.13
76	8	. .	10.	26.4	43.	. .	. .	. .	27 43.07	21.53	1.02	IV.	1	12.45	6 25.74	20.68	+ 3.64	28 5.62	40 58 32.78
77	9	. .	. .	14.5	32.	48.5	. .	. .	31 31.65	21.53	0.99	V.	7	10.12½	34 6.18	21.07	−10.93	31 53.17	41 26 28.18
78	9	. .	. .	. .	. .	3.	20.	. .	32 46.51	21.53	0.98	VI.	9	11.38½	44 47.01	21.21	16.54	33 8.02	37 14.76
79	9	. .	0.5	16.5	33.3	. .	. .	. .	35 33.41	21.54	1.01	IV.	3	9.44	14 52.58	21.49	0.68	35 55.96	7 4.75
80	10	. .	. .	. .	3.	20.	. .	. .	37 3.22	21.54	1.00	V.	5	7.35	23 45.66	21.64	5.35	37 25.76	16 2.65
81	10	. .	46.5	3.3	. .	. .	. .	. .	39 19.83	21.54	1.01	III.	4	4.35	17 15.71	21.87	1.91	39 42.38	9 29.48
82	10	. .	. .	. .	. .	. .	2.5	19.	39 29.16	21.54	1.00	VII.	6	5.35	26 45.65	21.89	6.97	39 51.70	19 4.51
83	10	. .	. .	. .	16.	32.5	. .	. .	41 15.98	21.55	1.00	V.	5	3.56	21 25.23	22.07	4.10	41 38.53	13 41.40
84	10	. .	. .	. .	. .	37.	53.	. .	42 20.02	21.55	0.98	VI.	9	6.12	42 2.38	22.17	−15.16	42 42.55	41 34 29.71
85	9	. .	. .	. .	. .	41.	57.5	. .	44 24.30	21.55	1.02	VI.	2	4.41	7 20.39	22.38	+ 3.18	44 46.87	40 59 29.59
86	8	43.	59.3	16.	. .	. .	. .	. .	47 32.66	21.56	1.00	III.	4	11.25	20 42.43	22.69	− 3.73	47 55.22	41 12 58.85
87	9	. .	. .	. .	. .	. .	21.5	38.	47 48.26	21.56	1.01	VII.	3	5.26	12 41.81	22.72	+ 0.45	48 10.83	4 54.08
88	9	. .	. .	. .	. .	45.	1.4	. .	49 28.23	21.56	1.00	VI.	5	4.19	22 6.60	22.89	− 4.47	49 50.79	14 23.96
89	8	. .	. .	. .	. .	2.	18.3	34.5	50 45.03	21.56	1.00	VII.	5	3.55½	21 54.37	23.01	4.37	51 7.59	14 11.75
90	5	. .	. .	37.	54.	10.3	. .	. .	52 53.75	21.57	0.99	V.	7	7.54	32 56.34	23.22	10.28	53 16.31	25 19.84
91	9	. .	. .	39.	56.	12.4	. .	. .	54 55.72	21.57	0.98	V.	10	9.58	48 57.46	23.42	−18.59	55 18.27	41 29.47
92	9	43.	0.	16.3	33.	. .	. .	. .	58 32.97	21.58	1.01	IV.	3	7.7	13 33.41	23.78	+ 0.02	58 55.56	5 47.17
93	10	. .	. .	. .	33.	49.5	. .	. .	10 59 32.91	+21.58	+0.99	V.	7	4.24	−31 10.45	−23.88	− 9.34	10 59 55.48	−41 23 33.67

ZONE 223. MARCH 22. K. BELT, −38° 8′. D₀=−37° 45′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	40.2	. .	. .	. .	. .	8 14 56.10	+22.06	+1.00	III.	5	5.54	−22 54.73	− 4.33	− 5.32	8 15 19.16	−38 8 14.38
2	10	30.9	46.2	. .	. .	. .	. .	. .	16 18.21	22.06	1.00	III.	4	4.14	17 5.11	4.57	− 3.49	16 41.27	38 2 23.17
3	7.8	. .	. .	5.2	21.0	. .	. .	. .	17 21.04	22.06	1.02	.	1	5.58	3 0.51	4.76	+ 0.86	17 44.12	37 48 14.41
4	9.10	. .	. .	. .	. .	58.0	13.9	. .	17 42.09	22.05	1.01	.	3	5.32	12 45.51	4.83	− 2.12	18 5.15	37 58 2.46
5	8.9	. .	52.6	8.5	. .	. .	. .	. .	20 24.48	22.04	0.98	.	10	9.26	48 41.40	5.31	13.93	20 47.50	38 34 10.64
6	9.10	. .	. .	. .	23.8	. .	. .	. .	22 23.63	22.03	0.99	.	9	8.21	43 7.72	5.67	12.01	22 46.65	28 35.40
7	9.10	. .	. .	22.2	37.9	. .	. .	. .	23 38.04	22.03	1.00	.	4	12.4	21 2.17	5.89	4.72	24 1.07	6 22.78
8	9	. .	38.5	54.5	. .	. .	. .	. .	25 10.43	22.02	0.98	.	10	8.2	47 59.05	6.17	13.69	25 33.43	33 28.91
9	7.8	. .	. .	. .	29.2	45.0	. .	. .	25 29.00	22.02	0.98	.	10	8.26	48 11.15	6.23	12.76	25 52.00	33 40.14
10	9.10	. .	. .	. .	. .	. .	33.0	49.1	26 1.18	22.02	0.98	.	10	8.29	48 12.66	6.32	12.76	26 24.18	33 41.74
11	6.7	. .	. .	. .	41.0	57.2	12.9	. .	27 41.10	22.01	0.99	.	7	11.43	34 51.88	6.63	− 9.24	28 4.10	38 20 17.75
12	9.10	. .	. .	. .	. .	. .	. .	1.2	28 13.89	22.01	1.01	VII.	1	10.11	5 7.47	6.72	+ 0.22	28 36.91	37 50 23.97
13	9	. .	. .	. .	52.9	. .	. .	. .	29 52.91	22.00	1.02	.	1	2.55	1 28.24	7.02	+ 1.33	30 15.93	46 43.93
14	9	. .	. .	. .	. .	38.2	53.9	. .	30 22.19	22.00	1.01	.	3	2.1	10 59.11	7.11	− 1.57	30 45.20	37 56 17.79
15	8	32.4	48.4	4.4	20.4	. .	. .	. .	37 20.27	21.97	0.99	.	8	4.3	35 58.63	8.36	9.62	37 43.23	38 21 26.61
16	8.9	. .	. .	. .	58.2	14.3	. .	. .	37 58.29	21.97	1.00	.	6	10.3	29 1.46	8.47	7.31	38 21.26	14 27.24
17	9	. .	47.5	3.3	. .	. .	. .	. .	40 19.28	21.96	0.99	.	7	7.23	32 40.77	8.89	8.53	40 42.23	18 8.19
18	8	53.1	8.9	. .	. .	. .	. .	. .	41 40.83	21.96	0.99	I.	8	7.57	37 56.00	9.14	10.29	42 3.78	23 25.43
19	8	. .	. .	. .	. .	53.2	9.1	. .	41 37.28	21.96	0.99	V.	9	4.7	40 59.59	9.13	11.31	42 0.23	26 30.03
20	9	. .	. .	34.8	50.2	. .	. .	. .	8 42 50.41	+21.95	+0.99	.	8	10.59	−39 28.40	− 9.36	−10.79	8 43 13.35	−38 24 58.55

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

Zone 223. March 22. K. Belt, −38° 8′. D_0 = −37° 45′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9	. .	. .	. .	23.2	. .	. .	. .	8 43 23.15	+21.95	+0.99	.	7	8.5	−33 1.96	− 9.46	− 8.64	8 43 46.09	−38 18 30.06
22	8	. .	. .	. .	. .	5.8	. .	. .	43 49.82	21.94	0.98	V.	10	11.32	49 44.87	9.53	14.29	44 12.74	35 18.69
23	8	. .	. .	51.7	7.6	. .	. .	. .	45 7.63	21.94	1.00	.	4	7.51	18 54.59	9.77	4.05	45 30.57	4 18.41
24	7	53.8	9.8	. .	. .	. .	. .	. .	46 41.52	21.94	1.00	II.	5	8.28	24 12.18	10.06	5.74	47 4.46	9 37.98
25	10	. .	53.2	. .	. .	. .	. .	. .	48 25.02	21.93	1.00	.	6	8.22	28 10.53	10.37	7.05	48 47.95	13 37.95
26	10	. .	. .	. .	. .	. .	. .	28.0	48 40.69	21.93	0.98	VII.	1	9.24	44 43.77	10.42	12.58	49 3.60	30 16.77
27	9	. .	3.1	18.9	35.0	. .	. .	. .	51 34.92	21.92	1.00	.	5	8.55	24 26.07	10.95	5.82	51 57.84	9 52.84
28	9	. .	. .	. .	0.2	15.6	. .	. .	55 59.91	21.91	0.99	V.	7	11.30	34 45.26	11.76	9.22	56 22.81	20 16.24
29	10	. .	. .	. .	. .	3.9	. .	. .	55 48.00	21.91	1.00	.	6	10.53	29 26.67	11.72	7.46	56 10.91	14 55.85
30	9	. .	. .	41.7	57.3	. .	. .	. .	56 57.48	21.91	1.01	.	3	11.23	15 42.49	11.94	3.03	57 20.40	1 7.46
31	9	. .	. .	. .	. .	. .	. .	48.3	57 0.78	21.91	1.01	VII.	4	6.1	17 58.51	11.95	3.77	57 23.70	3 24.23
32	10	. .	. .	. .	. .	. .	. .	26.4	57 38.73	21.91	1.00	VII.	6	5.28	26 42.16	12.06	6.56	58 1.64	12 10.78
33	10	. .	. .	. .	. .	50.9	. .	. .	8 59 35.05	21.90	1.01	.	4	5.6	17 31.40	12.43	3.61	8 59 57.96	38 2 57.44
34	10	. .	. .	. .	. .	44.5	. .	. .	9 0 28.69	21.90	1.01	.	3	3.55	11 56.59	12.59	1.87	9 0 51.60	37 57 21.05
35	9	. .	. .	. .	. .	20.8	36.4	. .	1 4.74	21.89	1.00	V.	6	7.8	27 33.14	12.70	6.84	1 27.63	38 13 2.68
36	9	. .	. .	8.2	23.4	. .	. .	. .	2 23.77	21.89	1.00	.	5	10.33	25 15.49	12.94	6.08	2 46.66	10 44.51
37	9	7.8	. .	39.6	. .	. .	. .	. .	3 55.46	21.89	1.00	.	5	5.39	22 47.24	13.22	5.29	4 18.35	8 15.75
38	9	. .	. .	58.9	14.8	. .	. .	. .	6 14.78	21.88	0.99	.	7	10.10	34 4.99	13.65	8.99	6 37.65	38 19 37.63
39	8	. .	. .	52.4	8.4	. .	. .	. .	7 8.37	21.88	1.01	.	3	8.43	14 21.82	13.81	2.60	7 31.26	37 59 48.23
40	10	. .	. .	47.2	2.8	. .	. .	. .	8 2.96	21.88	1.01	.	2	8.9	9 5.58	13.98	0.98	8 25.85	54 30.54
41	5	. .	47.5	3.2	19.2	. .	. .	. .	9 19.19	21.87	1.01	.	3	2.47	11 22.31	14.21	1.68	9 42.07	37 56 48.20
42	10	. .	. .	. .	9.0	. .	. .	. .	10 9.08	21.87	1.01	.	4	3.28	16 41.97	14.36	3.35	10 31.96	38 2 9.68
43	8	. .	42.5	58.1	. .	. .	. .	. .	12 14.20	21.87	0.99	.	8	10.40	39 18.82	14.75	10.73	12 37.06	24 54.30
44	10	. .	. .	. .	58.5	. .	. .	. .	12 58.50	21.86	1.00	.	6	8.59	28 29.19	14.88	− 7.14	13 21.36	38 14 1.21
45	10	. .	39.8	55.3	. .	. .	. .	. .	16 11.35	21.86	1.02	.	1	8.5	4 4.56	15.46	+ 0.55	16 34.23	37 49 29.47
46	10	. .	. .	56.6	11.8	. .	. .	. .	17 12.16	21.86	1.01	.	2	9.10	9 36.33	15.65	− 1.14	17 35.03	37 55 3.12
47	9	. .	13.5	29.1	. .	. .	. .	. .	22 45.19	21.84	0.99	.	8	3.24	35 38.96	16.65	9.51	23 8.02	38 21 15.12
48	10	. .	. .	. .	48.9	. .	. .	. .	24 48.87	21.84	0.99	.	7	3.58	30 57.40	17.01	7.96	25 11.70	16 32.37
49	9	. .	. .	19.1	34.8	. .	. .	. .	25 34.90	21.84	0.99	.	7	4.12	31 4.47	17.16	8.00	25 57.73	16 39.63
50	8	. .	10.5	26.6	. . .	. .	. .	. .	26 42.46	21.84	0.99	.	9	6.57	42 25.37	17.35	11.79	27 5.29	38 28 4.51
51	9	. .	. .	. .	. .	. .	23.4	39.1	26 51.58	21.84	1.01	VII.	3	6.10	13 4.05	17.37	2.21	27 14.43	37 58 33.63
52	10	. .	24.9	40.8	. .	. .	. .	. .	28 56.72	21.83	1.00	.	6	8.54	28 26.67	17.75	− 7.14	29 19.55	38 14 1.56
53	10	. .	. .	48.8	4.3	. .	. .	. .	35 4.48	21.83	1.02	.	1	7.8	3 35.81	18.82	+ 0.72	35 27.33	37 49 3.91
54	10	. .	. .	. .	. .	. .	54.3	. .	35 22.50	21.83	0.99	.	8	7.26	37 40.99	18.87	−10.22	35 45.32	38 23 20.08
55	10	. .	. .	32.8	. .	. .	. .	. .	37 48.70	21.82	1.00	.	5	3.30	21 42.19	19.30	4.93	38 11.52	38 7 16.42
56	10	. .	. .	. .	30.0	46.0	. .	. .	38 30.13	21.82	1.01	.	2	6.49	8 25.24	19.42	0.76	38 52.96	37 53 55.42
57	9	37.9	54.1	. .	. .	. .	. .	. .	43 25.77	21.81	1.00	.	6	11.14	29 37.26	20.28	7.51	43 48.58	38 15 15.05
58	9	. .	. .	58.0	13.8	. .	. .	. .	44 13.88	21.81	1.00	.	5	5.43	22 49.25	20.42	− 5.29	44 36.69	38 8 24.96
59	9	. .	. .	19.5	35.3	. .	. .	. .	49 35.33	21.81	1.02	.	1	4.33	2 17.66	21.37	+ 1.11	49 58.16	37 47 47.92
60	9	20.8	36.1	52.3	. .	. .	. .	. .	55 8.20	21.80	1.00	.	6	4.36	26 16.58	22.33	− 6.43	55 31.00	38 11 55.34
61	10	. .	. .	. .	. .	53.0	. .	. .	55 37.06	21.80	0.99	.	9	2.57	40 24.35	22.42	11.11	55 59.85	26 7.88
62	7	. .	. .	46.1	2.3	18.3	. .	. .	57 2.16	21.80	0.98	.	10	7.12	47 33.83	22.67	13.57	57 24.94	33 20.07
63	10	. .	. .	. .	12.5	. .	. .	. .	9 58 12.40	21.80	0.99	.	8	7.35	37 45.53	22.88	10.24	9 58 35.19	23 28.65
64	7	6.0	22.3	37.9	. .	. .	. .	. .	10 3 53.85	21.80	1.00	.	5	9.38	24 47.75	23.86	5.94	10 4 16.65	10 27.55
65	9	. .	. .	21.0	. .	. .	. .	. .	4 36.93	21.80	0.99	.	7	11.31	34 45.83	23.99	9.22	4 59.72	20 29.04
66	9	. .	. .	. .	49.2	. .	. .	. .	8 48.99	21.80	0.98	.	10	5.57	46 56.01	24.71	13.36	9 11.77	32 44.08
67	10	. .	4.8	20.7	. .	. .	. .	. .	15 36.62	21.80	1.00	.	6	10.22	29 11.04	25.88	− 7.38	15 59.42	38 14 54.30
68	9	. .	. .	11.5	27.6	. .	. .	. .	17 27.48	21.80	1.02	.	1	7.20	3 41.86	26.20	+ 0.68	17 50.30	37 49 17.38
69	10	. .	. .	8.9	. .	. .	. .	. .	10 18 24.77	+21.80	+1.01	.	2	8.16	− 9 9.11	−26.36	− 0.99	10 18 47.58	−37 54 46.46

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1849. h. m.	in.	°	°

REMARKS.

ZONE 223. MARCH 22. K. BELT, −38° 8′. D$_\circ$=−37° 45′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	10	. .	. .	. .	. .	. .	3.0	. .	10 18 58.09	+21.80	+1.01	VI.	2	8.15	− 9 8.33	−26.46	− 0.99	10 19 20.90	−37 54 45.78
71	7	. .	. .	. .	. .	44.2	. .	. .	19 28.22	21.80	0.98	V.	10	12.19	50 8.56	26.55	14.46	19 51.00	38 35 59.57
72	9	. .	. .	33.2	49.0	. .	. .	. .	20 49.06	21.80	1.01	.	2	11.2	10 32.81	26.78	1.42	21 11.87	37 56 11.01
73	9	. .	. .	25.3	41.3	. .	. .	. .	21 41.28	21.80	1.00	.	4	13.27	21 44.01	26.93	4.94	22 4.08	38 7 25.88
74	9	. .	. .	. .	38.9	. .	. .	. .	22 38.87	21.80	1.00	.	6	13.9	30 35.24	27.09	7.84	23 1.67	16 20.17
75	9	. .	. .	. .	33.2	. .	. .	. .	23 33.16	21.80	0.99	.	7	6.2	31 59.94	27.25	8.30	23 55.95	38 17 45.49
76	9	. .	. .	. .	. .	39.8	. .	. .	25 23.98	21.81	1.01	V.	3	5.19	12 38.88	27.56	2.07	25 46.80	37 58 18.51
77	10	. .	. .	. .	. .	. .	37.7	. .	26 5.82	21.81	1.01	.	3	10.36	15 18.81	27.68	2.90	26 28.64	38 0 59.39
78	11	. .	. .	. .	. .	. .	42.8	. .	32 11.03	21.81	0.99	VII.	9	8.1	42 57.02	28.72	11.99	32 33.83	28 47.73
79	8	39.3	55.3	11.2	. .	. .	. .	. .	36 27.09	21.81	1.00	.	6	13.3	30 32.21	29.44	− 7.82	36 49.90	38 16 19.47
80	9	. .	. .	. .	56.9	. .	. .	. .	40 56.93	21.82	1.02	.	1	9.55	5 1.02	30.20	+ 0.29	41 19.77	37 50 40.93
81	7.8	. .	. .	52.8	9.0	. .	. .	. .	42 8.82	21.82	0.99	.	8	5.44	36 49.56	30.40	− 9.91	42 31.63	38 22 39.87
82	9	. .	. .	35.7	51.8	. .	. .	. .	44 51.66	21.83	0.99	.	8	12.23	40 10.74	30.85	11.05	45 14.48	26 2.64
83	8	. .	48.2	3.8	20.2	. .	. .	. .	46 19.97	21.83	0.99	.	7	9.16	33 37.76	31.09	8.83	46 42.79	38 19 27.68
84	8	. .	. .	. .	19.1	35.3	. .	. .	47 19.32	21.83	1.01	.	2	13.14	11 39.36	31.26	1.76	47 42.16	37 57 22.38
85	10	. .	6.6	22.2	. .	. .	. .	. .	49 38.21	21.83	1.01	.	3	3.0	11 28.86	31.65	1.71	50 1.05	57 12.22
86	9	. .	16.9	32.6	. .	. .	. .	. .	50 48.56	21.83	1.01	.	2	7.56	8 59.02	31.84	0.94	51 11.40	37 54 41.80
87	10	. .	28.9	. .	. .	. .	. .	. .	54 0.75	21.84	0.99	III.	8	7.50	37 53.02	32.37	10.29	54 23.58	38 23 45.68
88	10	. .	. .	. .	. .	30.9	. .	. .	55 14.96	21.84	0.99	V.	8	10.00	38 58.58	32.57	10.66	55 37.79	24 51.81
89	10	. .	. .	. .	. .	. .	40.7	. .	10 56 8.87	21.85	1.00	VI.	6	6.12	27 4.71	32.73	6.69	10 56 31.72	12 54.13
90	10	. .	. .	10.2	26.8	. .	. .	. .	11 2 26.42	21.86	0.99	.	8	5.55	36 55.10	33.76	9.96	11 2 49.27	22 48.82
91	10	. .	. .	. .	57.0	. .	. .	. .	3 56.89	21.86	0.99	.	8	8.33	38 14.78	34.02	−10.42	4 19.74	38 24 9.22
92	9	. .	. .	. .	. .	. .	51.2	. .	4 19.27	21.86	1.01	VI.	1	10.23	5 13.87	34.08	+ 0.23	4 42.14	37 50 57.72
93	10	. .	. .	. .	6.1	. .	. .	. .	6 6.15	21.87	1.01	.	2	11.53	10 58.52	34.37	− 1.54	6 29.03	37 56 44.43
94	10	. .	. .	16.7	. .	. .	. .	. .	7 32.65	21.87	0.98	.	9	11.49	44 52.61	34.61	12.68	7 55.50	38 30 49.90
95	8	. .	. .	5.0	21.0	. .	. .	. .	8 20.88	21.87	0.98	.	9	11.44	44 50.09	34.74	12.66	8 43.73	30 47.49
96	8	. .	. .	30.9	46.9	. .	. .	. .	11 14 46.84	+21.89	+0.99	.	7	4.18	−31 7.49	−35.78	− 8.01	11 15 9.72	−38 17 1.28

ZONE 224. MARCH 22. K. BELT, −35° 1′. D$_\circ$=−34° 37′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	29.4	44.7	. .	. .	. .	12 34 44.67	+22.41	+0.99	.	7	9.56	−33 57.93	−14.52	− 8.03	12 35 8.07	−35 11 20.48
2	9	. .	29.9	45.5	. .	. .	. .	. .	35 0.66	22.41	0.99	.	10	5.8	46 31.30	14.56	10.94	35 24.06	35 23 56.80
3	9	. .	4.8	19.9	. .	. .	. .	. .	39 35.23	22.43	1.01	.	3	11.52	15 57.12	15.23	4.00	39 58.67	34 53 16.35
4	9	. .	. .	. .	. .	29.7	. .	. .	42 15.40	22.45	0.99	V.	9	2.0	39 55.55	15.61	9.40	42 38.84	35 17 20.56
5	10	. .	. .	. .	. .	. .	. .	24.9	42 39.12	22.45	1.00	VI.	6	7.22	27 40.03	15.64	6.62	43 2.57	5 2.29
6	10	. .	. .	. .	. .	. .	12.7	. .	43 42.14	22.46	1.00	VI.	6	11.32	29 46.10	15.81	7.09	44 5.60	7 9.00
7	9	. .	. .	. .	. .	. .	. .	5.9	44 20.26	22.46	1.00	VII.	4	7.10	18 33.38	15.89	4.56	44 43.72	5 53.83
8	10	. .	. .	. .	19.9	. .	. .	. .	47 19.74	22.48	0.99	.	9	8.55	43 24.87	16.33	10.21	47 43.21	35 20 51.41
9	9	. .	. .	. .	. .	13.4	. .	. .	47 58.22	22.49	1.01	V.	3	3.58	11 58.04	16.39	3.12	48 21.72	34 49 17.55
10	10	. .	. .	51.7	. .	. .	. .	. .	50 6.99	22.50	0.99	.	7	10.27	34 13.56	16.69	8.10	50 30.48	35 11 38.35
11	9	. .	. .	40.8	56.2	. .	. .	. .	50 56.16	22.50	1.01	.	3	6.7	13 3.16	16.80	3.35	51 19.67	34 50 23.31
12	8	. .	. .	. .	. .	38.8	54.4	. .	51 24.19	22.51	0.99	.	9	11.44	44 50.09	16.84	10.56	51 47.69	35 22 17.49
13	10	. .	. .	. .	. .	. .	. .	39.7	51 53.96	22.51	1.00	.	5	12.28	26 13.46	16.93	6.28	52 17.47	3 36.67
14	9	. .	. .	. .	. .	26.9	42.2	. .	53 12.14	22.52	0.99	.	9	4.12	41 2.17	17.12	9.66	53 35.65	18 28.95
15	10	. .	. .	. .	. .	32.0	. .	. .	54 17.67	22.52	0.99	V.	10	8.2	47 58.99	17.28	11.29	54 41.18	25 27.56
16	5	. .	. .	55.2	10.8	25.3	. .	. .	58 10.46	22.55	1.00	.	5	11.56	25 57.34	17.82	6.22	58 34.01	35 3 21.38
17	10	. .	. .	11.8	27.3	. .	. .	. .	59 27.18	22.56	1.01	.	1	9.12	4 38.34	18.00	1.50	12 59 50.75	34 41 57.84
18	7	. .	. .	. .	. .	. .	9.5	24.6	12 59 38.77	+22.56	+0.99	VI.	10	7.57	−47 56.28	−18.01	−11.28	13 0 2.32	−35 25 25.57

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 224. MARCH 22. K. BELT, −35° 1′. $D_0 = -34° 37' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	8	. .	. .	. .	58.8	14.3	. .	. .	13 0 59.30	+22.56	+0.99	.	9	10.20	−44 7.73	−18.20	−10.39	13 1 22.85	−35 21 36.32
20	10	. .	. .	. .	58.2	. .	. .	. .	1 58.26	22.57	1.01	.	3	6.7	13 3.16	18.36	3.35	2 21.84	34 50 34.87
21	9	. .	. .	44.5	. .	. .	. .	. .	2 59.75	22.58	1.01	.	3	3.28	11 42.97	18.52	3.05	3 23.34	34 49 4.54
22	9	10.3	25.6	. .	. .	. .	. .	. .	4 56.16	22.59	1.00	II.	7	5.3	31 29.94	18.81	7.49	5 19.75	35 8 56.24
23	9	. .	. .	. .	. .	53.9	. .	. .	5 38.79	22.59	1.01	V.	1	2.33	1 17.09	18.90	0.77	6 2.39	34 38 36.76
24	8	. .	. .	42.8	58.2	. .	. .	. .	12 58.07	22.64	0.99	.	9	6.10	42 1.67	19.99	9.89	13 21.60	35 19 31.54
25	10	. .	. .	. .	. .	37.2	. .	. .	13 21.98	22.64	1.00	V.	4	4.34	17 15.21	20.04	4.27	13 45.62	34 54 39.52
26	10	. .	. .	. .	10.8	. .	. .	. .	15 10.84	22.65	1.01	.	2	7.49	8 55.49	20.32	2.44	15 34.50	34 46 18.25
27	10	. .	. .	. .	59.3	. .	. .	. .	15 59.37	22.66	1.00	.	5	5.53	22 54.29	20.35	5.52	16 23.03	35 0 20.16
28	10	. .	36.2	52.2	. .	. .	. .	. .	18 7.08	22.67	1.00	.	3	5.43	12 51.05	20.75	3.32	18 30.75	34 50 15.12
29	9	. .	. .	46.8	1.8	. .	. .	. .	19 1.96	22.68	1.00	.	3	11.58	16 0.14	20.88	4.00	19 25.64	53 25.02
30	10	. .	. .	. .	36.8	. .	. .	. .	19 36.88	22.68	1.00	.	4	7.19	18 38.46	20.97	4.57	20 0.56	56 4.00
31	9	. .	. .	. .	11.1	26.1	. .	. .	20 11.01	22.69	1.00	.	5	4.50	22 22.53	21.05	5.41	20 34.70	59 48.49
32	9	. .	. .	. .	. .	. .	58.2	13.5	20 27.76	22.69	1.01	.	2	10.9	10 6.09	21.09	2.70	20 51.46	47 29.88
33	9	. .	. .	. .	14.8	. .	. .	. .	26 14.87	22.73	1.00	.	3	10.34	15 17.80	21.89	3.84	26 38.60	52 43.53
34	10	. .	. .	. .	. .	36.4	. .	. .	28 21.17	22.74	1.00	.	4	7.46	18 52.08	22.20	4.64	28 44.91	56 18.92
35	9	. .	. .	. .	. .	41.2	. .	. .	29 26.05	22.75	1.01	.	2	4.14	7 7.08	22.37	2.03	29 49.81	34 44 31.48
36	10	. .	1.2	. .	. .	. .	. .	. .	33 31.78	22.78	0.99	.	8	10.12	39 4.70	22.91	9.23	33 55.55	35 16 36.84
37	10	. .	10.6	. .	. .	. .	. .	. .	35 41.11	22.79	1.00	.	3	7.39	13 49.55	23.21	3.51	36 4.90	34 51 16.27
38	8.7	. .	52.8	8.3	23.6	. .	. .	. .	36 23.51	22.80	1.00	.	7	7.19	32 38.76	23.30	7.75	36 47.31	35 10 9.81
39	6	8.2	23.8	39.0	. .	. .	. .	. .	39 54.16	22.83	1.00	.	4	8.48	19 23.34	23.79	4.74	40 17.99	34 56 51.85
40	10	. .	. .	. .	26.8	. .	. .	. .	40 26.86	22.83	1.00	.	4	3.47	16 51.56	23.87	4.18	40 50.69	34 54 19.61
41	10	. .	. .	2.4	. .	. .	. .	. .	42 17.70	22.84	0.99	.	8	6.21	37 8.21	24.11	8.78	42 41.53	35 14 41.10
42	6.7	38.2	53.5	. .	. .	. .	. .	. .	44 23.95	22.86	1.00	.	4	5.42	17 49.55	24.36	4.39	44 47.81	34 55 18.30
43	9	. .	. .	. .	23.6	. .	. .	. .	44 23.66	22.86	1.00	.	4	3.34	16 45.01	24.36	4.15	44 47.52	54 13.52
44	9	. .	. .	. .	11.0	. .	. .	. .	45 11.02	22.86	1.01	.	1	3.56	1 59.00	24.49	0.92	45 34.89	34 39 24.41
45	9	. .	. .	9.6	. .	. .	. .	. .	13 46 24.89	+22.87	+1.00	.	6	8.11	−28 4.98	−24.65	− 6.71	13 46 48.76	−35 5 36.34

ZONE 225. MARCH 23. B. BELT, −31° 53′. $D_0 = -31° 28' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	6.6	15.	8 21 31.00	+23.54	+1.00	VII.	5	10.3	−24 59.88	− 1.24	− 6.00	8 21 55.54	−31 53 27.12
2	9	. .	. .	. .	. .	. .	28.	42.4	23 58.43	23.52	1.00	VII.	5	3.48	21 50.78	1.55	5.50	24 22.95	31 50 17.83
3	9	46.	1.	15.5	. .	. .	. .	. .	25 30.32	23.52	0.99	IV.	8	4.29	36 7.20	1.75	7.73	25 54.83	32 4 36.68
4	9	. .	. .	. .	. .	. .	24.	38.5	25 54.40	23.52	0.99	VII.	8	3.6	35 29.41	1.80	7.63	26 18.91	3 58.84
5	7	. .	37.	52.	. .	. .	. .	. .	28 6.60	23.51	0.99	IV.	8	4.48	36 21.32	2.09	7.75	28 30.10	4 51.16
6	9	. .	. .	. .	. .	. .	54.3	9.	28 24.82	23.51	1.00	VII.	7	6.52½	32 24.92	2.13	7.16	28 49.33	32 0 54.21
7	9	. .	. .	. .	. .	. .	. .	59.5	29 15.54	23.50	1.01	VII.	3	6.51	13 24.86	2.23	4.25	29 40.05	31 41 51.34
8	10	. .	. .	. .	. .	. .	40.	55.	31 10.69	23.50	1.00	VII.	6	5.35	26 45.84	2.48	6.29	31 35.19	55 14.61
9	9	. .	10.	24.5	. .	. .	. .	. .	33 39.32	23.49	1.01	IV.	4	2.26	16 10.72	2.81	4.66	34 3.82	44 38.19
10	8	. .	. .	. .	. .	. .	18.	33.	33 48.75	23.49	1.01	VII.	2	9.27½	9 44.67	2.82	3.70	34 13.25	38 11.19
11	8	. .	. .	. .	43.	58.	12.5	. .	35 43.11	23.48	1.01	VI.	3	6.50	13 24.63	3.07	4.25	36 7.60	31 41 51.95
12	10	. .	. .	1.	16.	. .	. .	. .	38 15.83	23.47	0.99	IV.	8	5.59½	36 57.37	3.40	7.86	38 40.29	32 5 28.63
13	8	. .	35.	49.5	4.	. .	. .	. .	40 4.20	23.46	0.99	IV.	9	4.2	40 57.13	3.64	8.47	40 28.65	9 29.24
14	9	. .	. .	. .	37.	51.5	. .	. .	41 37.03	23.46	0.99	V.	8	6.29	37 12.20	3.84	7.90	42 1.48	5 43.94
15	8	. .	. .	. .	. .	. .	40.	55.	42 10.65	23.46	0.99	VII.	8	4.42	36 17.82	3.91	7.76	42 35.10	32 4 49.49
16	9	. .	. .	. .	33.	. .	. .	. .	44 33.02	23.45	1.02	IV.	1	4.49	2 25.73	4.23	2.59	44 57.49	31 30 52.55
17	7	. .	. .	37.	54.	. .	. .	. .	45 53.87	23.44	1.00	IV.	6	8.26	28 12.55	4.40	6.49	46 18.31	31 56 43.44
18	9	. .	. .	. .	. .	. .	. .	1.8	8 46 17.60	+23.44	+1.00	VII.	7	5.28	−31 42.30	− 4.45	− 7.05	8 46 42.04	−32 0 13.80

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(225) 1. Time of transit over T. VI assumed as $0^s.6$ instead of $6^s.6$.
(225) 17. Time of transit over T. III assumed as 39^s instead of 37^s.

ZONE 225. MARCH 23. B. BELT, −31° 53′. D_0=−31° 28′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.	·		r.	′ ″	″	″	h. m. s.	° ′ ″
19	7.8	. .	. .	. .	. .	. .	. .	21.	8 47 37.12	+23.43	+1.01	VII.	2	3.47	− 6 52.98	− 4.63	−3.26	8 48 1.56	−31 35 20.87
20	9	. .	. .	. .	. .	. .	37.5	52.	49 8.01	23.43	1.01	VII.	2	6.14	8 7.11	4.83	3.45	49 32.45	36 35.39
21	9	. .	. .	. .	43.	57.7	. .	. .	43.05	23.43	1.01	V.	3	7.19	13 39.41	. .	4.27		
22	10	. .	. .	. .	. .	. .	. .	9.5	52 25.40	23.42	1.00	VII.	5	8.11	24 3.40	5.26	5.84	52 49.82	52 34.50
23	9	. .	. .	. .	. .	. .	22.	. .	53 52.49	23.42	1.00	VI.	4	11.55	20 57.42	5.45	5.37	54 16.91	49 28.24
24	9	. .	. .	37.	53.3	. .	. .	. .	55 52.54	23.41	1.01	IV.	3	7.18	13 38.95	5.71	4.28	56 16.96	42 8.94
25	7.8	. .	. .	. .	. .	. .	35.	49.8	56 5.61	23.41	1.00	VII.	5	5.4	22 29.11	5.74	5.60	56 30.02	51 0.45
26	8	. .	. .	. .	. .	7.4	22.3	37.	57 52.80	23.40	1.00	VII.	5	5.33	22 43.73	5.97	5.64	58 17.20	31 51 15.34
27	10	. .	. .	. .	. .	. .	52.4	7.	8 59 22.81	23.40	0.99	VII.	10	3.8	45 30.31	6.17	9.20	8 59 47.20	32 14 5.68
28	8	. .	. .	. .	11.5	26.	. .	. .	9 1 11.39	23.40	1.00	V.	6	6.56	27 27.12	6.40	6.39	9 1 35.79	31 55 59.91
29	9	. .	. .	. .	13.5	28.2	. .	. .	2 13.52	23.39	1.00	V.	5	4.59	22 27.01	6.54	5.60	2 37.91	31 50 59.15
30	10	. .	. .	. .	. .	31.	46.	. .	3 16.40	23.39	0.99	VI.	7	7.59	32 58.72	6.68	7.24	3 40.78	32 1 32.64
31	10	. .	. .	16.5	31.0	. .	. .	. .	6 31.13	23.38	1.01	IV.	3	6.41	13 20.30	7.10	4.23	6 55.52	31 41 51.63
32	7.8	. .	. .	. .	40.8	55.4	. .	. .	7 40.67	23.38	1.00	V.	6	7.17	27 37.69	7.26	6.42	8 5.05	56 11.37
33	9	. .	. .	. .	8.2	22.8	. .	. .	9 8.21	23.37	1.01	VI.	2	5.54	7 57.29	7.45	3.42	9 32.59	31 36 28.16
34	9	. .	. .	27.	42.	. .	. .	. .	10 41.85	23.37	1.00	IV.	7	5.56	31 56.91	7.65	7.09	11 6.22	32 0 31.65
35	9	. .	. .	. .	. .	. .	4.5	19.	11 34.93	23.37	1.00	VII.	6	7.38	27 47.86	7.77	6.45	11 59.30	31 56 22.08
36	9	. .	. .	5.5	20.3	. .	. .	. .	13 20.24	23.36	0.99	IV.	7	10.34½	34 17.35	8.00	7.44	13 44.59	32 2 52.79
37	9	. .	. .	. .	. .	. .	. .	14.3	13 30.06	23.36	0.99	VII.	7	12.18	35 9.04	8.02	7.57	13 54.41	32 3 44.63
38	9	. .	. .	35.	49.8	. .	. .	. .	15 49.76	23.36	1.00	IV.	6	11.36½	29 48.61	8.32	6.75	16 14.12	31 58 23.68
39	9	. .	52.5	7.2	22.	. .	. .	. .	17 21.93	23.36	0.99	IV.	9	8.53½	43 24.11	8.52	8.87	17 46.28	32 12 1.50
40	9	. .	. .	31.	46.	. .	. .	. .	18 45.87	23.35	1.01	IV.	2	6.34	8 17.68	8.71	3.48	19 10.23	31 36 49.87
41	8	. .	. .	. .	. .	. .	50.	. .	19 20.48	23.35	1.01	VI.	4	7.57	18 57.41	8.78	5.07	19 44.84	47 31.26
42	10	. .	. .	. .	36.4	51.	. .	. .	20 36.33	23.35	1.00	VI.	6	11.15	29 37.55	8.95	6.72	21 0.68	58 13.22
43	10	. .	. .	. .	59.5	. .	. .	. .	22 59.57	23.34	1.00	IV.	4	6.11	18 4.17	9.26	4.93	23 23.91	46 38.36
44	10	. .	. .	49.4	4.	. .	. .	. .	24 4.07	23.34	1.00	IV.	6	4.30	26 13.55	9.40	6.19	24 28.41	54 49.14
45	9	. .	. .	. .	53.3	8.	. .	. .	24 53.27	23.34	1.00	IV.	7	3.42	30 49.34	9.50	6.91	25 17.61	59 25.75
46	10	. .	. .	11.	25.5	. .	. .	. .	26 25.61	23.34	1.01	IV.	2	2.58	6 28.75	9.70	3.20	26 49.96	35 1.65
47	10	. .	. .	17.	31.7	. .	. .	. .	27 31.72	23.34	1.00	IV.	6	3.27	25 41.77	9.85	6.11	27 56.06	54 17.73
48	9	. .	. .	. .	24.3	39.	. .	. .	28 24.35	23.33	1.00	V.	4	3.52½	16 54.28	9.96	4.76	28 48.68	45 29.00
49	9	. .	. .	. .	47.	2.	. .	. .	29 47.21	23.33	1.01	V.	1	11.48	5 56.95	10.14	3.11	30 11.55	34 30.20
50	9	. .	. .	43.3	58.	. .	. .	. .	31 58.02	23.33	1.01	IV.	2	10.59	10 31.30	10.43	3.80	32 22.36	39 5.53
51	9	. .	. .	. .	5.	19.5	. .	. .	33 4.95	23.32	1.01	V.	2	9.34	9 48.39	10.57	3.69	33 29.28	38 22.65
52	9	. .	. .	. .	. .	. .	23.	. .	33 53.45	23.32	1.01	VI.	3	5.55	12 56.89	10.68	4.15	34 17.78	41 31.72
53	7.8	. .	. .	. .	. .	11.	26.	. .	33 56.39	23.32	1.01	VI.	1	4.11	2 6.35	10.68	2.54	34 21.72	31 30 39.57
54	9	. .	. .	. .	. .	. .	34.3	49.	36 4.77	23.32	0.99	VII.	10	2.7	44 59.56	10.96	9.13	36 29.08	32 13 39.65
55	8	. .	3.	17.5	32.	. .	. .	. .	38 32.22	23.31	1.00	IV.	7	4.1	30 58.92	11.28	6.94	38 56.53	31 59 37.14
56	10	. .	. .	. .	. .	. .	33.	48.	9 3.67	23.31	1.00	VII.	7	3.3½	30 29.44	11.35	6.86	39 27.98	59 7.65
57	9	. .	. .	. .	. .	43.	57.5	12.	40 28.14	23.31	1.01	VII.	1	10.26	5 15.18	11.53	3.01	40 52.46	33 49.72
58	10	. .	. .	. .	. .	. .	10.	25.	41 40.68	23.31	1.00	VII.	6	11.48½	29 54.17	11.68	6.76	42 4.99	38 32.61
59	9	. .	42.3	57.	12.	. .	. .	. .	44 11.85	23.31	1.00	IV.	4	11.44½	20 52.35	12.01	5.36	44 36.16	49 29.71
60	9	. .	. .	. .	4.	19.	. .	. .	45 4.19	23.31	1.01	V.	3	10.15	15 8.16	12.12	4.49	45 28.51	43 44.77
61	9	. .	. .	. .	44.	. .	. .	. .	44.03	23.30	1.01	IV.	1	10.44	5 24.74	. .	3.02		
82	9	. .	. .	. .	48.3	3.	. .	. .	48 48.32	23.30	1.00	V.	5	7.59	23 57.78	12.60	5.82	49 12.62	52 36.20
63	9	. .	54.	9.	23.5	. .	. .	. .	50 23.56	23.30	1.00	VI.	6	11.7	29 33.52	12.80	6.71	50 47.86	31 58 13.03
64	10	. .	. .	. .	. .	. .	4.	. .	51 34.54	23.30	0.99	VI.	7	6.25	32 11.32	12.95	7.13	51 58.83	32 0 51.40
65	8	. .	. .	. .	. .	10.5	25.	. .	52 55.64	23.30	1.00	VI.	5	4.23	22 8.70	13.12	5.55	53 19.94	31 50 47.37
66	10	. .	. .	58.5	13.2	. .	. .	. .	56 13.21	23.29	1.00	IV.	7	2.5	30 0.43	13.54	6.78	56 37.50	58 40.75
67	9	. .	. .	. .	. .	. .	40.	54.7	9 57 10.53	+23.29	+1.00	VII.	6	9.2	−28 30.22	−13.66	−6.54	9 57 34.82	−31 57 10.42

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 225. MARCH 23. B. BELT, −31° 53′. D₀=−31° 28′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
68	9	. .	. .	. .	. .	. .	43.5	58.5	9 58 14.16	+23.29	+0.99	VII.	7	9.26	−33 42.32	−13.79	−7.35	9 58 38.44	−32 2 23.46
69	9	. .	20.5	35.3	. .	. .	. .	. .	10 0 49.99	23.29	1.00	III.	5	6.54	23 24.50	14.12	5.76	10 1 14.28	31 52 4.38
70	9	. .	. .	. .	. .	3.	. .	. .	1 48.25	23.29	0.99	V.	8	11.16	39 36.92	14.25	8.29	2 12.53	32 8 19.46
71	8	. .	. .	. .	. .	. .	. .	13.5	2 29.22	23.29	0.99	VII.	8	8.24½	38 10.01	14.33	8.07	2 53.50	6 52.41
72	8	. .	. .	. .	. .	20.5	35.	. .	4 5.65	23.29	1.00	VI.	7	6.51	32 24.43	14.53	7.16	4 29.94	32 1 6.12
73	7.8	. .	. .	. .	. .	35.	. .	. .	5 20.27	23.29	1.00	VI.	6	8.46	28 22.43	14.69	6.54	5 44.56	31 57 3.66
74	7.8	. .	. .	. .	. .	. .	. .	27.6	5 43.59	23.29	1.00	VII.	4	5.51	17 53.60	14.74	4.90	6 7.88	46 33.24
75	10	. .	. .	. .	. .	44.	. .	. .	7 29.34	23.29	1.01	VI.	3	5.26	12 42.27	14.96	4.12	7 53.64	41 21.35
76	10	. .	. .	. .	. .	58.3	13.	. .	8 43.55	23.29	1.00	VI.	6	4.41	26 18.88	15.12	6.21	9 7.84	55 0.21
77	9	. .	. .	. .	5.	19.5	. .	. .	10 4.89	23.29	1.00	V.	6	7.35	27 46.78	15.29	6.45	10 29.18	56 28.52
78	8	. .	. .	13.7	28.3	. .	. .	. .	11 28.40	23.29	1.00	IV.	4	7.21	18 39.46	15.46	5.02	11 52.69	47 19.94
79	9	. .	. .	. .	35.	50.	. .	. .	12 35.12	23.28	1.00	V.	6	12.31	30 16.03	15.60	6.82	12 59.40	58 58.45
80	9	7.	21.5	. .	. .	. .	. .	. .	14 51.03	23.28	1.00	II.	5	6.58	23 26.86	15.88	5.75	15 15.31	52 8.49
81	9	. .	. .	. .	. .	. .	24.	. .	14 54.48	23.28	1.00	VI.	4	8.40	19 19.10	15.89	5.12	15 18.76	48 0.11
82	8	. .	. .	. .	. .	10.	24.8	. .	15 55.29	23.28	1.00	VI.	4	8.35	19 19.58	16.02	5.12	16 19.57	47 57.72
83	9	. .	. .	16.7	31.3	. .	. .	. .	18 31.39	23.28	1.01	IV.	3	9.58	14 59.63	16.35	4.47	18 55.68	43 40.45
84	9	. .	. .	. .	35.	49.5	. .	. .	19 34.94	23.28	1.01	V.	3	10.52	15 26.82	16.48	4.54	19 59.23	44 7.84
85	8	. .	. .	31.6	46.2	1.	. .	. .	21 46.31	23.28	1.01	V.	1	5.35	2 48.87	16.73	2.63	22 10.60	31 28.23
86	8	. .	. .	. .	58.8	13.4	. .	. .	22 58.74	23.28	1.00	V.	6	8.4	28 1.41	16.90	6.48	23 23.02	31 56 44.79
87	8	. .	. .	10.	24.5	39.	. .	. .	24 24.43	23.28	0.98	V.	10	10.22	49 9.59	17.08	9.81	24 48.69	32 17 56.48
88	9	. .	. .	. .	. .	. .	51.	. .	25 21.49	23.28	1.00	VI.	4	10.7	20 2.97	17.19	5.24	25 45.77	31 48 45.40
89	10	. .	. .	. .	. .	. .	. .	35.	26 51.12	23.28	1.01	VII.	2	4.42	7 10.72	17.38	3.28	27 15.41	35 51.38
90	9	. .	. .	. .	. .	48.	2.4	. .	28 33.10	23.28	1.01	VI.	3	10.1½	15 1.19	17.59	4.47	28 57.39	43 43.25
91	9	. .	. .	. .	. .	. .	11.5	26.5	29 42.17	23.28	1.00	VII.	7	4.14	31 5.00	17.73	6.96	30 6.45	31 59 49.69
92	9	. .	38.	52.5	. .	. .	. .	. .	32 7.35	23.28	0.99	III.	7	8.37	33 18.05	18.03	7.29	32 31.62	32 2 3.37
93	9.10	. .	. .	. .	. .	46.	1.	. .	32 31.40	23.28	1.00	VI.	6	9.12	28 35.53	28.08	6.56	32 55.68	31 57 20.17
94	9.10	. .	. .	. .	. .	52.	7.	. .	33 37.39	23.28	1.00	VI.	4	5.49	17 52.87	18.22	4.90	34 1.67	46 35.99
95	7	. .	. .	.7.	22.	36.5	. .	. .	35 21.84	23.29	1.01	VI.	6	6.31	27 14.35	18.43	6.35	35 46.14	31 55 59.13
96	9.10	. .	. .	. .	. .	50.	4.5	. .	36 35.15	23.29	0.99	VI.	9	7.18	42 35.74	18.58	8.78	36 59.43	32 11 23.10
97	9	. .	. .	. .	. .	31.5	46.	. .	38 16.67	23.29	0.98	VI.	10	10.11	49 3.88	18.79	9.80	38 40.94	17 52.47
98	9	. .	. .	. .	. .	. .	7.5	22.	39 37.89	23.29	0.99	VII.	8	8.39½	38 17.58	18.95	8.09	40 2.17	7 4.62
99	9.10	. .	. .	. .	30.5	45.3	. .	. .	41 30.41	23.29	0.98	VI.	10	9.44	48 50.27	19.18	9.76	41 54.68	32 17 39.21
100	9	. .	55.	10.	. .	. .	. .	. .	43 24.60	23.29	1.00	III.	6	8.8	28 3.42	19.41	6.49	43 48.89	31 56 49.32
101	9	. .	. .	. .	. .	15.3	30.	. .	44 0.54	23.29	1.00	VI.	5	4.15	22 4.67	19.48	5.54	44 24.83	31 50 49.69
102	9	. .	. .	33.5	48.3	. .	. .	. .	45 48.20	23.29	0.99	IV.	9	7.40	42 47.05	19.69	8.81	46 12.48	32 11 35.55
103	9	. .	. .	. .	. .	. .	9.	23.4	46 39.37	23.29	1.00	VII.	7	3.59	30 57.44	19.79	6.93	47 3.66	31 59 44.16
104	9	. .	. .	. .	27.4	42.3	. .	. .	48 27.37	23.30	0.99	V.	10	6.00	46 57.48	20.01	9.47	48 51.66	32 15 46.96
105	8.9	. .	. .	. .	. .	38.5	53.	. .	49 23.64	23.30	1.00	VI.	4	3.13	16 34.20	20.12	4.70	49 47.94	31 45 19.02
106	9	. .	. .	. .	. .	1.3	16.	. .	50 46.54	23.30	1.00	VI.	4	8.16	19 7.00	20.28	5.10	51 10.84	31 37 52.38
107	8.9	. .	. .	. .	. .	8.	23.	. .	51 53.42	23.30	0.98	VI.	10	7.13	47 34.12	20.41	9.58	52 17.70	32 16 24.11
108	9	. .	. .	. .	54.3	9.	. .	. .	53 54.36	23.30	1.01	V.	2	3.42	6 50.89	20.65	3.22	54 18.67	31 35 34.76
109	9	49.	4.	18.5	. .	. .	. .	. .	56 33.24	23.30	1.00	III.	4	6.2	17 59.59	20.96	4.92	56 57.54	31 46 45.47
110	9	. .	15.2	30.	45.	. .	. .	. .	57 44.75	23.31	0.98	IV.	10	7.24½	47 40.13	21.10	9.59	58 9.04	32 16 30.82
111	7	50.4	5.	20.	34.7	. .	. .	. .	10 59 34.60	23.31	1.00	IV.	4	5.31	17 44.00	21.32	4.87	10 59 58.91	31 46 30.19
112	9	. .	. .	. .	39.5	54.2	. .	. .	11 0 39.53	23.31	1.00	V.	5	3.49	21 51.72	21.45	5.51	11 1 3.84	50 38.68
113	9.10	. .	. .	. .	57.5	12.3	. .	. .	1 57.59	23.31	1.01	V.	3	6.23	13 11.17	21.60	4.18	2 21.91	41 56.95
114	7.8	. .	. .	. .	. .	13.	28.	. .	3 58.39	23.31	1.00	VI.	3	12.29	16 15.56	21.84	4.65	4 22.70	45 2.05
115	7.8	. .	. .	. .	37.	51.5	6.2	. .	4 36.84	23.32	1.01	VI.	2	6.48	8 24.52	21.91	3.45	5 1.17	37 9.88
116	9	. .	. .	. .	. .	36 5	51.	. .	11 6 21.65	+23.32	+1.00	VI.	6	10.37	−29 18.40	−22.12	−6.67	11 6 45.97	−31 58 7.19

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(225) 95. Transit over T. IV assumed to have been at 22ˢ instead of 42ˢ.

ZONE 225. MARCH 23. B. BELT, −31° 53′. D₀=−31° 28′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
117	9	. .	. .	1.3	16.	. .	. .	. .	11 8 16.04	+23.32	+1.00	IV.	5	8.20	−24 8.42	−22.35	− 5.86	11 8 40.36	−31 52 56.63
118	9.10	. .	37.3	52.	. .	. .	. .	. .	10 6.74	23.33	1.00	III.	4	5.56½	17 56.81	22.56	4.90	10 31.07	46 44.27
119	9	. .	15.	29.6	44.4	. .	. .	. .	11 44.40	23.33	1.01	IV.	3	4.45	12 21.81	22.75	4.05	12 8.74	41 8.61
120	9	29.2	44.	58.5	. .	. .	. .	. .	15 13.36	23.34	1.00	III.	6	8.51	28 25.10	23.16	6.52	15 37.70	57 14.78
121	9.10	. .	. .	17.4	32.3	. .	. .	. .	16 32.23	23.34	1.00	IV.	3	8.35½	14 18.04	23.31	4.35	16 56.57	43 5.70
122	9.10	46.	0.5	15.4	. .	. .	. .	. .	18 30.05	23.34	1.00	III.	4	7.20	18 38.91	23.54	5.01	18 54.39	47 27.46
123	9.10	19.	34.	. .	. .	. .	. .	. .	19 3.26	23.34	1.00	II.	4	10.28	20 13.55	23.61	5.26	19 27.60	49 2.42
124	10	. .	. .	49.	3.2	. .	. .	. .	21 3.49	23.35	1.00	IV.	4	6.15	18 6.19	23.84	4.93	21 27.84	46 54.96
125	10	. .	. .	9.	23.5	38.	. .	. .	22 23.54	23.35	1.01	V.	2	3.17½	6 38.53	23.99	3.18	22 47.90	35 25.70
126	10	. .	. .	. .	. .	. .	6.5	21.	23 36.98	23.35	1.00	VII.	4	8.25	19 11.26	24.12	5.11	24 1.33	31 48 0.49
127	9	. .	. .	. .	. .	. .	18.	32.5	24 48.39	23.36	0.99	VII.	8	8.41	38 18.33	24.26	8.10	25 12.74	32 7 10.69
128	7.8	. .	. .	33.3	48.	3.	. .	. .	26 48.08	23.36	1.00	V.	7	8.54	33 26.62	24.48	7.33	27 12.44	2 18.43
129	8	5.	20.	. .	. .	. .	. .	. .	28 49.37	23.37	0.99	II.	8	5.52	36 53.38	24.71	7.88	29 13.73	5 45.97
130	7.8	. .	. .	. .	. .	25.	40.	. .	29 10.41	23.37	0.99	VI.	9	3.3½	40 27.41	24.75	8.45	29 34.77	32 9 20.61
131	9.10	. .	16.5	31.2	46.	. .	. .	. .	31 45.97	23.37	1.00	IV.	4	4.35	17 15.77	25.03	4.80	32 10.34	31 46 5.60
132	7	. .	21.	35.5	. .	. .	. .	. .	33 50.32	23.38	1.01	III.	3	2.32	11 14.70	25.26	3.87	34 14.71	40 3.83
133	9	. .	. .	. .	. .	. .	. .	38.	33 54.08	23.38	1.01	VII.	3	0.50	10 22.83	25.27	3.74	34 18.47	39 11.84
134	9	. .	48.	3.	17.5	. .	. .	. .	39 17.56	23.39	1.00	IV.	7	2.43	30 19.59	25.86	6.83	39 41.95	59 12.28
135	10	46.5	1.	. .	. .	. .	. .	. .	41 30.56	23.40	1.00	II.	6	8.38	28 18.39	26.10	6.51	41 54.96	57 11.00
136	10	. .	. .	. .	. .	57.4	12.	. .	41 42.60	23.40	1.00	VI.	5	7.20	23 39.95	26.12	5.78	42 7.00	52 31.85
137	10	. .	. .	28.5	43.2	. .	. .	. .	43 43.21	23.41	1.00	IV.	6	12.50	30 25.66	26.34	6.84	44 7.62	59 18.84
138	10	. .	55.	. .	. .	. .	. .	. .	45 24.44	23.41	1.00	II.	4	13.2	21 31.20	26.52	5.46	45 48.85	31 50 23.18
139	9	. .	27.5	42.2	57.	. .	. .	. .	46 56.93	23.42	0.99	IV.	9	11.17	44 36.46	26.68	9.12	47 21.34	32 13 32.26
140	10	. .	. .	. .	. .	. .	15.	29.5	47 45.48	23.42	1.00	VII.	4	6.38	18 17.31	26.77	4.95	48 9.90	31 47 9.03
141	10	. .	. .	. .	. .	. .	52.2	7.	49 22.84	23.42	1.00	VII.	3	7.55	13 57.13	26.94	4.28	49 47.26	31 42 48.35
142	10	. .	. .	. .	31.2	. .	. .	. .	51 30.90	23.43	0.99	IV.	8	7.51	37 53.59	27.17	8.04	51 55.32	32 6 48.80
143	9	. .	. .	49.3	4.3	. .	. .	. .	53 4.16	23.44	1.01	IV.	1	5.59	3 1.02	27.33	2.62	53 28.61	31 31 50.97
144	9	. .	. .	. .	. .	. .	8.2	23.	53 38.83	23.44	1.00	VII.	4	7.13	18 34.95	27.39	5.00	54 3.27	47 27.34
145	9	. .	. .	. .	. .	. .	. .	25.5	54 41.35	23.44	1.00	VII.	6	6.30½	27 13.83	27.50	6.35	55 5.79	56 7.68
146	9	. .	15.	29.5	44.2	. .	. .	. .	56 44.30	23.45	1.00	IV.	6	10.20	29 10.03	27.72	6.65	57 8.75	58 4.40
147	9	. .	. .	. .	15.	. .	. .	. .	58 15.06	23.45	1.00	IV.	3	12.8	16 5.18	27.88	4.61	58 39.51	44 57.67
148	8.9	. .	. .	. .	15.2	30.	. .	. .	11 59 15.29	+23.46	+1.00	V.	4	11.19	−20 39.43	−27.98	− 5.33	11 59 39.75	−31 49 32.74

ZONE 226. MARCH 23. B. BELT, −35° 38′. D₀=−35° 15′ 20″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	9.	24.	. .	. .	13 27 8.73	+23.72	+0.99	V.	8	10.11	−39 4.13	− 2.57	− 9.31	13 27 33.44	−35 54 36.01
2	8	. .	. .	. .	28.	43.3	. .	. .	28 27.93	23.72	1.00	V.	7	7.37	32 47.78	2.82	7.82	28 52.65	48 18.42
3	9	. .	51.	6.2	21.2	. .	. .	. .	30 21.52	23.74	1.00	IV.	3	6.11	13 5.17	3.17	3.30	30 46.26	28 31.64
4	8.9	. .	36.6	52.	7.6	. .	. .	. .	35 7.45	23.78	1.00	IV.	7	7.15	32 36.74	4.04	7.78	35 32.23	48 8.56
5	10	. .	. .	1.	16.5	. .	. .	. .	36 16.47	23.78	1.00	IV.	5	4.24	22 9.42	4.26	5.33	36 41.25	37 39.01
6	9	. .	. .	22.	37.3	. .	. .	. .	37 37.37	23.79	1.00	IV.	5	7.3	23 29.59	4.50	5.65	38 2.16	38 59.74
7	8.9	. .	. .	. .	34.	49.	. .	. .	38 33.76	23.80	1.00	V.	8	3.21½	35 37.63	4.67	8.49	38 58.56	51 10.79
8	9	. .	0.4	16.	31.2	. .	. .	. .	40 31.25	23.81	1.00	IV.	8	3.49	35 51.57	5.03	8.55	40 56.06	51 25.15
9	8.9	. .	55.3	11.	26.	. .	. .	. .	42 26.17	23.83	1.00	IV.	6	2.55	25 25.64	5.37	6.09	42 51.00	40 57.10
10	9.10	. .	. .	. .	. .	. .	. .	31.	42 44.73	23.83	0.99	VII.	8	6.00	36 57.08	5.42	8.82	43 9.55	52 31.32
11	9	. .	. .	. .	. .	32.3	47.5	. .	44 16.80	23.84	1.00	VI.	4	12.19	21 9.49	5.71	5.10	44 41.64	36 40.30
12	10	. .	. .	26.5	42.	. .	. .	. .	48 41.95	23.87	1.00	IV.	6	10.11	29 5.49	6.49	6.97	49 6.82	44 38.95
13	10	28.2	43.2	59.	. .	. .	. .	. .	13 51 14.30	+23.89	+0.99	III.	8	7.11	−37 3.36	− 6.94	− 8.84	13 51 39.18	−35 52 39.14

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 226. MARCH 23. B. BELT, −35° 38′. D₀=−35° 15′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
14	10	..	..	..	..	49.	5.	..	13 51 33.91	+23.90	+1.00	VI.	7	11.18	−34 39.03	− 6.99	− 8.27	13 51 58.81	−35 50 14.29
15	9	..	..	..	5.2	20.8	36.	..	53 5.29	23.91	1.01	VI.	2	13.12	11 38.11	7.26	2.95	53 30.21	27 8.32
16	9	..	..	..	..	32.	47.	..	54 16.40	23.92	1.00	VI.	6	9.32½	28 45.84	7.47	6.86	54 41.32	44 20.17
17	9	..	..	55.	11.	..	..	..	56 10.67	23.93	1.00	IV.	7	10.31	34 15.58	7.80	8.18	56 35.60	49 51.56
18	9.10	..	..	..	..	..	8.	23.4	13 56 37.18	23.93	1.00	VII.	8	5.36	36 44.98	7.87	8.76	13 57 2.11	35 52 20.71
19	10	..	36.4	52.	7.4	..	..	..	14 0 7.30	23.97	0.99	IV.	10	6.23	47 9.12	8.49	11.26	14 0 32.26	36 2 48.87
20	10	..	..	22.2	37.3	..	..	..	1 37.48	23.97	1.00	IV.	4	5.27½	17 42.23	8.74	4.32	2 2.45	35 33 15.29
21	9	..	..	7.	22.3	37.2	..	..	4 22.13	23.99	1.00	V.	8	10.25	39 11.20	9.21	9.35	4 47.12	54 49.76
22	10	..	..	..	..	38.	53.	..	5 22.40	24.01	1.00	VI.	4	7.18	18 37.71	9.38	4.53	5 47.41	34 11.62
23	10	..	..	..	9.	24.	..	..	7 8.73	24.02	1.00	V.	8	12.6	40 2.12	9.66	9.54	7 33.75	55 41.32
24	10.11	..	..	31.5	47.	..	..	..	8 46.93	24.03	1.00	IV.	7	4.33	31 15.06	9.95	7.47	9 11.96	46 52.48
25	10	..	..	..	..	..	..	10.	9 23.74	24.04	1.00	VII.	8	4.33	36 13.21	10.05	8.64	9 48.78	51 51.90
26	10	..	..	..	..	..	13.5	29.	10 42.83	24.05	1.00	VII.	4	6.17	18 6.65	10.26	4.41	11 7.88	33 41.32
27	9	..	..	20.	35.2	..	..	..	13 35.28	24.07	1.00	IV.	1	3.53	1 57.48	10.73	0.75	14 0.35	17 28.96
28	10.11	..	..	..	0.	15.5	..	..	17 0.03	24.10	1.00	VI.	7	8.37	33 17.86	11.28	8.94	17 25.13	48 58.08
29	10	..	..	..	21.	36.4	52.	..	18 21.06	24.11	1.00	VI.	6	13.48	30 54.66	11.48	7.39	18 46.17	46 53.53
30	10	..	50.	6.	22.	37.	..	..	21 21.44	24.13	1.00	V.	7	3.44	30 50.29	11.98	7.37	21 46.57	46 29.64
31	10.11	..	..	53.	8.3	24.	..	..	23 8.47	24.15	1.00	V.	4	11.20	20 39.92	12.26	4.99	23 33.62	36 17.17
32	11	..	..	25.	40.	55.	..	..	25 40.04	24.17	1.00	V.	3	4.11	12 4.60	12.67	3.05	26 5.21	35 27 40.32
33	10	..	..	54.	9.5	25.	..	..	27 9.44	24.18	0.99	VI.	10	1.42	44 47.19	12.90	10.71	27 34.61	36 0 30.80
34	10	..	8.4	24.	39.	..	..	..	29 39.21	24.20	1.00	IV.	4	8.14	19 6.20	13.29	4.63	30 4.41	35 34 44.12
35	8.9	..	53.5	9.	24.	..	..	..	31 24.22	24.22	1.00	IV.	3	7.20	13 39.96	13.57	3.41	31 49.44	29 16.94
36	11	..	..	..	33.5	49.	..	..	35 33.62	24.25	1.00	V.	2	12.34	11 19.14	14.21	2.87	35 58.87	26 56.22
37	8.9	..	..	..	40.	56.2	12.	..	35 40.69	24.25	1.00	VI.	3	10.3	15 1.92	14.23	3.69	36 5.94	35 30 39.84
38	8	9.	24.3	39.5	55.	..	..	..	14 38 55.06	+24.28	+0.99	IV.	9	10.55	−44 25.38	−14.73	−10.62	14 39 20.33	−36 0 10.73

ZONE 227. MARCH 29. B. BELT, −30° 38′. D₀=−30° 14′ 0″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	..	45.	59.	13.	..	..	..	11 55 13.54	+23.22	+1.01	IV.	3	3.56	−11 57.10	− 5.68	− 4.24	11 55 37.77	−30 26 7.02
2	8	..	..	..	27.5	42.2	..	..	56 27.55	23.22	1.01	V.	2	4.10	7 5.01	5.71	3.57	56 51.78	21 14.29
3	9	..	..	1.5	16.4	..	..	..	58 16.21	23.22	1.00	IV.	7	1.10	29 32.69	5.75	6.63	58 40.43	43 45.07
4	7.8	..	..	..	29.	43.5	..	..	11 59 29.03	23.22	1.00	VI.	4	10.8	20 3.48	5.77	5.33	11 59 53.25	34 14.58
5	10	..	..	..	9.2	24.	..	..	12 1 9.34	23.22	1.00	V.	6	7.21	27 39.71	5.80	6.37	12 1 33.56	41 51.88
6	10	..	..	..	20.5	35.	..	..	3 20.48	23.23	1.00	V.	6	10.22	29 10.99	5.83	6.59	3 44.71	43 23.41
7	8	..	25.	40.	54.2	..	..	..	4 54.27	23.23	1.00	IV.	6	5.52	26 54.89	5.86	6.27	5 18.50	30 41 7.02
8	9	..	..	32.	46.	..	..	..	6 46.19	23.23	0.99	IV.	10	4.24	46 9.12	5.89	8.86	7 10.31	31 0 23.87
9	7.8	..	..	..	..	37.	51.5	..	7 22.46	23.23	0.99	V.	8	6.23	37 9.17	5.90	7.70	7 46.68	30 51 22.77
10	7	..	..	..	33.3	48.	..	..	9 33.45	23.24	1.01	V.	2	6.6	8 3.51	5.93	3.72	9 57.70	22 13.16
11	7.8	..	..	..	..	..	42.5	57.	10 13.43	23.24	1.00	VII.	6	2.48	25 21.66	5.94	6.05	10 37.67	39 33.65
12	8	..	..	..	45.3	0.	..	..	12 45.45	23.24	1.01	VI.	1	10.29	5 16.97	5.97	3.34	13 9.70	19 26.28
13	8	..	..	..	58.	12.5	..	..	13 58.05	23.24	1.01	V.	1	13.5	6 35.77	5.98	3.51	14 22.30	20 45.26
14	9	..	..	..	..	..	24.	..	14 54.92	23.25	1.00	VI.	6	8.38	28 18.40	5.99	6.46	15 19.17	42 30.85
15	9	..	..	17.4	32.0	..	..	..	16 31.97	23.25	1.00	IV.	6	5.5	26 31.19	6.01	6.21	16 56.22	40 43.41
16	8	..	..	..	44.4	59.	..	..	17 44.35	23.25	0.99	V.	9	6.26	42 9.69	6.02	8.35	18 8.59	56 24.06
17	8	..	..	..	56.5	11.	..	..	18 56.54	23.25	1.00	V.	3	10.15	15 8.16	6.03	4.66	19 20.79	29 18.85
18	9	..	23.	37.5	52.	..	..	..	20 52.04	23.26	1.00	IV.	6	8.38	28 18.60	6.04	6.46	21 16.30	42 31.10
19	9	..	..	..	..	..	55.	9.3	21 25.90	23.26	1.01	VII.	1	10.5	5 4.62	6.05	3.30	21 50.17	19 13.97
20	8	..	..	..	..	3.1	18.	..	12 22 48.75	+23.26	+1.00	VI.	7	10.36	−34 17.91	− 6.05	− 7.30	12 23 13.01	−30 48 31.26

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM. At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 227. MARCH 29. B. BELT, −30° 38′. D_0 = −30° 14′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9	. .	. .	. .	43.	58.	. .	. .	12 24 43.20	+23.26	+1.00	V.	7	11.33	−34 46.79	− 6.06	− 7.37	12 25 7.46	−30 49 0.22
22	9	. .	2.5	17.	. .	. .	. .	. .	26 31.54	23.27	1.00	III.	4	12.11	21 5.64	6.07	5.47	26 55.81	35 17.18
23	8	. .	33.	47.4	. .	. .	. .	. .	29 2.01	23.27	1.00	III.	6	9.4	28 31.66	6.08	6.49	29 26.28	42 44.23
24	7.8	. .	. .	21.3	36.	50.5	. .	. .	32 35.89	23.28	0.99	V.	8	13.4	40 31.37	6.08	8.15	33 0.16	54 45.60
25	8	. .	. .	. .	6.	20.5	. .	. .	34 5.92	23.29	0.99	V.	8	10.5	39 1.12	6.08	7.94	34 30.20	53 15.14
26	9	. .	44.	58.5	13.	. .	. .	. .	36 13.02	23.29	1.00	IV.	7	8.12	33 5.49	6.09	7.13	36 37.31	47 18.71
27	8	. .	7.5	22.	. .	. .	. .	. .	37 36.57	23.29	0.99	III.	9	6.45	42 19.27	6.09	8.38	38 0.85	56 33.74
28	9	. .	. .	. .	. .	. .	27.	41.5	37 57.87	23.30	0.99	VII.	9	11.1	44 27.95	6.09	8.65	38 22.16	58 42.69
29	8	. .	41.5	56.	. .	. .	. .	. .	40 10.54	23.30	1.00	III.	4	11.55	20 57.58	6.09	5.45	40 34.84	35 9.12
30	8	. .	. .	. .	. .	. .	. .	8.	40 24.58	23.30	1.00	VII.	3	12.7	16 4.23	6.09	4.79	40 48.88	30 15.11
31	6.7	37.	51.5	5.9	. .	. .	. .	. .	43 20.45	23.31	1.01	III.	2	7.48	8 54.93	6.08	3.82	43 44.77	23 4.83
32	9	. .	19.5	34.2	. .	. .	. .	. .	44 48.64	23.31	1.00	III.	4	5.30	17 43.45	6.08	5.02	45 12.95	31 54.55
33	9	23.	38.	. .	. .	. .	. .	. .	47 6.81	23.32	1.00	II.	5	9.25	24 40.99	6.07	5.96	47 31.13	38 53.02
34	7.8	. .	. .	. .	29.	43.5	. .	. .	47 29.01	23.32	1.00	.	5	11.46	25 52.30	6.07	6.12	47 53.33	40 4.49
35	9	. .	. .	55.3	10.	. .	. .	. .	49 9.91	23.33	1.01	IV.	1	6.13	3 8.08	6.06	3.04	49 34.25	17 17.18
36	8	. .	. .	. .	. .	. .	12.	26.5	49 42.97	23.33	1.00	VII.	3	7.53	13 56.15	6.06	4.51	50 7.30	28 6.72
37	8	40.5	55.	. .	. .	. .	. .	. .	52 24.02	23.34	1.00	II.	4	11.30	20 44.83	6.04	5.42	52 48.36	34 56.29
38	9	. .	31.	45.5	0.5	. .	. .	. .	54 0.16	23.34	0.99	IV.	9	10.9	44 2.19	6.03	8.60	54 24.49	58 16.82
39	9	. .	4.	18.3	. .	. .	. .	. .	55 32.96	23.35	1.00	III.	6	10.24	29 12.00	6.02	6.59	55 57.31	43 24.61
40	9	37.	51.2	6.	. .	. .	. .	. .	57 20.47	23.35	1.00	III.	7	4.16	31 6.44	6.00	6.85	57 44.82	45 19.29
41	6.7	. .	. .	. .	0.	14.3	29.	. .	58 59.88	23.36	1.00	VI.	7	10.17	34 8.32	5.99	7.27	12 58 24.24	48 21.58
42	9	. .	. .	44.3	59.	. .	. .	. .	12 59 58.93	23.36	1.00	IV.	3	6.20	13 9.71	5.98	4.39	13 0 23.29	27 20.08
43	10	. .	. .	. .	56.7	11.2	. .	. .	13 1 56.69	23.37	1.00	V.	6	3.58	25 57.35	5.96	6.13	2 21.06	40 9.44
44	10	. .	. .	. .	8.2	23.	. .	. .	3 8.38	23.37	1.00	V.	4	5.53	17 55.04	5.95	5.05	3 32.75	32 6.04
45	11	. .	. .	. .	14.	28.7	. .	. .	4 14.07	23.38	1.00	V.	7	3.16	30 36.18	5.93	6.78	4 38.45	44 48.89
46	10	. .	36.5	51.	. .	. .	. .	. .	6 5.56	23.38	1.00	III.	7	3.51	30 53.82	5.91	6.83	6 29.94	45 6.56
47	10	. .	27.	41.5	55.2	. .	. .	. .	7 55.78	23.39	1.00	IV.	4	4.53	17 24.84	5.89	4.98	8 20.17	31 35.71
48	5	. .	. .	. .	. .	. .	. .	53.	8 9.43	23.39	1.00	VII.	6	8.50	28 24.20	5.89	6.48	8 33.82	42 36.57
49	9	. .	. .	37.	51.3	. .	. .	. .	12 51.43	23.41	1.00	IV.	2	10.23	10 13.14	5.83	3.98	13 15.84	24 22.95
50	10	. .	. .	. .	. .	. .	53.	8.	13 24.13	23.41	1.00	VII.	8	9.27	38 41.55	5.82	7.93	13 48.54	52 55.30
51	9	. .	. .	8.4	23.	. .	. .	. .	16 22.08	23.42	1.00	IV.	2	11.6	10 34.83	5.78	4.02	16 46.50	24 44.63
52	8	. .	. .	33.	48.	2.	. .	. .	17 47.68	23.42	1.00	V.	5	11.45	25 51.74	5.76	6.12	18 12.10	40 3.62
53	8	. .	. .	10.	25.	39.	. .	. .	19 24.65	23.43	1.00	V.	7	6.21	32 9.46	5.74	7.00	19 49.08	46 22.20
54	9	. .	. .	38.	52.4	. .	. .	. .	20 52.50	23.44	1.00	IV.	5	4.37	22 15.98	5.72	5.63	21 16.94	36 27.33
55	10	. .	. .	17.	31.4	. .	. .	. .	22 31.50	23.44	1.00	IV.	4	7.44	18 51.07	5.69	5.17	22 55.94	33 1.93
56	10	. .	. .	. .	2.	17.	. .	. .	24 2.20	23.45	1.00	V.	7	11.50	34 55.36	5.67	7.40	24 26.65	49 8.43
57	10	. .	. .	. .	. .	. .	. .	28.	24 44.50	23.45	1.00	VII.	5	5.51	22 52.83	5.66	5.73	25 8.95	37 4.22
58	10	. .	. .	. .	24.	38.4	. .	. .	26 23.96	23.46	1.00	V.	5	8.18	24 7.36	5.63	5.87	26 48.42	38 18.86
59	11	. .	. .	37.5	52.	. .	. .	. .	52.04	23.47	1.00	IV.	5	7.12	23 34.13	. .	5.82		
60	11	. .	. .	. .	55.2	9.8	. .	. .	30 55.29	23.48	1.00	V.	4	3.26	16 40.92	5.56	4.87	31 19.77	30 51.35
61	11	. .	3.	18.	32.5	. .	. .	. .	33 32.36	23.49	1.00	IV.	7	5.40	31 48.84	5.51	6.95	33 56.85	46 1.30
62	11	. .	. .	. .	31.	45.5	. .	. .	34 30.99	23.49	1.00	V.	6	5.49	26 53.33	5.49	6.27	34 55.48	41 5.09
63	10	17.5	32.2	47.	1.5	. .	. .	. .	40 1.34	23.52	1.00	IV.	5	6.35	23 15.48	5.38	5.78	40 25.86	37 26.64
64	10	. .	. .	. .	. .	. .	4.4	19.	40 35.36	23.52	1.00	VII.	7	3.7	30 31.24	5.37	6.77	40 59.88	44 43.38
65	7	. .	. .	. .	. .	. .	10.3	25.	41 41.37	23.52	1.00	VII.	3	6.34	13 16.33	5.34	4.41	42 5.89	27 26.08
66	8	. .	. .	. .	. .	. .	11.	26.	42 42.20	23.53	1.00	VII.	4	10.5	20 1.72	5.32	5.32	43 6.73	34 12.36
67	9	. .	. .	. .	. .	22.	36.8	. .	44 7.62	23.53	0.99	VI.	9	10.57	44 26.19	5.29	8.66	44 32.14	58 40.14
68	6.7	. .	14.	28.8	43.	. .	. .	. .	46 43.15	23.54	1.00	IV.	4	7.9	18 33.42	5.23	5.13	47 7.69	32 43.78
69	7.8	. .	11.5	26.	40.5	. .	. .	. .	13 48 40.52	+23.55	+1.01	IV.	1	11.50	− 5 58.01	− 5.18	− 3.39	13 49 5.08	−30 20 6.58

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(227) 41. Minutes assumed as 57 instead of 58.
(227) 51. Time for T. IV assumed at 22ˢ.8 instead of 28ˢ.

ZONE 227. MARCH 29. B. BELT, −30° 38′. D₀=−30° 14′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	9	. .	49.5	4.	18.5	. .	. .	. .	13 50 18.49	+23.56	+0.99	IV.	10	4.47	−46 20.72	− 5.14	− 8.92	13 50 42.94	−31 0 34.78
71	10	35.	49.5	. .	. .	. .	. .	. .	52 18.54	23.57	1.00	II.	5	5.17	22 35.94	5.09	5.68	52 43.11	30 36 46.71
72	9	. .	. .	. .	. .	. .	50.	5.	52 21.14	23.57	1.00	VII.	8	10.10	39 3.24	5.09	7.98	52 45.71	53 16.31
73	7	. .	. .	. .	55.	9.3	24.1	. .	53 54.86	23.58	1.00	VI.	9	8.51	43 22.65	5.04	8.54	54 19.44	57 36.23
74	8	10.	24.5	39.	. .	. .	. .	. .	57 53.48	23.60	1.00	III.	2	7.23	8 42.32	4.94	3.76	58 18.08	22 51.02
75	8	. .	. .	. .	. .	. .	. .	44.	13 58 0.44	+23.60	+1.00	.	6	5.19½	−26 38.25	− 4.93	− 6.23	13 58 25.04	−30 40 49.41

ZONE 228. MARCH 30. K. BELT, −39° 23′. D₀=−39° 0′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	. .	. .	53.0	. .	11 57 20.63	+23.84	+0.99	VI.	7	9.10	−33 34.44	− 2.74	− 9.34	11 57 45.46	−39 34 36.52
2	10	. .	. .	. .	0.2	. .	. .	. .	11 59 0.26	23.85	1.00	.	5	6.59	23 27.58	2.86	5.41	11 59 25.11	24 25.85
3	9	. .	5.0	21.2	. .	. .	. .	. .	12 2 37.44	23.85	0.99	III.	9	7.56	42 55.05	3.11	13.03	12 3 2.28	44 1.19
4	10	. .	41.3	57.4	. .	. .	. .	. .	5 13.59	23.86	1.01	.	3	7.31	13 45.51	3.28	1.77	5 38.46	14 40.56
5	10	. .	. .	. .	44.6	. .	. .	. .	5 44.43	23.86	0.99	.	9	9.36	43 45.55	3.32	13.37	6 9.28	44 52.24
6	9	. .	46.0	2.3	. .	. .	. .	. .	7 18.39	23.87	1.01	III.	3	11.12	15 36.88	3.43	− 2.44	7 43.27	16 32.75
7	9	. .	. .	. .	50.3	. .	. .	. .	8 50.32	23.87	1.01	.	1	6.55	3 29.26	3.53	+ 2.07	9 15.20	4 20.72
8	8	. .	. .	. .	. .	36.8	53.2	. .	9 20.74	23.87	1.01	.	2	8.41	9 21.71	3.56	− 0.11	9 45.62	10 15.38
9	8	. .	. .	. .	37.6	53.9	. .	. .	10 37.72	23.87	1.01	.	3	13.11	16 36.94	3.65	2.82	11 2.60	17 33.41
10	9	. .	. .	. .	. .	. .	. .	38.5	10 50.13	23.88	1.00	VII.	4	7.46	18 51.43	3.66	3.65	11 15.01	19 48.74
11	10	. .	50.6	6.5	. .	. .	. .	. .	15 22.85	23.89	0.99	.	7	3.20	30 38.24	3.96	8.17	15 47.73	31 40.37
12	9	. .	46.5	2.8	. .	. .	. .	. .	16 18.92	23.89	1.00	.	5	5.56	22 55.81	4.02	5.19	16 43.81	23 55.02
13	9	. .	. .	. .	. .	49.9	. .	. .	16 33.64	23.89	0.98	.	10	10.42	49 19.73	4.04	−15.62	16 58.51	50 29.39
14	9	. .	. .	. .	. .	59.5	. .	. .	17 43.46	23.89	1.01	.	1	12.42	6 24.23	4.11	+ 0.98	18 8.36	7 17.36
15	10	. .	43.0	. .	15.2	. .	. .	. .	20 15.27	23.90	1.01	.	2	4.48	7 24.22	4.28	0.61	20 40.18	8 17.89
16	9	. .	. .	. .	. .	56.8	. .	. .	20 40.78	23.90	1.01	VI.	1	7.50	3 56.70	4.30	+ 1.89	21 5.69	4 49.11
17	9	. .	. .	48.8	5.0	. .	. .	. .	22 5.01	23.91	1.00	.	5	10.45	25 21.54	4.39	− 6.14	22 29.92	26 22.07
18	9	. .	. .	49.4	5.5	. .	. .	. .	23 5.55	23.91	1.00	.	5	13.30	26 44.73	4.45	− 6.66	23 30.46	27 45.84
19	7	. .	. .	. .	34.5	50.6	. .	. .	27 34.56	23.92	1.02	.	1	3.18	1 39.83	4.72	+ 2.74	27 59.50	2 31.81
20	9	. .	51.8	7.8	. .	. .	. .	. .	30 24.07	23.93	1.00	.	5	9.37	24 47.25	4.89	− 5.92	30 49.00	25 48.06
21	9	. .	. .	. .	41.4	57.3	. .	. .	30 41.23	23.94	1.00	.	7	5.15	31 36.23	4.91	8.55	31 6.17	32 39.69
22	9	. .	. .	. .	37.4	53.6	. .	. .	31 37.47	23.94	1.00	.	4	11.50	20 55.11	4.96	− 9.44	32 2.41	21 59.51
23	9	. .	. .	32.2	48.2	. .	. .	. .	33 48.28	23.94	1.01	.	1	11.21	5 43.38	5.09	+ 1.24	34 13.23	6 37.23
24	7	. .	21.0	37.1	53.2	. .	. .	. .	34 53.30	23.95	1.00	.	4	10.28	20 13.76	5.17	− 4.18	35 18.25	21 13.11
25	9	. .	. .	. .	. .	35.2	. .	. .	35 19.04	23.95	1.00	V.	5	7.50	23 53.22	5.18	5.58	35 43.99	24 53.98
26	10	. .	. .	52.3	8.8	. .	. .	. .	37 8.65	23.96	1.00	.	6	4.39	26 18.09	5.28	6.50	37 33.61	27 19.87
27	8	. .	44.3	0.8	17.0	. .	. .	. .	38 16.89	23.96	1.00	.	6	7.13	27 35.73	5.35	7.01	38 41.85	28 38.09
28	9	. .	. .	. .	. .	0.0	16.4	. .	38 43.92	23.96	1.00	.	4	4.52	17 24.34	5.37	− 3.12	39 8.88	18 22.83
29	9	. .	36.2	52.2	. .	. .	. .	. .	42 8.40	23.98	1.01	.	1	4.35	2 18.67	5.57	+ 2.51	42 33.39	3 11.73
30	5	56.8	13.2	29.3	45.3	1.6	17.8	33.8	44 45.41	23.99	1.00	.	4	11.19	20 39.48	5.71	− 4.35	45 10.40	21 39.54
31	9	. .	. .	. .	. .	11.0	27.2	. .	45 54.81	23.99	1.00	V.	4	10.24	20 11.68	5.77	4.18	46 19.80	21 11.63
32	9	12.4	28.5	. .	. .	. .	. .	. .	47 0.89	24.00	1.00	III.	5	11.19	25 38.61	5.84	6.23	47 25.89	26 40.68
33	9	. .	41.5	57.5	. .	. .	. .	. .	50 13.75	24.01	1.01	.	3	11.47	15 54.60	6.01	2.55	50 38.77	16 53.16
34	9	. .	16.0	. .	. .	. .	. .	. .	51 48.45	24.02	0.99	II.	9	10.59	44 27.11	6.10	13.69	52 13.46	45 36.90
35	9	. .	. .	. .	. .	. .	13.0	. .	51 40.61	24.02	1.00	VI.	6	9.32	28 45.54	6.09	7.46	52 5.63	29 49.09
36	9.8	. .	28.0	44.1	. .	. .	. .	. .	58 0.29	24.04	1.01	.	3	6.53	13 26.35	6.42	1.63	12 58 25.34	14 24.40
37	9.8	. .	. .	27.7	43.4	. .	. .	. .	59 43.68	24.05	1.00	.	4	11.22	20 40.99	6.50	− 4.36	13 0 8.73	21 41.85
38	9	. .	. .	. .	. .	. .	. .	27.9	12 59 39.76	24.05	1.01	VII.	1	11.37	5 50.81	6.50	+ 1.21	0 4.82	6 46.10
39	9	. .	. .	. .	. .	. .	51.0	. .	13 0 18.51	+24.05	+1.01	VI.	1	6.17	− 3 9.80	− 6.53	+ 2.20	13 0 43.57	−39 4 4.13

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h, m.	in.	°	°

REMARKS.

Zone 228. March 30. K. Belt, −39° 23′. D₀=−39° 0′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
	.								h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
40	9	59.3	15.7	. .	. .	. .	. .	. .	13 3 47.93	+24.07	+1.00	II.	5	9.6	−24 31.33	− 6.65	− 5.81	13 4 13.00	−39 25 33.79
41	9.10	. .	. .	. .	31.9	. .	. .	. .	4 31.75	24.07	0.99	.	9	6.34	42 13.78	6.68	12.77	4 56.81	43 23.23
42	8	31.4	47.7	. .	. .	. .	. .	. .	6 20.07	24.08	0.99	III.	7	10.55	34 27.61	6.74	9.68	6 45.14	35 34.03
43	10	. .	. .	28.9	. .	. .	. .	. .	6 45.12	24.09	0.99	III.	8	8.12	38 4.12	6.75	11.13	7 10.20	39 12.00
44	9	. .	. .	. .	. .	. .	26.7	. .	?6 54.26	24.09	1.01	VII.	3	9.10	14 34.78	6.76	2.05	7 19.36	15 33.59
45	9	. .	. .	54.1	. .	. .	. .	. .	10 10.27	24.10	1.00	.	4	12.19	21 9.73	6.87	4.53	10 35.37	22 11.13
46	9	20.8	36.9	. .	. .	. .	. .	. .	12 9.35	24.11	1.00	II.	7	5.25	31 40.98	6.92	8.60	12 34.46	32 46.50
47	9	. .	. .	. .	. .	39.8	56.0	. .	12 23.63	24.11	1.01	V.	2	12.04	11 4.00	6.93	0.74	12 48.75	12 1.67
48	10	. .	. .	. .	. .	. .	53.4	. .	13 21.02	24.12	1.00	VI.	7	4.20	31 8.21	6.95	8.38	13 46.14	32 13.54
49	7	. .	39.1	55.2	. .	. .	. .	. .	18 11.41	24.14	1.00	III.	5	3.45	21 49.68	7.07	4.77	18 36.55	22 51.52
50	9	. .	. .	46.0	. .	. .	. .	. .	19 2.16	24.15	1.01	.	4	1.48	15 51.55	7.09	2.52	19 27.32	16 51.16
51	8	6.3	22.5	38.7	. .	. .	. .	. .	23 54.75	24.17	1.01	.	2	11.42	10 52.98	7.19	0.65	24 19.93	11 50.82
52	7.8	. .	. .	24.9	40.9	. .	. .	. .	24 41.00	24.17	1.01	.	2	8.51	9 26.75	7.21	0.12	25 6.18	10 24.08
53	9	. .	. .	. .	35.1	51.3	. .	. .	25 35.11	24.18	1.00	.	6	6.26	27 12.04	7.23	6.86	26 0.29	28 16.13
54	6	. .	5.3	21.3	. .	. .	. .	. .	30 37.54	24.20	1.01	.	3	12.08	16 5.18	7.33	2.62	31 2.75	17 5.13
55	9	14.7	30.7	. .	. .	. .	. .	. .	32 3.27	24.21	0.99	.	8	11.20	39 38.98	7.36	11.76	32 28.47	40 48.10
56	8	47.2	3.3	19.3	. .	. .	. .	. .	34 35.61	24.22	1.00	.	5	8.14	24 5.40	7.41	5.66	35 0.83	25 8.47
57	10	4.8	21.0	. .	. .	. .	. .	. .	38 53.47	24.25	0.99	II.	8	12.15	40 6.42	7.49	11.94	39 18.71	41 15.85
58	9	. .	. .	0.8	17.2	. .	. .	. .	39 17.13	24.25	1.00	.	4	7.26	18 41.99	7.50	3.61	39 42.38	19 43.10
59	8	. .	. .	. .	. .	14.6	. .	. .	40 58.36	24.26	0.99	V.	9	11.42	44 49.01	7.52	13.84	41 23.61	46 0.37
60	8	. .	. .	. .	. .	. .	35.4	. .	40 3.06	24.26	0.99	VII.	9	11.38	44 46.41	7.51	−13.83	40 28.31	45 57.75
61	7	. .	. .	. .	. .	. .	. .	49.3	41 1.11	24.26	1.01	VII.	1	16.22	8 14.49	7.52	+ 0.33	41 26.38	9 11.68
62	10	. .	7.8	23.4	. .	. .	. .	. .	48 39.84	24.31	1.01	.	3	5.24	12 41.47	7.63	− 1.35	49 5.16	13 40.45
63	9	2.6	19.0	35.2	. .	. .	. .	. .	49 51.26	24.32	1.00	.	5	4.44	22 19.51	7.65	4.96	50 16.58	23 22.12
64	9	. .	. .	4.9	21.0	. .	. .	. .	50 21.05	24.32	1.01	.	3	1.4	10 30.37	7.65	0.51	50 46.38	11 28.53
65	7	. .	20.9	37.0	. .	. .	. .	. .	51 53.24	24.33	1.01	.	6	8.57	28 28.18	7.66	7.38	52 18.58	29 33.22
66	10	24.9	40.9	. .	. .	. .	. .	. .	54 13.27	24.34	1.00	II.	4	6.49	18 23.05	7.68	3.49	54 38.61	19 24.22
67	9	11.9	28.1	. .	. .	. .	. .	. .	56 0.34	24.36	1.01	II.	3	9.48	14 54.30	7.69	2.16	56 25.71	15 54.15
68	10	. .	. .	. .	6.1	. .	. .	. .	57 6.15	24.36	1.01	.	2	11.16	10 39.87	7.70	0.57	57 31.52	11 38.14
69	10	. .	. .	47.7	. .	. .	. .	. .	13 58 3.90	24.37	1.00	.	6	13.4	30 32.72	7.71	8.15	13 58 29.27	31 38.58
70	10	. .	19.5	35.2	. .	. .	. .	. .	14 2 51.58	24.40	1.01	III.	2	11.49	10 56.44	7.73	− 0.66	14 3 16.99	11 54.83
71	9	. .	. .	. .	12.7	. .	. .	. .	3 12.72	24.40	1.01	.	1	7.55	3 59.51	7.73	+ 1.90	3 38.13	4 55.34
72	9	. .	. .	. .	. .	5.3	21.6	. .	3 49.17	24.40	1.00	.	3	10.30	15 15.78	7.73	− 2.29	4 14.57	16 15.80
73	8	. .	9.7	25.8	. .	. .	. .	. .	5 42.02	24.41	1.00	.	5	5.27	22 41.18	7.74	5.11	6 7.43	23 44.03
74	10	. .	. .	. .	23.9	. .	. .	. .	9 23.98	24.44	1.00	.	4	5.56	17 56.61	7.75	3.31	9 49.42	18 57.67
75	10	. .	15.5	. .	. .	. .	. .	. .	14 15 47.85	+24.48	+1.00	II.	4	10.19	−20 8.94	− 7.75	− 4.14	14 16 13.33	−39 21 10.83
Zone 229. April 2. B. Belt, −24° 23′. D₀=−23° 57′ 40″.																			
1	8	. .	. .	. .	54.	7.6	21.	. .	10 9 53.82	+24.55	+1.00	VI.	5	4.07	−22 0.69	− 1.52	− 5.76	10 10 19.37	−24 19 47.97
2	9	18.7	32.	46.	. .	. .	. .	. .	11 59.70	24.55	0.99	III.	7	10.33	34 16.55	1.71	6.78	12 25.24	32 5.07
3	9	. .	. .	. .	. .	32.	45.5	. .	12 18.16	24.55	1.00	VI.	6	13.45	30 53.23	1.78	6.47	12 43.71	28 41.48
4	7.8	. .	. .	. .	56.6	10.	. .	. .	13 56.38	24.55	0.99	V.	8	10.32	39 14.75	1.95	7.18	14 21.92	37 3.88
5	8	41.6	55.2	9.	. .	. .	. .	. .	17 22.67	24.54	1.00	III.	3	9.45	14 53.04	2.32	5.17	17 48.21	12 40.53
6	10	. .	15.3	29.	. .	. .	. .	. .	18 42.75	24.54	0.99	III.	9	10.37	44 16.27	2.46	7.62	19 8.28	42 6.35
7	10	. .	. .	. .	. .	. .	27.	41.	18 59.68	24.54	0.99	VII.	8	6.53½	37 24.25	2.60	7.03	19 25.21	35 13.88
8	11	. .	. .	. .	59.5	. .	. .	. .	20 59.56	24.54	1.00	IV.	3	9.33	14 47.03	2.70	5.16	21 25.10	12 34.89
9	9	. .	. .	57.5	11.5	25.	. .	. .	10 22 11.37	+24.54	+1.00	V.	4	11.22	−20 40.95	− 2.83	− 5.65	10 22 36.91	−24 18 29.43

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 229. APRIL 2. B. BELT, −24° 23′. D₀=−23° 57′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	9	. .	. .	. .	19.	32.4	. .	. .	10 23 18.84	+24.53	+1.00	V.	6	10.495	−29 24.87	− 2.94	− 6.35	10 23 44.37	−24 27 14.16
11	9	37.	51.	4.5	. .	. .	. .	. .	25 18.28	24.53	1.00	III.	6	9.29	28 44.31	3.15	6.30	25 43.81	26 33.76
12	8	. .	. .	. .	. .	. .	52.5	6.	25 24.95	24.53	1.00	VII.	5	9.17	24 36.81	3.16	5.97	25 50.48	22 25.94
13	9	. .	. .	5.	19.	32.7	. .	. .	27 18.93	24.53	1.00	V.	5	3.00½	21 27.27	3.36	5.71	27 44.46	19 16.34
14	9	. .	25.	38.4	52.2	. .	. .	. .	29 52.28	24.52	1.00	IV.	4	8.27	19 12.75	3.63	5.53	30 17.80	17 1.91
15	10	. .	. .	. .	. .	. .	44.	57.5	30 16.48	24.52	1.00	VII.	3	12.3	16 2.31	3.67	5.26	30 42.00	13 51.24
16	9	. .	11.	24.3	38.	. .	. .	. .	32 38.17	24.52	1.00	VI.	5	7.50	23 53.29	3.90	5.91	33 3.69	21 43.10
17	8	3.	17.	30.6	. .	. .	. .	. .	34 44.26	24.52	1.01	III.	3	4.51	12 24.79	4.11	4.96	35 9.79	10 13.86
18	8	. .	35.5	49.2	3.	. .	. .	. .	36 2.98	24.51	1.00	IV.	4	10.16½	20 7.97	4.24	5.60	36 28.49	17 57.81
19	10	. .	. .	10.	23.3	. .	. .	. .	37 23.54	24.51	1.00	III.	4	12.41	21 20.78	4.37	5.70	37 49.05	19 10.85
20	7.8	. .	. .	. .	. .	. .	25.3	39.2	37 57.97	24.51	1.00	VII.	3	12.52	16 27.02	4.43	5.29	38 23.48	14 16.74
21	6.7	. .	. .	. .	. .	. .	40.	53.2	39 12.33	24.51	0.99	.	.	.	. . .	. .	. .	39 37.83	
22	10	. .	. .	46.3	60.2	. .	. .	. .	41 0.13	24.51	1.00	IV.	5	8.30	24 13.47	4.72	5.94	41 25.64	22 4.13
23	8	. .	. .	51.4	5.3	. .	. .	. .	43 5.14	24.51	0.99	IV.	10	3.46	45 49.96	4.92	7.75	43 30.64	43 42.63
24	8	. .	36.4	50.5	4.	. .	. .	. .	46 4.02	24.51	1.01	IV.	1	6.47	3 25.23	5.20	4.22	46 29.54	1 14.65
25	8	. .	. .	. .	. .	16.	30.	. .	47 2.38	24.50	1.01	VI.	1	5.44	2 53.30	5.29	4.18	47 27.89	0 42.77
26	9	. .	16.5	30.	44.	. .	. .	. .	49 43.89	24.50	1.00	IV.	7	5.22	31 39.76	5.54	6.54	50 9.39	29 31.84
27	8	. .	46.5	0.	13.8	. .	. .	. .	52 13.78	24.50	0.99	IV.	10	3.23	45 38.35	5.77	7.74	52 39.27	43 31.86
28	10	. .	. .	. .	27.	40.3	. .	. .	55 26.82	24.50	1.00	V.	5	8.27	24 11.91	6.06	5.94	55 52.32	22 3.91
29	11	10.3	24.2	. .	. .	. .	. .	. .	10 57 51.50	24.50	1.00	IV.	3.	9.17	14 38.96	6.28	5.14	10 58 17.00	12 30.38
30	8	. .	. .	. .	. .	35.	48.4	. .	11 2 21.14	24.50	0.99	VI.	10	11.20½	49 38.97	6.69	8.11	11 2 46.63	47 33.77
31	10	. .	. .	. .	9.	22.5	. .	. .	4 8.88	24.50	1.00	V.	6	11.16	29 38.23	6.85	6.38	4 34.38	27 31.46
32	10	. .	. .	21.2	35.	. .	. .	. .	6 34.90	24.49	0.99	IV.	9	5.28	41 40.48	7.07	7.41	7 0.38	39 34.96
33	10	. .	49.7	3.	17.	. .	. .	. .	8 16.95	24.49	1.00	IV.	7	5.50	31 53.88	7.22	6.56	8 42.44	29 47.66
34	9	33.	46.5	59.5	14.	. .	. .	. .	11 13.84	24.49	1.00	IV.	6	4.41	26 19.09	7.49	6.11	11 39.33	24 12.69
35	9	17.	31.	44.3	. .	. .	. .	. .	12 58.22	24.49	1.00	III.	6	8.29	28 14.02	7.64	6.26	13 23.71	26 7.92
36	10	. .	. .	. .	. .	46.	0.	13.5	13 32.42	24.49	1.00	VII.	3	12.52	16 27.02	7.69	5.29	13 57.91	14 20.00
37	8	. .	. .	. .	. .	. .	54.5	8.	14 26.95	24.49	1.00	VII.	5	8.51	24 23.70	7.77	5.95	14 52.44	22 17.42
38	8	. .	. .	. .	. .	. .	57.3	11.	15 29.80	24.49	0.99	VII.	10	6.57	46 55.67	7.86	7.90	15 55.28	44 51.43
39	10	. .	10.5	24.	37.8	. .	. .	. .	18 37.83	24.49	1.00	.	6	6.27	27 12.54	8.13	6.18	19 3.32	25 6.85
40	9	. .	. .	18.	32.	. .	. .	. .	20 31.86	24.50	1.01	IV.	1	10.19	5 12.13	8.29	4.37	20 57.37	3 4.79
41	6.7	. .	26.	39.3	53.	7.	. .	. .	21 53.21	24.50	1.00	V.	3	5.4	12 31.35	8.41	4.95	22 18.71	10 24.71
42	10	. .	. .	22.	36.	. .	. .	. .	23 35.87	24.50	1.00	IV.	6	3.13	25 34.71	8.55	6.05	24 1.37	23 29.31
43	10	. .	6.5	20.5	34.2	. .	. .	. .	26 34.12	24.50	1.00	IV.	7	4.20	31 8.50	8.80	6.50	26 59.62	29 3.80
44	10	. .	. .	. .	22.5	36.	50.	. .	30 22.40	24.50	0.99	VI.	10	7.14	47 34.68	9.11	7.93	30 47.89	45 31.72
45	7.8	. .	. .	. .	. .	. .	54.	. .	32 26.38	24.50	1.01	VII.	1	11.53	5 59.17	9.28	4.42	32 51.89	3 52.87
46	9	. .	57.3	11.	24.5	. .	. .	. .	37 24.67	24.50	1.00	IV.	3	5.11	12 34.91	9.69	4.96	37 50.17	10 29.56
47	7.8	. .	. .	. .	. .	40.	53.5	7.	38 26.10	24.50	1.01	VII.	2	9.00	10 31.45	9.77	4.71	38 51.61	8 25.93
48	8	. .	. .	17.	31.	. .	. .	. .	40 30.90	24.50	1.00	IV.	3	14.6	17 4.68	9.94	5.33	40 56.40	14 59.95
49	10	. .	. .	. .	10.	23.5	. .	. .	44 9.94	24.51	1.00	V.	4	11.52	20 56.08	10.25	5.66	44 35.45	18 51.99
50	8	. .	17.5	31.2	45.	. .	. .	. .	47 44.98	24.51	1.00	IV.	4	11.7	20 33.43	10.54	5.62	48 10.49	18 29.59
51	9	. .	32.	46.	59.5	. .	. .	. .	48 59.53	24.51	0.99	IV.	8	13.14	40 36.46	10.68	7.33	49 25.03	38 34.44
52	11	. .	14.	27.5	. .	. .	. .	. .	50 41.33	24.51	1.00	III.	3	12.5	16 3.63	10.78	5.25	51 6.84	13 59.66
53	10	. .	41.	55.	8.5	. .	. .	. .	52 8.56	24.52	1.00	V.	6	8.48	28 23.60	10.89	6.28	52 34.08	26 20.77
54	10	. .	13.5	27.3	41.	. .	. .	. .	53 41.01	24.52	1.00	IV.	3	11.26½	15 44.26	11.01	5.22	54 6.53	13 40.49
55	9	. .	. .	21.3	35.	49.	. .	. .	56 35.14	24.52	1.01	V.	1	11.48½	5 59.21	11.24	4.41	57 0.67	3 52.86
56	9	. .	. .	5.	19.	. .	46.	. .	58 18.74	24.52	0.99	VI.	9	8.39	43 16.65	11.37	7.58	11 58 44.25	41 15.60
57	9	. .	. .	. .	39.5	53.	. .	. .	11 59 39.36	24.52	1.00	V.	7	6.32	32 15.03	11.47	6.60	12 0 4.88	30 13.10
58	8	. .	53.	6.6	20.3	34.	. .	. .	12 2 20.36	+24.53	+1.01	V.	2	8.46	− 9 24.20	−11.67	− 4.69	12 2 45.90	−24 7 20.56

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(229) 38. Micrometer reading assumed as 5ʳ.57 instead of 6ʳ.57.
(229) 47. Micrometer reading assumed as 11ʳ.00 instead of 9ʳ.00.

ZONE 229. APRIL 2. B. BELT, −24° 23′. D_0=−23° 57′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
59	8	. .	. .	. .	. .	. .	31.4	. .	12 3 3.77	+24.53	+1.01	VI.	1	5.17	− 2 39.68	−11.73	− 4.15	12 3 29.31	−24 0 35.56
60	8	. .	. .	. .	43.3	57.	. .	. .	4 43.36	24.53	1.01	V.	1	3.3	1 32.23	11.85	4.05	5 8.90	23 59 28.13
61	10	. .	. .	. .	. .	50.	4.	. .	5 36.42	24.53	1.00	VI.	7	7.38	32 48.18	11.91	6.64	6 1.95	24 30 46.73
62	10	. .	5.3	19.	33.	. .	. .	. .	8 32.83	24.54	1.00	IV.	6	8.9	28 3.98	12.13	6.25	8 58.37	26 2.36
63	11	. .	. .	. .	. .	35.	49.	. .	11 21.42	24.54	1.00	VI.	7	7.17	32 37.59	12.33	6.63	11 46.96	30 36.55
64	11	. .	41.5	55.	9.	. .	. .	. .	14 8.91	24.55	1.00	IV.	5	7.31	23 43.71	12.53	5.88	14 34.46	21 42.12
65	9	. .	. .	. .	0.6	14.	27.7	. .	15 0.37	24.55	1.00	VI.	6	9.00	28 29.53	12.59	6.28	15 25.92	26 28.40
66	9	. .	. .	. .	8.3	22.	36.	. .	16 8.38	24.55	1.00	VI.	5	9.15½	24 36.24	12.66	5.97	16 33.93	22 34.87
67	9	. .	. .	. .	. .	41.	55.	8.5	17 27.44	24.55	1.01	VII.	2	6.14	8 7.24	12.75	4.59	17 53.00	6 0.58
68	9	. .	9.4	23.	36.5	. .	. .	. .	19 36.69	24.56	1.00	IV.	7	5.19	31 38.25	12.90	6.55	20 2.25	29 37.70
69	9	. .	. .	11.3	25.	. .	. .	. .	21 25.00	24.56	1.00	IV.	7	3.26	30 41.27	13.02	6.47	21 50.56	28 40.76
70	10	. .	. .	. .	. .	. .	. .	26.4	21 45.25	24.56	1.00	VII.	6	6.58	27 27.82	13.04	6.20	22 10.81	25 27.06
71	9	19.4	33.5	47.2	1.2	. .	. .	. .	25 0.91	24.57	1.00	IV.	6	8.20	28 9.52	13.25	6.25	25 26.48	26 9.02
72	9	38.	51.4	5.	. .	. .	. .	. .	28 18.92	24.58	1.00	III.	7	4.32	31 4.56	13.49	6.51	28 44.50	29 4.56
73	9	. .	. .	. .	. .	. .	13.4	27.	28 45.90	24.58	1.00	VII.	6	2.58	25 26.80	13.52	6.03	29 11.48	23 26.35
74	8	. .	. .	. .	. .	29.	43.	56.5	30 15.36	24.58	0.99	VII.	9	4.45	41 18.46	13.63	7.39	30 40.93	39 19.48
75	10	. .	. .	. .	. .	6.	19.2	. .	31 52.01	24.58	1.00	VI.	6	4.41	26 18.93	13.73	6.10	32 17.59	24 18.76
76	9	. .	. .	. .	. .	. .	34.	47.7	33 6.58	24.59	1.00	VII.	3	4.12	12 4.82	13.82	4.90	33 32.17	10 13.54
77	7	. .	. .	37.5	51.2	5.	. .	. .	34 51.27	24.59	1.00	VI.	3	3.39	11 48.37	13.93	4.87	35 16.86	9 47.17
78	7	. .	56.	9.3	23.	. .	. .	. .	37 23.16	24.60	1.00	IV.	3	2.30	11 13.74	14.09	4.83	37 48.76	9 12.66
79	9	. .	35.	49.	2.5	. .	. .	. .	41 2.55	24.61	1.00	IV.	7	2.45	30 20.60	14.32	6.45	41 28.16	28 21.37
80	9	. .	. .	. .	40.	54.	. .	. .	42 40.16	24.61	1.00	V.	6	4.3	25 59.89	14.43	6.08	43 5.77	24 0.40
81	9	. .	58.5	12.3	26.	. .	. .	. .	46 26.03	24.62	0.99	IV.	8	9.18	38 37.46	14.66	7.16	46 51.64	36 39.28
82	11	. .	. .	. .	20.5	33.8	. .	. .	48 20.24	24.63	0.99	V.	8	4.40	36 17.25	14.78	6.97	48 45.86	34 19.00
83	8	. .	. .	38.	51.4	5.	. .	. .	49 51.49	24.63	1.00	V.	5	6.14	23 4.85	14.87	5.83	50 17.12	21 5.55
84	9	. .	. .	42.	56.	. .	. .	. .	51 55.89	24.64	1.00	IV.	3	10.38	15 19.81	14.99	5.17	52 21.53	13 19.97
85	10	58.5	12.2	26.	. .	. .	. .	. .	55 39.70	24.65	1.00	III.	7	8.47	33 23.10	15.21	6.68	12 56 5.35	31 24.99
86	10	. .	15.	29.3	43.	. .	. .	. .	12 59 42.83	24.66	1.00	IV.	6	8.33	28 16.08	15.44	6.26	13 0 8.49	26 17.78
87	10	. .	. .	. .	45.	59.	12.5	. .	13 0 45.11	24.66	1.00	V.	6	5.6	26 31.66	15.50	6.12	1 10.77	24 33.28
88	9	. .	. .	. .	. .	3.7	17.	31.	1 49.82	24.67	1.00	VI.	3	11.12	15 36.79	15.56	5.20	2 15.49	13 37.55
89	9	. .	18.	31.8	45.3	. .	. .	. .	5 45.43	24.68	1.00	IV.	6	5.42	26 49.85	15.77	6.14	6 11.11	24 51.76
90	9	56.	9.8	24.	37.	. .	. .	. .	8 37.27	24.69	1.00	IV.	3	11.48	15 55.10	15.93	5.22	9 2.96	13 56.25
91	9	. .	56.	9.4	. .	. .	. .	. .	10 23.29	24.70	1.00	III.	6	10.31	29 15.54	16.02	6.36	10 48.99	27 17.92
92	9	. .	. .	. .	. .	44.3	58.	12.	10 30.67	24.70	1.00	VII.	4	8.46	19 21.99	16.02	5.52	10 56.37	17 23.53
93	9	14.4	28.4	42.	. .	. .	. .	. .	12 55.66	24.71	1.00	III.	2	10.37	10 20.17	16.14	4.74	13 21.37	8 21.05
94	7.8	6.5	20.4	34.	. .	. .	. .	. .	15 47.73	24.71	1.00	III.	5	5.8	22 31.56	16.27	5.77	16 13.44	20 33.60
95	10	. .	. .	21.	35.	. .	. .	. .	16 34.90	24.72	1.00	IV.	4	6.2	17 59.64	16.31	5.39	17 0.62	16 1.34
96	10	. .	31.	44.5	58.	. .	. .	. .	17 58.23	24.72	1.09	IV.	6	2.23	25 9.50	16.37	6.01	18 23.95	23 11.88
97	8	7.	20.3	34.	. .	. .	. .	. .	19 47.88	24.73	1.00	III.	6	7.39	27 48.81	16.48	6.22	20 13.61	25 51.51
98	11	. .	. .	47.	0.4	. .	. .	. .	0.56	24.74	1.01	IV.	1	7.42	3 52.96	. .	4.23	26.31	
99	10	. .	9.	22.5	36.4	. .	. .	. .	36.33	24.75	1.00	IV.	8	8.44	38 20.33	16.69	7.14	26 2.08	36 24.16
100	11	. .	. .	. .	. .	37.	50.3	. .	26 23.06	24.76	1.00	VI.	7	9.51	33 55.24	16.74	6.75	26 48.82	31 58.73
101	8	38.	51.3	5.	19.	. .	. .	. .	30 18.87	24.77	1.00	IV.	2	5.14	7 37.33	16.91	4.51	30 44.64	5 38.75
102	9	. .	. .	. .	. .	. .	37.	. .	31 9.60	24.77	1.00	VI.	9	4.45	41 18.65	16.95	7.43	31 35.37	39 23.03
103	10	. .	. .	. .	54.	. .	. .	. .	32 53.99	24.78	1.00	IV.	6	9.45	28 52.38	17.01	6.35	33 19.77	26 55.74
104	10	. .	19.5	33.2	. .	. .	. .	. .	46.93	24.78	1.00	III.	3	9.8	14 34.38	. .	5.11		
105	7	. .	. .	46.3	0.2	14.	. .	. .	36 0.11	24.79	0.99	V.	10	4.58	46 26.22	17.13	7.87	36 25.89	44 31.22
106	10	. .	. .	. .	. .	. .	. .	56.3	37 15.02	24.80	1.00	VII.	9	7.13	42 33.08	17.18	7.51	37 40.82	40 37.77
107	10	. .	33.5	47.	0.5	. .	. .	. .	13 41 0.70	+24.81	+1.00	IV.	8	8.5	−38 0.66	−17.33	− 7.12	13 41 26.51	−24 36 5.11

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(229) 99. Minutes assumed as 25.

ZONE 229. APRIL 2. B. BELT, −24° 23′. $D_\circ = -23° 57' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
108	9	. .	. .	. .	0.	13.6	27.3	. .	13 42 59.91	+24.82	+1.00	VI.	3	11.35	−15 48.39	−17.39	− 5.20	13 43 25.73	−24 13 50.98
109	9	. .	0.5	14.	28.	. .	. .	. .	46 27.89	24.83	1.00	IV.	6	10.48	29 24.15	17.52	6.39	46 53.72	27 28.06
110	11	. .	. .	19.5	33.	. .	. .	. .	33.12	24.84	1.00	IV.	1	13.11	6 38.84	. .	4.44		
111	6	. .	. .	28.	42.	55.5	9.	. .	50 41.76	24.85	1.00	VI.	3	12.8	16 5.02	17.66	5.29	50 7.61	14 7.97
112	6	. .	. .	58.	11.4	25.	39.	. .	52 11.49	24.86	1.00	VI.	4	6.40	18 18.64	17.71	5.40	51 37.35	16 21.75
113	9	. .	3.4	17.	30.5	44.	. .	. .	54 30.61	24.87	1.01	V.	1	11.2	5 33.77	17.78	4.34	54 56.49	3 35.89
114	8	. .	52.	5.3	19.	. .	. .	. .	57 19.16	24.88	1.01	IV.	1	5.58½	3 0.76	17.86	4.15	57 45.05	1 2.77
115	9	22.	36.	49.4	3.	. .	. .	. .	13 59 3.19	+24.89	+1.00	IV.	5	2.41	−21 17.48	−17.91	− 5.66	13 59 29.08	−24 19 21.05
ZONE 230. APRIL 5. K. BELT, −25° 1′. $D_\circ = -24° 34' 30''$.																			
1	5.6	. .	56.3	10.3	24.4	. .	. .	. .	9 14 24.08	+26.13	+0.99	.	10	2.14	−45 3.57	− 8.13	− 8.70	9 14 51.20	−25 19 50.40
2	9	39.9	53.4	. .	. .	. .	. .	. .	17 21.06	26.12	1.01	III.	3	3.5	11 31.34	8.48	4.88	17 48.19	24 46 14.70
3	10	. .	49.6	3.2	. .	. .	. .	. .	18 17.10	26.11	1.00	III.	5	6.10	23 2.83	8.60	5.85	18 44.21	57 47.28
4	6	. .	. .	. .	. .	. .	56.4	9.9	18 28.71	26.11	1.01	VI.	2	3.35	6 47.25	8.62	4.48	18 55.83	41 30.35
5	10	. .	. .	5.9	19.8	. .	. .	. .	20 19.76	26.11	1.01	.	3	2.30	11 13.74	8.84	4.85	20 46.88	45 57.43
6	7	. .	2.0	15.8	29.6	. .	. .	. .	21 29.60	26.11	1.01	.	3	4.8	12 3.15	8.96	4.93	21 56.72	46 47.04
7	9	. .	. .	. .	3.3	. .	. .	. .	22 3.34	26.10	1.00	.	5	10.6	25 1.88	9.03	6.00	22 30.44	59 46.91
8	7	. .	. .	. .	. .	50.2	4.3	. .	22 36.54	26.10	1.00	.	4	5.9	17 32.91	9.09	5.36	23 3.64	52 17.36
9	8	. .	. .	. .	. .	45.2	58.9	. .	23 31.34	26.10	1.00	VI.	5	5.32	22 43.55	9.19	5.82	23 58.44	57 28.56
10	10	. .	. .	. .	0.0	. .	. .	. .	25 0.08	26.09	1.00	.	4	11.57	20 58.64	9.35	5.67	25 27.17	24 55 43.66
11	9	50.1	4.3	. .	. .	. .	. .	. .	26 31.69	26.09	1.00	III.	6	12.0	30 0.41	9.52	6.42	26 58.78	25 4 46.35
12	9	. .	. .	17.1	. .	. .	. .	. .	27 30.91	26.09	0.99	.	8	11.51	39 54.61	9.63	7.27	27 57.99	14 41.51
13	10	. .	8.1	. .	. .	. .	. .	. .	28 35.70	26.08	0.99	II.	8	8.4	38 0.00	9.74	7.13	29 2.77	12 46.87
14	7	. .	. .	. .	52.7	. .	. .	. .	28 52.59	26.08	0.99	.	8	12.0	39 59.15	9.78	7.28	29 19.66	14 46.21
15	7	. .	. .	. .	. .	. .	. .	41.7	29 0.19	26.08	0.99	.	9	7.44	42 59.07	9.79	7.55	29 27.26	25 17 46.41
16	6	. .	. .	. .	. .	. .	. .	29.8	29 48.70	26.08	1.02	VII.	1	5.48	2 55.12	9.88	4.17	30 15.80	24 37 39.17
17	9	39.1	. .	6.8	. .	. .	. .	. .	34 20.58	26.07	0.99	.	8	8.15	38 5.70	10.38	7.14	34 47.64	25 12 53.22
18	9	. .	. .	. .	. .	. .	58.2	. .	34 30.67	26.07	0.99	VI.	9	6.36	42 14.63	10.40	7.48	34 57.73	17 2.51
19	10	. .	. .	23.9	. .	. .	. .	. .	36 37.71	26.06	0.99	.	9	5.40	41 46.54	10.63	7.44	37 4.76	16 34.61
20	9	. .	43.8	57.2	. .	. .	. .	. .	38 11.20	26.06	1.00	.	7	5.18	31 37.74	10.80	6.56	38 38.26	6 25.10
21	9	. .	. .	. .	. .	. .	40.8	. .	38 13.19	26.06	1.00	VI.	6	5.27	26 42.12	10.80	6.15	38 40.25	25 1 29.07
22	9	. .	. .	. .	. .	28.5	42.2	. .	39 14.65	26.05	1.00	VI.	5	8.19	24 7.76	10.92	5.92	39 41.70	24 58 54.60
23	9	. .	. .	. .	. .	. .	45.6	. .	40 17.82	26.05	1.01	VI.	1	3.38	1 49.76	11.04	4.89	40 44.88	24 36 35.69
24	10	. .	33.4	. .	. .	. .	. .	. .	43 1.00	26.05	0.99	II.	8	10.31	39 14.12	11.36	7.22	43 28.04	25 14 2.70
25	9	. .	. .	. .	14.8	. .	. .	. .	44 14.72	26.04	0.99	.	8	4.52	36 23.34	11.51	6.99	44 41.75	11 11.84
26	5	15.9	30.1	43.8	. .	. .	. .	. .	46 57.56	26.04	0.99	.	8	9.50	38 53.60	11.84	7.21	47 24.59	25 13 42.65
27	9	. .	. .	. .	. .	. .	. .	30.2	46 49.02	26.04	1.01	VII.	2	12.6	11 4.73	11.82	4.83	47 16.07	24 45 51.38
28	9	. .	. .	. .	. .	. .	42.6	. .	48 14.92	26.03	1.01	VI.	3	8.57	14 28.72	11.99	5.11	48 41.96	49 15.82
29	9	. .	. .	. .	. .	35.5	. .	. .	49 21.81	26.03	1.01	V.	1	5.11	2 36.77	12.12	4.12	49 48.85	37 23.01
30	9	30.9	44.9	. .	. .	. .	. .	. .	55 12.32	26.02	1.01	II.	2	9.31	9 46.76	12.77	4.71	55 39.35	44 34.24
31	7	. .	. .	. .	20.4	. .	. .	. .	56 20.41	26.02	1.01	.	1	1.36	0 48.41	12.90	3.98	56 47.44	35 35.29
32	9	. .	. .	. .	. .	. .	. .	15.0	56 33.88	26.02	1.01	.	2	0.5	5 1.52	12.92	4.33	57 0.91	39 48.77
33	9	. .	. .	. .	. .	. .	34.9	. .	9 58 7.27	26.01	1.00	VI.	5	5.15	22 34.97	13.09	5.81	9 58 34.28	24 57 23.87
34	9	. .	16.6	. .	. .	. .	. .	. .	10 1 44.20	26.01	1.00	II.	6	9.14	28 36.59	13.47	6.32	10 2 11.21	25 3 26.38
35	9	. .	0.6	. .	28.0	. .	. .	. .	3 28.10	26.00	1.01	.	2	4.27	7 13.63	13.65	4.50	3 55.11	24 42 1.78
36	9	48.8	2.4	. .	. .	. .	. .	. .	7 30.02	26.00	1.01	II.	3	7.29	13 44.34	14.05	5.05	7 57.03	48 33.44
37	9	. .	. .	. .	. .	49.2	. .	. .	10 7 35.52	+26.00	+1.01	V.	1	3.12	− 1 36.77	−14.06	− 4.05	10 8 2.53	−24 36 24.88

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(229) 111. Minutes assumed as 49 instead of 50.
(229) 112. Minutes assumed as 51 instead of 52.

Zone 230. April 5. K. Belt, −25° 1′. $D_{\circ}=-24° 34′ 30″$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
38	9	. .	32.5	46.4	. .	. .	. .	. .	10 10 0.15	+25.99	+1.00	.	5	6.17	−23 6.40	−14.30	− 5.85	10 10 27.14	−24 57 56.55
39	9	. .	. .	. .	27.8	. .	. .	. .	10 27.84	25.99	1.01	.	2	9.55	9 59.02	14.35	4.73	10 54.84	44 48.10
40	10	. .	. .	22.8	. .	. .	. .	. .	11 36.58	25.99	1.01	.	3	11.56	15 59.14	14.46	5.23	12 3.58	50 48.83
41	7.6	. .	. .	. .	53.8	8.3	. .	. .	13 54.24	25.99	1.01	.	1	4.34	2 18.17	14.69	4.09	14 21.24	24 37 6.95
42	7	21.8	36.4	50.3	. .	. .	. .	. .	16 3.80	25.98	0.99	.	9	8.20	43 7.22	14.91	7.58	16 30.77	25 17 59.71
43	6	. .	. .	44.9	58.7	. .	. .	. .	16 58.72	25.98	1.01	.	3	7.21	13 40.46	15.00	5.05	17 25.71	24 48 30.51
44	9	. .	. .	. .	. .	. .	49.5	. .	17 21.90	25.98	1.00	VI.	6	6.34	27 15.92	15.04	6.21	17 48.88	25 2 7.17
45	9	. .	. .	. .	41.7	55.2	. .	. .	18 41.60	25.98	1.00	.	5	2.50	21 22.02	15.17	5.69	19 8.58	24 56 12.88
46	9	0.3	14.7	. .	. .	. .	. .	. .	20 41.98	25.98	1.00	III.	6	7.36	27 47.30	15.37	6.25	21 8.96	25 2 38.92
47	9	. .	. .	. .	. .	45.2	. .	. .	21 31.47	25.98	1.01	V.	3	6.21	13 10.17	15.45	5.01	21 58.46	24 48 0.63
48	9	. .	. .	. .	. .	38.2	52.4	. .	23 24.62	25.97	0.99	VI.	9	11.35	44 45.39	15.64	7.71	23 51.58	25 19 38.74
49	10	. .	. .	. .	. .	47.7	. .	. .	25 33.96	25.97	1.01	.	3	8.27	14 13.75	15.86	5.08	26 0.94	24 49 4.69
50	9	. .	. .	26.4	. .	. .	. .	. .	27 40.18	25.97	1.01	.	1	13.8	6 37.33	16.07	4.44	28 7.16	24 41 27.84
51	10	. .	. .	. .	56.8	. .	. .	. .	28 56.79	25.96	1.00	.	6	11.20	29 40.28	16.19	6.40	29 23.75	25 4 32.87
52	10	. .	. .	. .	58.8	. .	. .	. .	30 58.65	25.96	0.99	.	9	9.50	43 52.60	16.39	7.64	31 25.60	18 46.63
53	7	. .	. .	. .	36.0	49.9	. .	. .	31 36.05	25.96	1.00	.	6	10.35	29 17.60	16.44	6.37	32 3.01	4 10.41
54	6	. .	51.2	4.9	. .	. .	. .	. .	34 18.76	25.96	0.99	.	9	3.52	40 52.08	16.69	7.38	34 45.71	15 46.15
55	9	. .	. .	. .	. .	. .	. .	54.9	34 13.51	25.96	1.00	VII.	7	2.13	30 4.10	16.68	6.44	34 40.47	4 57.22
56	7	. .	. .	. .	35.2	48.9	. .	. .	35 35.14	25.96	1.00	.	7	2.1	29 58.41	16.80	6.42	36 2.10	4 51.63
57	6.7	. .	40.8	54.6	. .	. .	. .	. .	39 8.40	25.95	0.99	.	9	3.37	40 44.52	17.12	7.37	39 35.34	25 15 39.01
58	7	. .	. .	. .	. .	. .	. .	51.7	39 10.53	25.95	1.01	VII.	2	9.40	9 51.10	17.13	4.69	39 37.49	24 44 42.92
59	9	. .	35.5	49.6	. .	. .	. .	. .	43 3.23	25.95	1.01	.	2	7.42	8 51.96	17.47	4.63	43 30.19	24 43 44.06
60	9	. .	. .	. .	. .	15.1	. .	. .	45 1.31	25.95	1.00	V.	6	12.30	30 15.54	17.65	6.45	45 28.26	25 5 9.64
61	9	. .	. .	. .	2.0	. .	. .	. .	47 2.07	25.95	1.00	.	4	6.27	18 12.24	17.83	5.41	47 29.02	24 53 5.48
62	9	. .	8.2	21.9	. .	. .	. .	. .	48 35.73	25.95	1.01	.	3	4.30	12 14.25	17.97	4.91	49 2.69	24 47 7.13
63	9	. .	32.0	. .	. .	. .	. .	. .	50 59.60	25.95	0.99	.	9	9.20	43 37.47	18.19	7.63	51 26.54	25 18 33.29
64	9	. .	44.2	. .	. .	. .	. .	. .	52 11.78	24.95	1.01	.	2	7.32	8 46.92	18.30	4.61	52 37.74	24 43 39.83
65	8	. .	. .	38.7	52.1	. .	. .	. .	52 52.30	24.95	1.00	.	6	8.18	28 8.51	18.36	6.28	53 18.25	25 3 3.15
66	7	. .	. .	. .	. .	. .	29.3	43.2	53 1.79	25.95	1.00	.	4	9.39	19 49.06	18.37	5.55	53 28.74	24 54 42.98
67	7	. .	. .	45.5	59.4	. .	. .	. .	54 59.34	25.95	1.00	.	6	11.58	29 59.44	18.55	6.43	55 26.29	25 4 54.42
68	5	. .	. .	. .	. .	36.3	. .	. .	55 22.58	25.95	1.01	.	2	12.28	11 16.16	18.58	4.82	55 49.54	24 46 9.56
69	8	. .	. .	. .	. .	. .	26.0	. .	55 58.32	25.95	1.00	.	3	12.33	16 17.79	18.64	5.25	56 25.27	24 51 11.68
70	9	43.3	. .	. .	. .	. .	. .	. .	10 59 24.78	+25.94	+0.99	.	9	5.28	−41 40.48	−18.95	− 7.48	10 59 51.71	−25 16 36.91

Zone 231. April 5. K. Belt, −25° 1′. $D_{\circ}=-24° 35′ 50″$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	53.8	. .	. .	. .	13 6 53.84	+26.15	+1.00	.	5	8.50	−24 23.55	−25.64	− 5.95	13 7 20.99	−25 0 45.14
2	9	. .	13.5	27.2	. .	. .	. .	. .	9 41.03	26.16	1.00	.	2	4.51	7 25.73	25.70	4.44	10 8.19	24 43 45.87
3	9	. .	. .	7.2	20.8	. .	. .	. .	10 20.91	26.17	1.00	.	3	3.42	11 50.04	25.72	4.82	10 48.08	48 10.58
4	9	. .	. .	. .	2.2	15.7	. .	. .	11 2.11	26.17	1.00	.	4	2.00	15 57.61	25.73	5.20	11 29.28	24 52 18.54
5	8	. .	21.3	34.9	. .	. .	. .	. .	13 48.80	26.18	1.00	.	6	5.50	26 53.88	25.80	6.17	14 15.98	25 3 15.85
6	9	. .	. .	. .	29.9	. .	. .	. .	17 29.73	26.19	0.99	.	10	7.49	47 52.49	25.88	8.05	17 56.91	25 24 16.42
7	9	. .	. .	. .	. .	58.2	. .	. .	18 44.50	26.20	1.00	V.	1	12.2	6 4.02	25.91	4.33	19 11.70	24 42 24.26
8	9	. .	. .	58.4	. .	25.8	. .	. .	21 12.10	26.21	1.00	.	9	3.5	40 28.38	25.97	7.38	21 39.31	25 16 51.73
9	7	. .	. .	10.6	24.2	. .	. .	. .	22 24.32	26.21	1.00	.	4	2.54	16 24.84	26.00	5.23	22 51.53	24 52 46.07
10	8	. .	. .	. .	. .	22.5	. .	. .	23 8.68	26.22	0.99	.	9	10.13	44 4.20	26.01	7.74	23 35.89	25 20 27.95
11	9	. .	. .	. .	. .	. .	. .	7.3	23 25.84	26.22	1.00	.	8	7.26	37 40.99	26.02	7.14	23 53.06	14 4.15
12	10	. .	6.9	20.8	. .	. .	. .	. .	13 29 34.55	+26.24	+1.00	.	6	8.38	−28 18.60	−26.17	− 6.30	13 30 1.79	−25 4 41.07

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

Zone 231. April 5. K. Belt, −25° 1′. $D_0=-24^\circ\ 35'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	9	. .	. .	38.8	. .	6.8	. .	. .	13 30 52.80	+26.25	+1.00	.	8	6.27	−37 11.24	−26.20	− 7.09	13 31 20.05	−25 13 34.53
14	9	46.6	. .	14.3	. .	. .	. .	. .	34 28.04	26.26	1.00	III.	6	12.25	30 13.01	26.28	6.48	34 55.30	25 6 35.77
15	5	. .	. .	. .	58.2	12.3	. .	. .	35 58.41	26.27	1.00	.	2	6.35	8 18.18	26.32	4.48	36 25.68	24 44 38.98
16	5	. .	. .	. .	. .	. .	15.8	29.8	36 48.27	26.27	1.00	VII.	10	2.41	45 16.82	26.34	7.82	37 15.54	25 21 40.98
17	9	. .	35.4	49 4	. .	. .	. .	. .	43 3.10	26.30	1.00	.	8	10.16	39 6.72	26.46	7.27	43 30.40	25 15 30.45
18	9	. .	. .	11.3	. .	. .	. .	. .	46 25.08	26.32	1.01	.	1	5.37	2 49.93	26.53	4.04	46 52.41	24 39 10.50
19	9	. .	. .	. .	. .	. .	. .	38.7	46 57.46	26.32	1.00	.	3	13.31	16 16.78	26.54	5.24	47 24.78	24 52 38.52
20	5	. .	37.3	50.9	4.7	. .	. .	. .	49 4.74	26.33	1.00	.	8	10.51	39 24.36	26.57	7.31	49 32.07	25 15 48.24
21	9	. .	. .	. .	14.8	. .	. .	. .	50 14.85	26.33	1.00	.	2	14.40	12 22.72	26.59	4.85	50 42.18	24 48 44.16
22	9	. .	30.2	. .	58.2	. .	. .	. .	13 57 57.96	26.37	1.00	.	8	7.56	37 56.12	26.68	7.18	13 58 25.33	25 14 19.98
23	7	. .	48.8	2.4	16.2	. .	. .	. .	14 1 16.26	26.39	1.00	.	1	9.46	4 55.49	26.71	4.21	14 1 43.65	24 41 16.41
24	9	. .	52.8	6.3	. .	. .	. .	. .	14 20.25	26.45	1.00	.	7	6.13	32 5.48	26.79	6.64	14 47.70	25 8 28.91
25	9	. .	. .	. .	53.4	. .	. .	. .	19 53.44	26.48	1.00	.	5	9.50	24 53.80	26.81	5.98	20 20.92	25 1 16.59
26	7	. .	. .	. .	45.9	59.4	. .	. .	20 45.81	26.49	1.00	.	3	11.27	15 44.51	26.81	5.18	21 13.30	24 52 6.50
27	7	. .	. .	. .	57.2	. .	. .	. .	21 57.21	26.50	1.00	.	1	4.30	2 16.15	26.81	4.00	22 24.71	24 38 36.96
28	9	. .	. .	. .	. .	. .	57.2	. .	26 29.67	26.52	0.99	.	9	7.21	42 37.46	26.81	7.62	26 57.18	25 19 1.89
29	8	. .	. .	44.1	58.0	. .	. .	. .	27 57.92	26.53	1.00	.	7	6.0	31 58.93	26.81	6.64	28 25.45	8 22.38
30	9	. .	. .	. .	. .	51.9	. .	. .	32 38.10	26.55	1.00	.	8	3.29	35 41.48	26.80	6.97	33 5.65	12 5.25
31	9	. .	11.9	25.9	. .	. .	. .	. .	34 39.60	26.57	1.00	.	9	13.41	45 49.07	26.79	7.92	35 7.17	22 13.78
32	9	. .	26.1	39.3	. .	. .	. .	. .	35 53.40	26.58	1.00	.	7	12.3	35 1.96	26.78	6.91	36 20.98	25 11 25.65
33	4	. .	. .	38.7	52.6	6.1	. .	. .	36 52.50	26.58	1.00	.	2	13.25	11 44.90	26.78	4.78	37 20.08	24 48 6.46
34	5	. .	. .	58.7	12.7	. .	. .	. .	38 12.62	26.59	1.00	.	5	6.7	23 1.36	26.77	5.81	38 40.21	59 23.94
35	6	. .	. .	. .	20.4	34.4	. .	. .	39 20.56	26.60	1.00	.	3	10.51	15 26.36	26.76	5.27	39 48.16	51 48.39
36	8	46.8	0.6	14.4	. .	. .	. .	. .	43 28.14	26.62	1.00	.	3	6.44	13 21.82	26.73	4.91	43 55.76	24 49 43.46
37	9	32.9	46.9	. .	. .	. .	. .	. .	46 14.36	26.64	1.00	III.	5	7.24	23 40.14	26.70	5.88	46 42.00	25 0 2.72
38	8.7	37.8	51.4	5.1	. .	. .	. .	. .	48 18.97	26.65	1.00	.	3	7.7	13 33.41	26.68	4.92	48 46.62	24 49 55.01
39	9	. .	. .	. .	. .	13.6	. .	. .	53 59.79	26.68	1.00	.	8	10.25	39 11.25	26.60	7.31	54 27.47	25 15 35.16
40	2.3	. .	. .	. .	. .	4.4	18.0	32.1	54 50.64	26.69	1.00	VII.	1	9.54	4 59.16	26.59	4.18	55 18.33	24 41 19.93
41	8	. .	. .	. .	. .	45.3	59.0	. .	56 31.46	26.70	1.00	VI.	7	13.22	35 41.63	26.57	6.97	56 59.16	25 12 5.17
42	9	. .	. .	. .	. .	. .	4.0	. .	14 58 36.23	26.71	1.00	.	1	5.54	2 58.50	26.54	4.03	14 59 3.94	24 39 19.07
43	9	. .	. .	. .	3.9	. .	. .	. .	15 0 3.89	26.72	1.00	.	6	11.33	29 46.84	26.52	6.44	15 0 31.61	25 6 9.80
44	9	. .	. .	10.8	. .	. .	. .	. .	1 24.61	26.73	1.00	.	10	6.12	47 3.58	26.49	8.03	1 52.34	23 28.10
45	8	44.7	58.8	. .	. .	. .	. .	. .	3 26.24	26.74	1.00	II.	7	3.11	30 33.54	26.45	6.53	3 53.98	25 6 56.52
46	7	. .	48.8	. .	16.0	. .	. .	. .	15 4 16.21	+26.75	+1.00	.	2	6.0	− 8 0.53	−26.43	− 4.42	15 4 43.96	−24 44 21.38

*Zone 232. April 10. B. Belt, −30° 30′. $D_0=-30^\circ\ 5'\ 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	2.	17.	31.2	46.	. .	. .	. .	11 29 45.80	+33.18	+1.00	IV.	4	5.24	−17 40.47	− 1.66	− 2.05	11 30 19.98	−30 23 4.18
2	8	. .	52.5	7.	21.7	. .	. .	. .	31 21.59	33.18	1.00	IV.	4	4.24	17 10.22	1.80	2.00	31 55.77	22 34.02
3	7	. .	. .	10.5	25.	39.6	. .	. .	35 25.07	33.18	1.01	V.	2	2.15	6 7.00	2.17	0.60	35 59.26	11 29.77
4	8	. .	. .	. .	. .	. .	44.	58.	36 14.67	33.18	0.99	VII.	9	6.25	42 8.64	2.24	5.25	36 48.84	47 36.13
5	8	. .	. .	. .	. .	. .	. .	3.7	37 19.96	33.18	0.98	VII.	10	6.41	47 17.61	2.34	5.95	37 54.12	52 45.90
6	7	. .	. .	5.3	19.8	. .	. .	. .	39 19.85	33.18	1.00	IV.	4	9.38	19 48.55	2.52	2.32	39 54.03	25 13.39
7	9	. .	. .	. .	. .	. .	. .	5.3	39 21.95	33.18	1.01	VII.	3	11.25	15 42.91	2.52	1.80	39 56.14	21 7.23
8	9	. .	16.2	30.5	45.	. .	. .	. .	41 45.01	33.18	0.99	IV.	7	8.33	33 16.08	2.73	4.07	42 19.18	38 42.88
9	8	. .	50.4	5.	. .	. .	. .	. .	43 19.50	33.18	0.99	III.	9	6.20½	42 6.89	2.87	5.25	43 53.67	47 35.01
10	10	. .	. .	. .	. .	27.5	. .	. .	44 12.99	33.18	1.01	V.	7	3.28	30 42.20	2.95	3.74	44 47.18	36 8.89
11	8	. .	. .	. .	30.5	45.2	. .	. .	11 45 30.52	+33.18	+0.99	V.	9	6.56	−42 24.80	− 3.06	− 5.29	11 46 4.69	−30 47 53.15

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(231) 19. Micrometer reading assumed as $12^r.31$ instead of $13^r.31$.

*In the hand-book this Zone is distinctly written as—37° 31′, three several times. May it not be—39° 31′? If so, the stars of the 5 and 6.7 magnitudes are found in Lacaille.—J. Ferguson.

ZONE 232. APRIL 10. B. BELT, −37° 31′. D_0=−30° 5′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
12	9	. .	. .	. .	37.	51.4	. .	. .	11 46 36.86	+33.18	+0.98	V.	9	11.4	−44 29.85	− 3.16	− 5.58	11 47 11.02	−30 49 58.59
13	8	. .	. .	57.	11.5	. .	. .	. .	48 11.53	33.18	1.01	IV.	3	11.40	15 51.07	3.30	1.83	48 45.72	21 16.20
14	10	. .	. .	. .	. .	30.5	. .	. .	49 14.98	33.18	0.99	V.	7	12.19	35 9.96	3.39	4.33	49 49.15	40 37.68
15	10	. .	. .	. .	. .	. .	. .	27.5	49 44.01	33.18	1.00	VII.	5	13.30	26 44.13	3.44	3.22	50 18.19	32 10.79
16	8	. .	34.4	49.2	4.	. .	. .	. .	55 3.74	33.19	1.00	IV.	4	10.59	20 29.40	3.89	2.42	55 37.93	25 55.71
17	8	. .	. .	. .	. .	. .	. .	54.	55 10.40	33.19	0.99	VII.	7	12.8	35 3.89	3.90	4.32	55 44.58	40 32.11
18	9	. .	. .	0.3	15.	. .	. .	. .	57 14.83	33.19	0.99	IV.	9	13.7	45 31.93	4.08	5.72	57 49.01	51 1.73
19	7	. .	. .	. .	. .	. .	36.	50.4	58 6.88	33.19	0.99	VII.	8	8.29	38 12.17	4.16	4.73	58 41.06	43 41.06
20	6.7	. .	. .	. .	33.7	48.5	3.	. .	11 59 19.34	33.19	1.00	VI.	6	9.41	28 50.10	4.28	3.50	11 59 53.53	34 17.88
21	9	. .	. .	. .	. .	. .	28.5	. .	12 0 59.49	33.19	0.99	VI.	8	4.41	36 17.53	4.42	4.48	12 1 33.67	41 46.43
22	9	. .	. .	. .	. .	. .	28.5	43.	1 59.49	33.19	1.00	VII.	5	4.21	22 7.31	4.51	2.62	2 33.68	27 34.44
23	8	50.5	5.	19.3	. .	. .	. .	. .	4 33.94	33.19	1.00	III.	5	5.37	22 46.16	4.76	2.71	5 8.13	28 13.63
24	6.7	. .	. .	. .	. .	. .	. .	28.	4 44.39	33.20	0.99	VII.	8	3.14	35 33.93	4.79	4.38	5 18.58	41 3.10
25	7	. .	. .	58.3	12.6	. .	. .	. .	7 12.63	33.20	0.99	IV.	10	3.49	45 51.47	5.03	5.75	7 46.82	51 22.25
26	10	. .	. .	. .	. .	. .	. .	30.3	7 47.07	33.20	1.01	VII.	2	0.50	5 23.62	5.09	0.49	8 21.28	10 49.20
27	8	. .	. .	. .	. .	38.4	53.	. .	9 23.91	33.20	1.01	VI.	4	3.16	16 35.67	5.24	1.93	9 58.12	22 2.84
28	10	. .	. .	. .	. .	. .	7.5	22.	10 38.45	33.20	0.99	VII.	8	0.59	34 25.26	5.37	4.22	11 12.64	39 54.85
29	10	. .	. .	. .	. .	50.	. .	. .	12 35.55	33.20	1.01	V.	3	7.45	13 52.50	5.57	1.58	13 9.76	19 19.65
30	9	. .	. .	. .	38.	53.	. .	. .	13 38.29	33.21	1.00	V.	4	9.21	19 39.90	5.69	2.31	14 12.50	25 7.90
31	8	. .	. .	. .	. .	. .	. .	31.	13 47.65	33.21	1.01	VII.	3	10.23	15 11.65	5.70	1.74	14 21.87	20 39.09
32	8	. .	41.	55.3	10.	. .	. .	. .	16 9.97	33.21	1.00	IV.	4	7.28	18 42.99	5.95	2.19	16 44.18	24 11.13
33	8	. .	. .	. .	. .	12.	26.5	. .	16 57.46	33.21	1.01	VI.	3	5.7	12 32.64	6.04	1.40	17 31.68	18 0.08
34	9	. .	. .	. .	29.	. .	. .	. .	18 29.07	33.21	1.00	IV.	4	5.9	17 32.91	6.20	2.04	19 3.28	23 1.15
35	9	. .	. .	. .	. .	. .	16.	30.5	18 46.99	33.21	1.00	VII.	5	7.35	23 45.14	6.23	2.84	19 21.20	29 14.21
36	9	. .	. .	28.5	42.2	. .	. .	. .	20 42.58	33.21	0.99	IV.	8	5.49	36 52.08	6.42	4.55	21 16.78	42 23.05
37	8	. .	. .	. .	. .	. .	45.	59.5	21 16.02	33.22	1.01	VII.	3	7.29	13 43.91	6.46	1.55	21 50.25	19 11.92
38	9	. .	. .	. .	. .	53.5	8.	. .	22 38.99	33.22	0.99	VI.	9	7.50	42 51.83	6.58	5.34	23 13.20	48 23.75
39	9	. .	. .	. .	3.4	18.	. .	. .	24 3.48	33.22	1.00	V.	5	4.28	22 11.38	6.70	2.64	24 37.70	27 40.72
40	9	. .	. .	. .	. .	. .	37.	. .	25 8.03	33.22	0.99	VI.	10	4.4	45 58.78	6.79	5.77	25 42.24	51 31.34
41	9	. .	. .	. .	22.	36.4	. .	. .	26 21.94	33.22	1.00	V.	7	1.43	29 49.26	6.89	3.63	26 56.16	35 19.78
42	9	9.	23.5	. .	. .	. .	. .	. .	28 52.59	33.23	0.99	II.	8	6.16	37 5.44	7.11	4.58	29 26.81	42 37.13
43	8	. .	. .	11.5	26.3	40.5	. .	. .	32 26.03	33.23	0.99	V.	10	10.20	49 8.56	7.39	6.17	33 0.25	54 42.12
44	9	. .	. .	41.5	56.	10.5	. .	. .	33 55.94	33.23	0.99	V.	10	7.21	47 38.29	7.51	5.98	34 30.16	53 11.78
45	9	. .	. .	. .	. .	13.3	28.	. .	34 58.87	33.24	1.00	VI.	6	8.29	28 13.80	7.60	3.42	35 33.11	33 44.82
46	9	. .	. .	. .	. .	. .	32.5	47.	36 3.42	33.24	0.99	VII.	9	5.28	41 39.89	7.68	5.19	36 37.65	47 12.76
47	9	. .	. .	42.5	57.	. .	. .	. .	38 57.00	33.25	1.01	IV.	1	4.54	2 28.25	7.92	0.11	39 31.26	7 56.28
48	8	. .	. .	46.	0.5	15.	. .	. .	40 0.50	33.25	1.00	V.	6	11.14	29 37.19	8.00	3.60	40 34.75	35 8.79
49	9	. .	. .	. .	. .	. .	. .	0.	40 16.71	33.25	1.01	VII.	3	.	9 57.51	8.02	1.06	40 50.97	15 26.59
50	8	. .	. .	. .	. .	. .	5.	19.5	41 36.01	33.25	1.00	VII.	4	7.41	18 48.96	8.12	2.20	42 10.26	24 19.28
51	7	. .	. .	. .	. .	25.3	40.	. .	43 10.87	33.26	1.00	VI.	4	5.14	17 35.17	8.25	2.05	43 45.13	23 5.47
52	8	. .	. .	. .	39.	53.3	. .	. .	44! 38.89	33.26	1.00	V.	6	5.1	26 29.10	8.36	3.20	45 13.15	32 0.66
53	8	. .	. .	42.5	57.3	. .	. .	. .	46 57.13	33.26	0.99	IV.	7	8.43	33 21.12	8.54	4.08	47 31.38	38 53.74
54	7	. .	. .	. .	. .	. .	48.3	3.	47 19.34	33.27	0.99	VII.	7	11.5	34 32.13	8.57	4.24	47 53.60	40 4.94
55	8	. .	4.5	19.2	33.4	. .	. .	. .	49 33.57	33.27	1.00	IV.	5	5.13	22 34.12	8.75	2.69	50 7.84	28 5.56
56	10	. .	. .	. .	. .	. .	22.5	37.	49 53.47	33.27	1.00	VII.	6	6.20	27 8.42	8.77	3.27	50 27.74	32 40.46
57	9	31.	45.5	59.5	. .	. .	. .	. .	52 14.37	33.28	1.00	III.	6	10.43	29 21.56	8.95	3.57	52 48.65	34 54.08
58	11	. .	. .	. .	. .	52.5	. .	. .	53 38.08	33.28	1.01	V.	2	8.40	9 21.14	9.03	0.99	54 12.37	14 51.16
59	10	. .	54.5	9.	. .	. .	. .	. .	55 23.54	33.29	0.99	III.	8	8.34	38 15.22	9.18	4.73	55 57.82	43 49.13
60	10	. .	. .	56.	10.5	. .	. .	. .	12 57 10.46	+33.29	+0.99	IV.	8	11.28	−39 43.01	− 9.31	− 4.93	12 57 44.74	−30 45 17.25

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.	Barom.	THERMOM.	
		At.	Ex.
1849. h. m.	in.	°	°

REMARKS.

(232) 20. Transits over T.'s V–VII assumed as recorded over T.'s IV–VI.

ZONE 232. APRIL 10. B. BELT, −37° 31′. D_0=−30° 5′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
61	7	. .	. .	. .	. .	4.5	19.	. .	12 57 49.99	+33.29	+0.99	VI.	9	7.33	−42 43.26	− 9.37	−5.31	12 58 24.27	−30 48 17.94
62	9	. .	. .	34.5	49.	. .	. .	. .	12 59 49.04	33.30	1.00	IV.	5	3.37	20 45.72	9.52	2.45	13 0 23.34	26 17.69
63	10	. .	18.	33.	47.2	. .	. .	. .	13 1 47.23	33.30	0.99	IV.	8	1.8	34 30.38	9.66	4.24	2 21.52	40 4.28
64	10	. .	. .	44.	58.5	. .	. .	. .	2 58.51	33.31	1.00	IV.	6	5.1	26 29.17	9.74	3.20	3 32.82	32 2.11
65	9	. .	. .	. .	. .	. .	28.	. .	3 58.81	33.31	1.01	VI.	1	5.18	2 40.08	9.81	0.13	4 33.13	8 10.02
66	9	. .	. .	. .	20.	34.4	. .	. .	5 19.86	33.31	0.99	V.	9	8.24	43 9.17	9.90	5.37	5 54.16	48 44.44
67	9	. .	. .	. .	. .	. .	25.	39.8	5 56.07	33.32	0.99	VII.	8	11.1	39 28.81	9.95	4.90	6 30.38	45 3.66
68	5	. .	. .	45.	59.4	14.	. .	. .	7 59.44	33.32	0.99	V.	8	6.12	37 3.61	10.10	−4.57	8 33.75	42 38.28
69	8	. .	. .	. .	23.	27.4	. .	. .	10 23.02	33.33	1.01	V.	1	0.25	0 12.53	10.27	+0.18	10 57.36	5 42.62
70	10	. .	. .	. .	42.	56.3	. .	. .	12 41.93	33.33	1.00	V.	5	7.30	23 43.14	10.42	−2.83	13 16.26	29 16.39
71	8	. .	44.3	58.8	13.	. .	. .	. .	16 13.23	33.35	1.00	IV.	4	8.17	19 7.71	10.66	2.24	16 47.58	24 40.61
72	10	. .	. .	15.5	30.	. .	. .	. .	17 30.03	33.35	1.00	IV.	5	8.11	19 4.68	10.75	2.23	18 4.38	24 37.66
73	9	. .	. .	. .	. .	. .	. .	21.6	17 38.01	33.35	1.00	VII.	7	10.51	34 25.07	10.76	4.22	18 12.36	40 0.05
74	8	. .	. .	. .	15.	29.5	. .	. .	19 14.93	33.36	0.99	V.	8	13.21	40 39.91	10.87	5.06	19 49.28	46 15.84
75	9	. .	13.7	28.5	42.5	. .	. .	. .	20 42.74	33.36	1.00	IV.	6	13.54	30 57.93	10.96	3.77	21 17.10	36 32.66
76	10	. .	. .	7.	22.0	. .	. .	. .	22 21.76	33.37	1.00	IV.	6	7.5	27 31.70	11.07	3.32	22 56.13	33 6.09
77	9	. .	. .	. .	. .	. .	. .	31.3	22 48.00	33.37	1.01	VII.	2	12.22	11 12.55	11.10	1.21	23 22.38	16 44.86
78	10	. .	. .	. .	. .	. .	. .	36.	23 52.29	33.37	0.99	VII.	9	9.10	43 31.84	11.17	5.42	24 26.65	49 8.43
79	11	31.	45.2	. .	. .	. .	. .	. .	26?14.41	33.38	1.00	II.	7	7.26	32 42.63	11.32	3.99	26 48.79	38 17.94
80	11	. .	. .	. .	0.5	. .	. .	. .	27 0.54	33.38	1.01	IV.	2	9.52	9 57.51	11.37	1.05	27 34.93	15 29.93
81	10	. .	. .	28.	42.5	. .	. .	. .	29 42.53	33.39	1.00	IV.	7	6.19	32 8.51	11.54	3.69	30 16.92	37 43.74
82	10	. .	. .	. .	45.6	0.	. .	. .	30 45.57	33.40	1.00	V.	5	10.37	25 17.44	11.61	3.04	31 19.97	30 52.09
83	9	. .	. .	. .	18.	. .	. .	. .	32 18.02	33.40	1.01	IV.	1	7.27	3 45.39	11.70	0.26	32 52.43	9 17.35
84	9	. .	52.	6.7	. .	. .	. .	. .	34 21.14	33.41	1.00	III.	7	13.0	35 30.63	11.82	4.37	34 55.55	41 6.82
85	9	. .	. .	. .	. .	. .	52.5	7.	34 23.43	33.41	0.99	VII.	8	7.56	37 55.53	11.82	4.68	34 57.83	43 32.03
86	9	. .	22.5	37.	51.5	. .	. .	. .	39 51.51	33.43	1.00	IV.	7	5.52	31 54.89	12.16	3.89	40 25.94	37 30.94
87	7	. .	. .	. .	13.	. .	. .	. .	41 13.05	33.43	1.00	IV.	3	7.17	13 38.45	12.24	1.53	41 47.48	19 12.22
88	7	. .	. .	. .	. .	. .	0.5	. .	41 31.42	33.44	1.00	VI.	5	3.54	21 54.03	12.26	2.60	42 5.86	27 28.89
89	7	. .	. .	. .	. .	. .	1.5	16.	42 32.47	33.44	1.00	VII.	6	9.22	28 40.19	12.31	3.48	43 6.91	34 15.98
90	7	50.	4.3	19.	33.3	. .	. .	. .	46 33.42	33.46	1.00	IV.	6	6.25	27 11.53	12.54	3.29	47 7.88	32 47.36
91	7	. .	2.	16.3	. .	. .	. .	. .	47 30.90	33.46	1.00	III.	3	8.51	14 25.78	12.60	1.63	48 5.36	20 0.01
92	7	. .	. .	. .	. .	. .	12.4	27.	48 43.49	33.46	1.01	VII.	2	6.27	8 13.55	12.67	0.85	49 17.96	13 47.07
93	9	. .	40.	54.3	. .	. .	. .	. .	52 8.93	33.48	1.00	III.	7	4.34	31 15.50	12.85	3.81	52 43.41	36 52.16
94	9	. .	. .	. .	5.	19.6	34.	. .	53 4.98	33.48	0.99	VI.	9	7.8	42 30.65	12.90	5.29	53 39.45	48 8.84
95	9	. .	. .	. .	53.5	8.	. .	. .	55 53.56	33.49	1.01	V.	2	2.29	6 14.06	13.04	0.59	56 28.06	11 47.69
96	9	0.	15.	29.3	. .	. .	. .	. .	57 43.74	33.50	1.00	III.	4	4.30	17 13.18	13.14	1.97	58 18.24	22 48.29
97	8	. .	. .	. .	. .	. .	19.5	34.2	57 50.54	33.50	1.00	VII.	8	2.41	35 16.69	13.15	4.34	13 58 25.04	40 54.18
98	9	. .	. .	35.	49.5	. .	. .	. .	13 59 49.73	+33.51	+1.00	IV.	4	2.4	−15 59.63	−13.25	−1.83	14 0 24.24	−30 21 34.71

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(232) 69. Transit over T. V assumed as $73^s.4$ instead of $27^s.4$.
(232) 72. Hor. thread assumed as 4 instead of 5.

ZONE 233. APRIL 11. K. BELT, −26° 16′. $D_0 = -25° 49' 40''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	22.8	. .	. .	10 12 8.86	+34.66	+1.00	V.	8	4.14	−36 4.14	− 8.58	−7.02	10 12 44.52	−26 25 59.74
2	9	. .	. .	2.1	16.0	. .	. .	. .	15 16.02	34.66	1.01	.	1	10.10	5 7.59	9.02	4.21	15 51.69	25 55 0.82
3	9	29.2	42.8	57.0	. .	. .	. .	. .	17 10.93	34.65	0.99	.	9	4.16	41 4.70	9.29	7.48	17 46.57	26 31 1.46
4	9	. .	. .	. .	. .	. .	. .	48.8	17 7.10	34.65	1.00	VII.	4	9.2	19 30.01	9.28	5.50	17 42.75	9 24.79
5	9	. .	. .	. .	29.4	. .	. .	. .	18 29.45	34.65	1.00	.	5	7.20	23 38.16	9.47	5.87	19 5.10	26 13 33.50
6	10	. .	. .	. .	49.4	. .	. .	. .	19 49.42	34.65	1.01	.	1	8.19	4 11.62	9.66	4.13	20 25.08	25 54 5.41
7	9	. .	35.6	49.8	. .	. .	. .	. .	21 3.64	34.65	0.99	.	10	3.0	45 26.76	9.83	7.89	21 39.28	26 35 24.48
8	9	. .	. .	. .	36.4	50.4	. .	. .	21 36.48	34.65	1.00	.	4	2.20	16 7.69	9.90	5.19	22 12.13	6 2.78
9	9	. .	. .	. .	53.0	. .	. .	. .	22 53.02	34.65	1.00	.	6	4.30	26 13.55	10.07	6.11	23 28.67	16 9.73
10	9	. .	. .	. .	. .	37.2	. .	. .	23 23.31	34.65	1.00	.	4	1.51	15 53.06	10.14	5.17	23 58.96	5 48.37
11	9	. .	. .	25.6	39.7	. .	. .	. .	24 39.64	34.64	1.00	.	6	1.59	24 57.40	10.32	6.00	25 15.28	14 53.72
12	9	. .	17.3	31.1	. .	. .	. .	. .	25 45.10	34.64	1.00	.	3	4.41	12 19.79	10.47	4.85	26 20.74	2 15.11
13	8	. .	. .	. .	. .	. .	. .	55.4	26 13.44	34.64	0.99	.	10	1.28	44 40.37	10.53	7.82	26 49.07	26 34 38.72
14	5	. .	. .	11.0	24.8	. .	. .	. .	28 24.87	34.64	1.01	V.	1	7.44	3 53.93	10.83	4.10	29 0.52	25 53 48.86
15	9	. .	. .	. .	. .	. .	. .	27.7	28 46.12	34.64	1.01	.	2	5.8	7 34.30	10.88	4.43	29 21.77	25 57 29.61
16	5	. .	. .	. .	. .	. .	. .	17.8	29 35.80	34.64	0.99	.	10	8.39	48 17.71	10.99	8.18	30 11.43	26 38 16.88
17	9	. .	2.2	. .	30.0	. .	. .	. .	31 30.04	34.64	1.01	.	1	7.12	3 37.83	11.25	4.07	32 5.69	25 53 33.15
18	10	. .	. .	. .	. .	. .	20.8	. .	31 52.96	34.63	0.99	.	8	8.58	38 27.38	11.30	7.23	32 28.58	26 28 25.91
19	9	. .	. .	. .	5.4	19.7	. .	. .	33 5.64	34.63	1.01	.	2	10.33	10 18.19	11.47	4.67	33 41.28	0 14.33
20	9	. .	. .	. .	. .	5.8	. .	. .	33 51.87	34.63	1.00	.	6	7.53	27 55.90	11.57	6.26	34 27.50	17 53.73
21	9	57.6	. .	. .	. .	. .	. .	. .	35 39.51	34.63	0.99	.	9	3.44	40 48.05	11.81	7.46	36 15.13	30 47.32
22	9	. .	. .	. .	42.3	. .	. .	. .	35 42.34	34.63	1.01	V.	2	12.5	11 4.53	11.82	4.74	36 17.98	1 1.09
23	9	. .	. .	. .	42.1	. .	. .	. .	37 42.16	34.63	1.00	.	3	10.15	15 8.21	12.09	5.10	38 17.79	26 5 5.40
24	7	. .	. .	. .	. .	47.8	. .	. .	38 33.96	34.63	1.01	.	1	12.41	6 23.72	12.21	4.32	39 9.60	25 56 20.25
25	8	. .	2.7	16.5	. .	. .	. .	. .	41 30.50	34.62	1.01	.	3	3.1	11 29.36	12.60	4.77	42 6.13	26 1 26.73
26	9	. .	19.5	. .	47.3	. .	. .	. .	43 47.37	34.62	1.00	.	3	12.24	16 13.25	12.90	5.20	44 22.99	6 11.35
27	9	. .	40.8	. .	. .	. .	. .	. .	45 8.71	34.62	0.99	.	9	13.1	45 28.90	13.08	7.91	45 44.32	26 35 29.89
28	6.7	. .	44.1	57.3	. .	. .	. .	. .	46 11.59	34.62	1.01	.	1	13.54	7 0.53	13.22	4.37	46 47.22	25 56 58.12
29	7	. .	. .	37.8	51.4	. .	. .	. .	46 51.58	34.62	1.01	.	2	11.13	10 38.35	13.31	4.69	47 27.21	26 0 36.35
30	7	. .	. .	27.2	41.0	. .	. .	. .	47 41.11	34.62	1.00	.	4	11.31	20 45.53	13.42	5.62	48 16.73	26 10 44.57
31	8	53.3	7.3	. .	. .	. .	. .	. .	56 35.06	34.61	1.01	.	2	5.47	7 53.97	14.59	4.45	52 10.68	25 57 53.01
32	9	. .	46.8	0.8	. .	. .	. .	. .	57 14.73	34.61	0.99	.	8	9.19	38 37.97	14.68	7.24	52 50.33	26 28 39.89
33	6	. .	5.5	19.5	33.5	. .	. .	. .	54 33.45	34.61	1.01	.	2	12.18	11 11.12	14.33	4.74	55 9.07	1 10.19
34	9	. .	. .	11.9	. .	. .	. .	. .	56 25.86	34.61	1.00	.	8	9.28	38 42.50	14.57	7.25	57 1.47	28 44.32
35	5	. .	3.2	16.9	. .	. .	. .	. .	57 30.98	34.61	1.00	.	8	10.7	39 2.18	14.71	7.30	58 6.59	29 4.19
36	5.6	. .	. .	51.8	5.8	. .	. .	. .	10 58 5.73	34.61	1.00	.	8	9.18	38 37.46	14.79	7.24	10 58 41.34	26 28 29.49
37	8	. .	. .	. .	3.7	17.8	. .	. .	11 4 3.84	34.61	1.01	.	2	9.4	9 33.31	15.56	4.59	11 4 39.46	25 59 33.46
38	9	. .	55.3	9.0	. .	. .	. .	. .	6 23.06	34.61	1.00	.	5	9.26	24 41.70	15.86	5.97	6 58.67	26 14 43.53
39	9	. .	. .	. .	50.3	4.0	. .	. .	6 50.12	34.61	0.99	.	8	11.0	39 28.90	15.91	7.34	7 25.72	29 32.15
40	9	. .	. .	. .	55.2	. .	. .	. .	7 55.26	34.61	1.00	.	3	11.17	15 39.47	16.05	5.14	8 30.87	5 40.66
41	9	. .	. .	42.2	55.8	. .	. .	. .	8 55.94	34.61	1.00	.	7	12.28	35 14.56	16.18	6.95	9 31.55	25 17.69
42	10	. .	40.4	. .	. .	. .	. .	. .	11 8.28	34.61	1.00	.	3	9.16	14 38.46	16.46	5.05	11 43.89	4 39.97
43	10	43.5	. .	. .	. .	. .	. .	. .	14 25.37	34.61	1.00	.	7	12.17	35 9.02	16.88	6.94	15 0.98	25 12.84
44	9	. .	. .	40.3	54.2	. .	. .	. .	15 54.26	34.61	1.00	.	4	6.15	18 6.19	17.06	5.36	16 29.87	8 8.61
45	9	34.9	48.9	. .	. .	. .	. .	. .	17 16.68	34.61	1.00	.	3	5.34	12 46.52	17.24	4.87	17 52.29	26 2 48.63
46	8	. .	43.4	. .	21.1	. .	. .	. .	24 21.19	34.61	1.01	.	1	10.14	5 9.61	18.12	4.19	24 56.81	25 55 11.92
47	9	. .	19.8	33.8	. .	. .	. .	. .	25 47.70	34.61	1.01	.	2	8.17	9 9.61	18.30	4.55	26 23.32	59 12.46
48	9	. .	. .	4.4	18.3	. .	. .	. .	28 18.32	34.61	1.01	.	1	11.17	5 41.37	18.61	4.23	28 53.94	25 55 44.21
49	9	. .	. .	. .	. .	13.2	. .	. .	11 29 59.25	+34.61	+0.99	.	8	12.9	−40 3.69	−18.82	−7.41	11 30 34.85	−26 30 9.92

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(233) 3. Micrometer reading assumed as 6r.16 instead of 4r.16.
(233) 31. Minutes assumed as 51 instead of 56.
(233) 32. Minutes assumed as 52 instead of 57.

Zone 233. April 11. K. Belt, −26° 16′. D_0=−25° 49′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	58.8	12.7	. .	. .	. .	11 31 12.74	+34.61	+1.01	.	2	11.28	−10 45.91	−18.97	−4.69	11 31 48.36	−26 0 49.57
51	10	. .	28.0	. .	. .	. .	. .	. .	32 56.07	34.61	1.01	.	2	8.55	9 28.77	19.18	4.57	33 31.69	25 59 32.52
52	10	. .	. .	. .	. .	3.9	. .	. .	32 50.04	34.61	1.01	.	2	7.20	8 40.86	19.17	4.50	33 25.66	25 58 44.53
53	9	. .	28.0	41.8	. .	. .	. .	. .	35 55.81	34.62	1.00	.	3	6.1	13 0.13	19.54	4.89	36 31.43	26 3 4.56
54	9	. .	. .	. .	11.3	. .	. .	. .	38 11.35	34.62	1.00	.	5	7.36	23 46.24	19.82	5.89	38 46.97	26 13 51.95
55	5	. .	7.6	. .	35.6	. .	. .	. .	40 35.54	34.62	1.01	.	1	9.42	4 53.47	20.11	4.16	41 11.17	25 54 57.74
56	6	45.4	59.4	. .	. .	. .	. .	. .	42 27.29	34.62	1.00	.	8	5.1	36 27.87	20.34	7.06	43 2.91	26 26 35.27
57	6	. .	. .	40.7	54.7	. .	. .	. .	42 54.69	34.62	1.00	.	5	9.18	24 37.66	20.39	5.96	43 30.31	14 44.01
58	8	. .	28.2	41.8	. .	. .	. .	. .	44 55.93	34.62	0.99	.	8	8.36	38 16.30	20.64	7.22	45 31.54	28 24.16
59	8	. .	. .	. .	22.3	36.3	. .	. .	45 22.24	34.62	1.01	.	2	10.49	10 26.26	20.70	4.66	45 57.87	0 31.62
60	9	. .	. .	. .	40.3	. .	. .	. .	47 40.12	34.62	0.99	.	10	7.8	47 31.81	20.98	8.14	48 15.73	37 40.93
61	8	36.0	. .	3.8	. .	. .	. .	. .	49 17.75	34.62	1.00	.	5	5.57	22 56.31	21.17	5.80	49 53.37	13 3.28
62	9	12.5	26.4	. .	. .	. .	. .	. .	51 54.28	34.63	1.00	.	5	11.45	25 51.79	21.49	6.08	52 29.91	15 59.36
63	9	. .	. .	16.4	. .	. .	. .	. .	52 30.37	34.63	0.99	.	9	7.54	42 54.11	21.56	7.70	53 5.99	26 33 3.37
64	8	. .	. .	. .	. .	. .	14.0	28.1	53 46.26	34.63	1.01	.	1	11.49	5 57.51	21.71	4.25	54 21.90	25 56 3.47
65	9	. .	. .	23.6	. .	. .	. .	. .	57 37.56	34.63	0.99	.	8	6.7	37 1.16	22.17	7.11	58 13.18	26 27 10.44
66	9	. .	. .	. .	2.0	15.9	. .	. .	11 59 1.90	34.64	0.99	.	9	8.23	43 8.73	22.34	7.72	11 59 37.53	33 18.79
67	10	. .	. .	48.8	. .	. .	. .	. .	12 2 2.74	34.64	1.00	.	3	11.24	15 43.00	22.70	5.14	12 2 38.38	5 50.84
68	8	. .	. .	59.6	13.6	. .	. .	. .	3 13.59	34.64	1.00	.	5	8.7	24 1.87	22.84	5.91	3 49.23	14 10.62
69	8.7	37.9	51.9	. .	. .	. .	. .	. .	5 19.80	34.64	0.99	.	8	10.5	39 1.17	23.09	7.32	5 55.43	29 11.58
70	9	14.8	28.7	. .	. .	. .	. .	. .	7 56.58	34.65	1.00	.	5	11.51	25 54.81	23.39	6.08	8 32.23	16 4.28
71	8	. .	. .	. .	. .	5.9	. .	. .	7 51.94	34.65	0.99	.	9	13.45	45 51.09	23.38	7.99	8 27.58	36 2.46
72	9	. .	. .	. .	44.2	. .	. .	. .	12 8 44.19	+34.65	+1.00	.	6	10.7	−29 3.48	−23.50	−6.37	12 9 19.84	−26 19 13.35

Zone 234. April 11. K. Belt. −27° 31′. D_0=−27° 7′ 0″.

1	9	. .	. .	. .	. .	. .	28.3	. .	12 29 0.09	+34.63	+1.00	.	6	8.12	−28 5.49	−15.62	−6.31	12 29 35.72	−27 35 27.42
2	9	. .	. .	. .	57.2	. .	. .	. .	34 57.26	34.64	1.00	.	3	8.51	14 25.85	17.38	4.90	35 32.90	21 28.13
3	5.4	. .	. .	. .	. .	40.1	54 0	. .	35 25.89	34.64	1.00	.	5	5.22	22 38.66	17.53	5.74	36 1.53	30 1.93
4	8	. .	. .	. .	41.0	. .	. .	. .	36 40.81	34.65	0.99	.	10	10.40	49 18.72	17.86	8.61	37 16.45	56 45.19
5	10	. .	. .	. .	39.3	. .	. .	. .	38 39.22	34.65	0.99	.	8	4.24	36 9.22	18.50	7.19	39 14.86	43 34.91
6	9	. .	. .	. .	. .	22.9	. .	. .	42 8.82	34.67	1.00	.	5	5.35	22 45.22	19.49	5.76	42 44.49	30 10.47
7	9	. .	. .	10.5	24.8	. .	. .	. .	43 24.62	34.67	0.99	.	10	6.45	47 20.22	19.88	8.40	44 0.28	54 48.50
8	9	. .	. .	. .	1.5	. .	. .	. .	44 1.33	34.67	0.99	.	10	4.17	46 5.59	20.05	8.27	44 36.99	53 33.91
9	8	. .	. .	22.4	. .	. .	. .	. .	45 36.48	34.67	1.01	.	1	2.32	1 16.65	20.49	3.54	46 12.16	8 40.68
10	9	. .	. .	. .	. .	49.2	. .	. .	46 35.22	34.68	1.01	.	1	11.14	5 39.86	20.79	3.98	47 10.91	13 4.63
11	9	. .	1.6	. .	. .	. .	. .	. .	49 29.79	34.69	1.00	.	4	11.15	20 37.46	21.66	5.54	50 5.48	28 4.66
12	9	. .	59.3	. .	. .	. .	. .	. .	50 27.50	34.69	1.00	.	6	7.4	27 31.20	21.94	6.25	51 3.19	34 59.39
13	8.7	57.4	. .	25.8	. .	. .	. .	. .	53 39.75	34.70	1.00	.	4	12.36	21 18.31	22.82	5.61	54 15.45	28 46.74
14	9	. .	. .	. .	2.4	. .	. .	. .	54 2.37	34.70	1.00	.	6	13.1	30 31.20	22.97	6.57	54 38.07	38 0.74
15	8	57.5	11.7	. .	. .	. .	. .	. .	55 39.84	34.70	1.00	.	6	8.55	28 27.17	23.50	6.35	56 15.54	35 57.02
16	8	. .	59.4	13.6	. .	. .	. .	. .	56 27.65	34.71	1.00	.	7	12.36	35 18.61	23.66	7.09	57 3.36	42 49.36
17	9	. .	. .	59.4	. .	. .	. .	. .	57 13.48	34.71	1.01	.	1	8.42	4 23.22	23.89	3.85	12 57 49.20	11 50.96
18	7	. .	57.3	. .	. .	. .	. .	. .	59 25.48	34.72	1.00	.	4	3.28	16 41.97	24.54	5.13	13 0 1.20	24 11.64
19	9	. .	. .	. .	48.1	. .	. .	. .	12 59 48.12	+34.72	+1.01	.	1	5.45	− 2 53.96	−24.63	−3.70	13 0 23 85	−27 10 22.29

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

ZONE 235. APRIL 12. B. BELT, −25° 38½′. D_0=−25° 13′ 10″.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	35.2	49.3	. .	. .	. .	. .	. .	11 48 16.92	+37.06	+1.00	II.	6	9.35	−28 47.18	− 4.04	−6.34	11 48 54.98	−25 42 7.56
2	10	. .	. .	. .	. .	. .	. .	55.5	48 13.99	37.06	1.00	VII.	5	6.49	23 22.18	4.03	5.85	48 52.05	35 42.06
3	9	. .	. .	. .	. .	. .	. .	58.5	49 16.93	37.06	1.00	VII.	6	8.46	28 22.28	4.15	6.30	49 54.99	41 42.73
4	9	. .	39.	53.	. .	. .	. .	. .	52 6.80	37.07	1.00	III.	4	7.12	18 34.89	4.48	5.43	52 44.87	31 54.80
5	8	. .	. .	. .	43.	57.	. .	. .	52 43.10	37.07	1.00	V.	5	10.32	25 14.95	4.55	6.02	53 21.17	38 35.52
6	10	. .	. .	. .	. .	51.	4.	. .	53 36.68	37.07	1.00	VI.	5	9.45	24 51.12	4.66	5.99	54 14.75	38 11.77
7	9	23.	36.7	. .	. .	. .	. .	. .	57 4.56	37.07	0.99	II.	8	6.45	37 20.16	5.06	7.13	57 42.62	50 42.35
8	9	. .	. .	. .	. .	. .	59.	. .	57 31.28	37.07	0.99	VI.	7	9.9	33 34.07	5.11	6.78	11 58 9.34	46 55.96
9	8	. .	12.5	26.2	. .	. .	. .	. .	11 59 40.14	37.07	1.01	III.	2	7.24	8 42.84	5.36	4.54	12 0 18.22	22 2.74
10	10	. .	. .	. .	52.	. .	. .	. .	12 3 51.96	37.08	1.00	IV.	7	5.18	31 37.74	5.84	6.59	4 30.04	45 0.17
11	9	. .	. .	52.	. .	. .	. .	. .	6 5.89	37.08	0.99	III.	9	7.30	42 41.97	6.09	7.61	6 43.96	56 5.67
12	7	. .	8.3	22.	. .	. .	. .	. .	7 35.96	37.08	1.00	III.	7	2.45	30 20.56	6.26	6.48	8 14.04	43 43.30
13	7	. .	. .	. .	27.	41.	55.	. .	8 27.12	37.08	1.00	VI.	7	6.50	32 23.98	6.35	6.67	9 5.20	45 47.00
14	9	. .	. .	56.	10.	24.	. .	. .	10 10.00	37.09	1.00	V.	7	3.9	30 32.66	6 55	6.50	10 48.09	43 55.71
15	7	. .	. .	. .	. .	14.5	. .	. .	11 0.75	37.09	1.01	V.	1	5.34	2 48.38	6.64	4.02	11 38.85	16 9.04
16	9	. .	. .	. .	. .	. .	. .	7.	11 25.63	37.09	1.00	VII.	2	7.23	8 42.01	6.69	4.54	12 3.72	22 3.24
17	7	. .	. .	. .	. .	3.7	18.	. .	12 50.06	37.09	1.00	VI.	8	3.10	35 31.74	6.84	6.96	13 28.15	48 55.54
18	8	. .	37.3	41.	. .	. .	. .	. .	14 54.94	37.10	1.00	III.	6	1.53	24 54.33	7.07	5.99	15 33.04	38 17.39
19	9	. .	. .	. .	49.4	3.	. .	. .	15 49.26	37.10	1.00	V.	7	5.29	31 43.25	7.18	6.60	16 27.36	45 7.03
20	9	. .	. .	. .	. .	. .	0.4	14.4	16 32.74	37.10	1.00	VII.	6	10.9	29 4.13	7.26	6.37	17 10.84	42 27.76
21	10	. .	. .	. .	. .	. .	2.3	. .	18 34.64	37.10	0.99	VI.	9	9.4	43 29.25	7.47	7.68	19 12.73	56 54.40
22	9	. .	29.3	43.5	. .	. .	. .	. .	20 57.19	37.10	1.00	III.	3	10.5	15 3.13	7.74	5.11	21 35.29	28 25.98
23	9	. .	. .	. .	. .	. .	53.	6.3	25.00	37.11	1.00	VII.	4	13.15	21 37.60	. .	5.69		
24	9	26.	40.	. .	. .	. .	. .	. .	24 7.65	37.11	1.00	II.	5	8.50	24 23.39	8.08	5.95	24 45.76	37 47.42
25	9	. .	8.	22.	. .	. .	. .	. .	25 35.80	37.11	1.00	III.	5	5.30	22 42.66	8.24	5.79	26 13.91	36 6.69
26	9	. .	. .	. .	. .	. .	46.3	0.3	26 18.62	37.11	0.99	VII.	8	11.19	39 38.12	8.32	7.34	26 56.72	53 3.78
27	9	. .	. .	. .	. .	. .	26.4	40.	28 58.51	37.12	0.99	VII.	9	7.18	42 35.59	8.61	7.61	29 36.62	56 1.81
28	8	. .	47.5	1.5	. .	. .	. .	. .	30 15.30	37.12	1.00	III.	6	8.5	28 1.92	8.75	6.27	30 53.42	25 41 26.94
29	8	. .	. .	55.	9.	. .	. .	. .	32 8.85	37.12	0.99	IV.	10	6.3	46 59.04	8.94	8.03	32 46.96	26 0 26.01
30	9	10.2	24.	. .	. .	. .	. .	. .	34 51.76	37.13	1.00	II.	6	4.19	26 7.84	9.23	6.10	35 29.89	25 39 33.17
31	6.7	. .	. .	. .	. .	10.	24.	. .	34 56.18	37.13	1.00	VI.	3	10.33	15 17.13	9.24	5.13	35 34.31	28 41.50
32	10	. .	. .	. .	. .	. .	23.	36.5	36 55.10	37.14	1.00	VII.	5	4.37	22 15.62	9.45	5.75	37 33.24	35 40.82
33	9	. .	10.	23.5	37.5	. .	. .	. .	40 37.53	37.14	1.00	IV.	6	10.6	29 2.98	9.83	6.37	41 15.67	42 29.18
34	8	. .	. .	46.3	0.5	14.4	. .	. .	42 50.37	37.15	0.99	V.	8	6.9	37 2.13	9.97	7.10	42 28.51	50 29.20
35	8	. .	. .	. .	. .	. .	54.	8.	42 26.34	37.15	1.00	VII.	5	9.20	24 38.31	10.01	5.96	43 4.49	38 4.28
36	8	. .	. .	. .	. .	. .	56.	10.3	43 28.50	37.15	1.00	VII.	5	9.49	24 52.94	10.11	5.99	44 6.65	38 19.04
37	8	. .	. .	. .	. .	. .	. .	8.5	44 26.92	37.15	1.00	VII.	6	9.39	28 49.00	10.21	6.34	45 5.07	42 15.55
38	7	7.	21.2	34.5	48.5	. .	. .	. .	47 48.60	37.16	1.00	IV.	5	10.39	25 18.52	10.54	6.03	48 26.76	38 45.09
39	10	. .	. .	48.3	2.2	. .	. .	. .	50 2.22	37.17	1.00	IV.	4	12.57	21 28.89	10.76	5.67	51 40.39	34 45.32
40	10	20.	34.	. .	. .	. .	. .	. .	54 1.67	37.18	1.00	II.	6	10.39	29 19.46	11.12	6.40	54 39.85	42 46.98
41	8	. .	. .	. .	52.	. .	. .	. .	54 52.08	27.18	1.00	IV.	4	11.0	20 29.90	11.20	5.59	55 20.26	33 56.69
42	8	. .	. .	. .	. .	. .	9.	23.	55 41.34	27.18	1.00	VII.	6	5.59	26 58.06	11.27	6.18	56 9.52	40 25.51
43	9	. .	. .	. .	. .	. .	. .	45.	12 57 3.60	27.19	1.00	VII.	3	3.45	11 51.19	11.39	4.81	12 57 31.79	25 17.39
44	9	. .	42.	56.	. .	. .	. .	. .	13 2 9.80	27.20	1.00	III.	7	3.19	30 37.70	11.85	6.51	13 2 38.00	44 6.06
45	7	. .	. .	. .	52.	6.	19.5	33.8	2 52.02	27.20	1.00	VII.	7	5.28	31 42.42	11.91	6.61	3 20.22	45 10.94
46	8	. .	. .	42.	56.	10.	. .	. .	4 56.00	27.21	1.00	V.	6	10.53	29 26.63	12.09	6.41	5 24.21	42 55.13
47	10	. .	. .	. .	49.	. .	. .	. .	6 49.07	27.21	1.00	IV.	4	4.46	17 21.32	12.26	5.31	7 17.28	30 48.89
48	9	. .	. .	38.	52.	. .	. .	. .	7 51.90	27.22	1.00	IV.	8	6.20	37 7.71	12.35	7.11	8 20.12	25 50 37.17
49	8	. .	. .	. .	25.	39.	. .	. .	9 24.95	27.22	0.99	V.	10	11.1	49 29.26	12.49	8.26	9 53.16	26 3 0.01
50	8	. .	. .	. .	36.	50.	. .	. .	13 10 46.12	+27.23	+1.00	V.	3	4.45	−12 21.77	−12.59	−4.85	13 11 14.35	−25 25 49.21

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(235) 18. One of the transit in error by 10^s. T. III assumed as correct, otherwise T=$4^s.94$

(235) 34. Transits over T.'s III–V assumed as $36^s.3$, $50^s.5$, and $4^s.4$ instead of $46^s.3$, $0^s.5$. and $14^s.4$, and minutes as 41 instead of 42.

(235) 39. Minutes assumed as 51 instead of 50.

(235) 50. Transits over T.'s IV and V assumed as 46^s and 0^s instead of 36^s and 50^s.

ZONE 235. APRIL 12. B. BELT, $-25° 38\frac{1}{2}'$. $D_0 - 25° 13' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_5	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
51	10	. .	19.	33.	. .	. .	. .	. .	13 13 46.78	+27.23	+1.00	III.	2	4.13	− 7 6.53	−12.87	−4.38	13 14 15.01	−25 20 33.78
52	9	. .	52.	5.5	19.5	. .	. .	. .	15 19.54	27.24	1.00	IV.	6	4.51	26 24.13	13.00	6.13	15 47.78	39 53.26
53	8	31.4	45.5	59.3	. .	. .	. .	. .	17 23.16	27.25	1.00	III.	8	3.40	35 46.99	13.17	6.99	17 51.41	49 17.15
54	7.8	. .	26.	40.	53.5	. .	. .	. .	18 53.72	27.26	1.00	IV.	5	7.44	23 50.27	13.40	5.88	19 21.98	37 19.55
55	8	. .	26.5	40.3	54.2	. .	. .	. .	20 54.19	27.26	1.00	IV.	7	10.0	33 59.95	13.49	6.83	21 22.45	47 30.27
56	7.8	16.	29.5	43.	57.	. .	. .	. .	22 57.12	37.27	1.01	IV.	2	3.51	6 55.47	13.66	4.36	23 35.40	20 23.49
57	7.8	. .	. .	. .	57.5	11.5	. .	. .	23 57.53	37.27	1.00	V.	8	2.35	35 14.22	13.75	6.94	24 35.80	48 44.91
58	7.8	. .	. .	37.5	51.	5.	. .	. .	27 51.16	37.28	1.00	V.	7	2.22	30 8.96	14.08	6.47	28 29.44	43 39.51
59	10	. .	. .	. .	. .	. .	. .	20.	49 38.28	37.37	0.99	VII.	9	7.31	42 42.15	15.85	7.64	50 16.64	56 15.64
60	6.7	. .	. .	. .	. .	43.3	57.2	. .	51 29.42	37.38	1.00	VI.	4	6.27	18 12.08	15.99	5.39	52 7.80	31 43.46
61	9	. .	. .	48.5	2.5	. .	. .	. .	53 2.38	37.39	0.99	IV.	9	7.46	42 50.08	16.10	7.66	53 40.76	56 23.84
62	9	. .	. .	. .	16.	30.	. .	. .	55 16.07	37.40	1.00	V.	6	7.9	27 33.68	16.27	6.23	55 54.47	41 6.18
63	8	. .	. .	16.	30.	. .	. .	. .	56 29.89	37.40	1.00	IV.	8	11.45	39 51.59	16.36	7.39	57 8.29	53 25.34
64	5	. .	. .	. .	12.	26.	39.7	. .	57 12.00	37.41	0.99	VI.	9	9.44	43 49.42	16.41	7.98	57 50.40	57 23.81
65	9	. .	. .	47.	1.	15.	. .	. .	58 14.88	37.41	1.00	V.	5	8.49	24 23.01	16.47	5.95	13 59 53.29	37 55.43
66	9	. .	. .	. .	47.	1.3	. .	. .	13 59 47.24	37.42	1.00	IV.	6	4.49	26 23.13	16.60	6.13	14 0 25.66	39 55.86
67	9	. .	. .	. .	. .	55.	. .	. .	14 0 41.16	37.42	1.00	V.	4	6.41	18 19.26	16.67	5.39	1 19.58	31 51.32
68	8	. .	. .	56.	10.	. .	. .	. .	2 9.95	37.43	1.00	IV.	5	8.59	24 28.09	16.77	5.95	2 48.38	38 0.81
69	9	. .	. .	. .	. .	55.	9.	. .	2 41.18	37.43	1.00	VI.	4	5.37	17 46.87	16.81	5.34	3 19.61	31 19.02
70	7	. .	. .	. .	1.	14.5	28.5	. .	4 0.77	37.44	1.00	VI.	9	3.40	40 45.87	16.90	7.48	4 39.21	54 20.25
71	9	. .	. .	. .	27.	40.4	. .	. .	5 26.77	37.44	1.00	V.	6	8.54	28 26.63	16.99	6.31	6 5.21	25 41 59.93
72	9	. .	. .	11.3	25.2	. .	. .	. .	7 25.10	37.45	0.99	IV.	10	7.10	47 32.82	17.13	8.12	8 3.54	26 1 8.07
73	9	. .	41.5	55.	9.	. .	. .	. .	9 9.05	37.46	1.00	IV.	4	4.22	17 9.21	17.25	5.28	9 47.51	25 30 41.74
74	9	. .	. .	. .	43.	57.	. .	. .	9 43.04	37.46	1.00	V.	7	6.31	32 14.52	17.29	6.67	10 21.50	45 48.48
75	9	45.4	59.2	13.	. .	. .	. .	. .	14 26.93	37.48	1.00	III.	6	6.38	27 18.05	17.58	6.21	15 5.41	40 51.84
76	9	. .	. .	. .	8.5	22.3	. .	. .	15 8.52	37.49	1.00	V.	3	8.55	14 27.83	17.62	5.04	15 47.01	25 28 0.49
77	8	. .	. .	15.	29.2	43.	. .	. .	16 29.00	37.49	0.99	V.	10	11.15	49 36.32	17.71	8.31	17 7.48	26 3 12.34
78	9	. .	28.	42.	. .	. .	. .	. .	17 55.82	37.50	1.00	III.	8	13.56	40 57.60	17.79	7.50	18 34.32	25 54 32.89
79	7	. .	. .	0.5	14.5	28.6	. .	. .	20 14.57	37.51	1.00	V.	1	13.46	6 56.46	17.93	4.33	20 53.08	20 28.72
80	9	. .	. .	. .	. .	34.5	48.5	. .	21 20.70	37.52	1.00	VI.	7	12.20	35 10.37	18.00	6.95	21 59.22	48 45.32
81	9	. .	. .	. .	. .	. .	. .	52.	22 10.30	37.52	1.00	VII.	8	14.7	41 2.82	18.05	7.50	22 48.82	54 38.37
82	8	. .	50.4	4.3	. .	. .	. .	. .	25 18.14	37.53	1.00	III.	3	10.30	15 15.74	18.23	5.12	25 56.67	28 49.09
83	9	. .	. .	. .	. .	. .	4.	. .	25 36.14	37.53	1.00	VI.	2	10.6	10 4.42	18.25	4.62	26 14.67	23 37.29
84	9	. .	. .	. .	19.	. .	46.5	. .	27 18.85	37.55	1.00	VI.	9	5.31	41 41.84	18.35	7.58	27 57.40	55 17.77
85	7	. .	36.5	. .	. .	. .	. .	. .	31 4.24	37.57	1.00	II.	6	5.37	22 46.07	18.57	5.77	31 42.81	36 20.41
86	9	. .	. .	. .	. .	. .	37.	. .	31 9.23	37.57	1.00	VI.	6	4.52	26 24.48	18.58	6.13	31 47.80	39 59.19
87	8	. .	. .	. .	. .	. .	. .	16.3	32 34.68	37.58	1.00	VII.	7	8.44	33 21.27	18.66	6.77	32 13.26	46 56.70
88	8	. .	60.2	14.	. .	. .	. .	. .	35 27.88	37.59	1.00	III.	2	7.23	8 42.33	18.82	4.49	35 6.47	22 15.64
89	7	40.	53.5	7.3	. .	. .	. .	. .	38 21.28	37.61	1.00	III.	3	7.25	13 42.44	18.98	4.95	38 59.89	25 27 16.37
90	7	. .	. .	. .	. .	. .	. .	14.5	38 32.74	37.61	0.99	VII.	10	6.41	47 17.84	18.99	8.12	39 11.34	26 0 54.95
91	9	. .	. .	50.	. .	. .	. .	. .	41 3.88	37.63	1.00	III.	8	12.8	40 3.14	19.14	7.42	41 42.51	25 53 39.70
92	8	. .	19.5	33.4	47.5	. .	. .	. .	42 47.29	37.63	0.99	IV.	10	5.0	46 27.27	19.23	8.04	43 25.91	26 0 4.54
93	9	. .	10.	23.5	. .	. .	. .	. .	45 37.55	37.65	1.00	III.	6	3.37	25 46.78	19.38	6.07	46 16.20	25 39 22.23
94	8	49.5	3.3	17.	. .	. .	. .	. .	47 30.99	37.66	1.00	III.	6	5.45	26 51.32	19.48	6.17	48 9.65	40 26.97
95	8	37.5	51.3	5.	. .	. .	. .	. .	52 18.98	37.69	1.00	III.	5	4.50	22 22.49	19.72	5.74	52 57.67	35 57.95
96	8	. .	. .	. .	. .	. .	16.	. .	52 48.08	37.69	1.00	VI.	1	4.9	2 5.40	19.74	3.64	53 26.77	15 38.78
97	8	. .	49.	3.	. .	. .	. .	. .	56 16.80	37.71	1.00	III.	6	3.37	25 46.78	19.91	6.07	56 55.51	39 22.76
98	7.8	. .	. .	. .	52.5	6.3	. .	. .	56 52.52	37.71	1.00	V.	4	5.18	17 37.40	19.93	5.31	57 31.23	31 12.64
99	9	. .	. .	. .	. .	24.	. .	. .	58 10.19	37.72	1.00	V.	3	6.39	13 19.26	19.99	4.92	14 58 48.91	26 54.17
100	7	. .	. .	. .	27.	40.	54.	. .	14 59 26.43	+37.73	+0.99	VI.	10	5.7	−41 29.74	−20.05	−7.57	15 0 5.15	−25 55 7.36

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(235) 53. Transits over T.'s I–III assumed as $41^{s}.4$, $55^{s}.5$, and $9^{s}.3$ instead of $31^{s}.4$, $45^{s}.5$, and $59^{s}.3$.
(235) 54. Right ascension small 24^{s} by Mural, 1848, April 20, Mer. Circle, 1848, May 27, and Arg. Z., 380, 60.
(235) 65. Minutes assumed as 59 instead of 58, and transits over T.'s II–IV as recorded over T.'s III–V.
(235) 85. Hor. thread assumed as 5 instead of 6.
(235) 87. Minutes assumed as 31 instead of 32.
(235) 88. Minutes assumed as 34 instead of 35.
(235) 100. Hor. thread assumed as 9 instead of 10.

ZONE 236. APRIL 14. B. BELT, −26° 53½′. $D_0 = -26° 28' 40''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	18.	31.8	. .	. .	. .	10 22 31.94	+40.87	+1.01	IV.	4	2.25	−16 10.21	− 9.76	− 5.13	10 23 13.82	−26 45 5.10
2	9	. .	. .	37.	51.	. .	. .	. .	25 51.04	40.87	0.99	IV.	7	11.2	34 31.21	11.29	6.96	26 32.90	27 3 29.46
3	6	. .	. .	. .	. .	. .	. .	49.5	26 7.72	40.87	1.01	VII.	1	11.14	5 39.47	11.42	4.09	26 49.60	26 34 34.98
4	7	. .	30.5	44.3	54.5	. .	. .	. .	28 58.43	40.86	1.00	IV.	5	7.41	23 48.75	12.73	5.88	29 40.29	26 52 47.36
5	7	. .	. .	. .	. .	6.5	20.2	. .	29 52.34	40.86	0.99	VI.	10	9.2	48 29.13	13.14	8.39	30 34.19	27 17 30.66
6	8	. .	. .	24.5	38.4	. .	. .	. .	31 38.40	40.86	0.99	IV.	9	4.30	41 11.25	13.95	7.65	32 20.25	27 10 12.85
7	9	. .	29.	43.	. .	. .	. .	. .	33 57.03	40.85	1.00	III.	6	4.40	26 18.55	15.02	6.13	34 38.88	26 55 19.70
8	8	. .	. .	. .	. .	. .	. .	14.	34 32.15	40.85	1.01	VII.	3	3.43	11 50.15	15.28	4.69	35 14.01	40 50.12
9	8	. .	. .	. .	. .	. .	24.2	38.	37 56.10	40.85	1.01	VII.	3	9.7	14 33.53	16.85	4.96	38 37.96	43 35.34
10	9	. .	. .	. .	. .	. .	54.	8.	39 25.96	40.85	1.00	VII.	6	11.5	29 32.33	17.54	6.45	40 7.81	26 58 36.32
11	7	. .	. .	. .	. .	23.	37.	. .	41 8.98	40.85	1.00	VI.	8	9.2	38 29.23	18.32	7.37	41 50.83	27 7 34.92
12	9	. .	58.5	12.	26.2	. .	. .	. .	43 26.23	40.85	1.00	IV.	8	4.53	36 23.84	19.38	7.16	44 8.08	27 5 30.38
13	9	. .	. .	. .	. .	24.	38.	. .	44 9.95	40.84	1.00	VI.	4	5.17	17 35.76	19.72	5.26	44 41.79	26 46 40.74
14	9	. .	. .	. .	. .	. .	. .	44.	45 2.20	40.84	1.01	VII.	2	3.3	6 30.88	20.12	4.16	45 44.05	26 35 35.16
15	8	. .	31.3	45.	59.2	. .	. .	. .	47 59.17	40.84	0.99	IV.	7	6.24	32 11.03	21.47	6.72	48 41.00	27 1 19.22
16	9	. .	. .	35.	48.5	2.3	. .	. .	50 48.63	40.84	1.00	V.	3	12.39	16 20.78	22.77	5.13	51 30.47	26 45 28.68
17	7	. .	. .	. .	. .	. .	5.	18.5	51 36.75	40.84	1.01	VII.	2	13.28	11 46.02	23.14	4.68	52 18.60	40 53.84
18	8	39.	53.	7.3	. .	. .	. .	. .	55 21.08	40.84	1.01	III.	3	7.2	13 30.85	24.86	4.85	56 2.93	42 40.56
19	9	. .	. .	. .	58.	. .	. .	. .	56 58.05	40.83	1.01	IV.	3	4.38	12 18.28	25.61	4.73	57 39.89	26 41 28.62
20	8	. .	. .	. .	7.7	21.3	. .	. .	10 58 7.48	40.83	1.00	V.	7	5.23	31 40.22	26.14	6.67	10 58 49.31	27 0 53.03
21	5.6	. .	. .	. .	47.	1.	15.	. .	11 0 46.94	40.83	0.99	VI.	10	6.6	47 0.39	27.36	8.25	11 1 28.76	27 16 16.00
22	9	. .	. .	. .	. .	7.	21.	. .	1 52.96	40.83	1.00	V.	5	7.9	23 32.58	27.86	5.85	2 34.79	26 52 46.29
23	8	. .	. .	. .	. .	. .	. .	51.	11 2 9.13	+40.83	+1.01	VII.	3	8.20	−14 9.83	−27.99	− 4.92	11 2 50.97	−26 43 22.74

ZONE 237. APRIL 16. B. BELT, −22° 31′. $D_0 = -22° 6' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	24.5	38.	10 11 57.46	+46.18	+1.01	VII.	2	4.12	− 7 5.76	− 1.09	− 4.74	10 12 44.65	−22 13 11.59
2	10	. .	. .	58.2	11.5	. .	. .	. .	14 11.61	46.18	1.00	IV.	6	9.38	28 48.85	1.31	6.27	14 58.79	34 56.43
3	9	5.6	19.	. .	. .	. .	. .	. .	15 46.15	46.17	0.99	II.	7	14.48	36 25.01	1.46	6.82	16 33.31	42 33.29
4	9	. .	58.	11.4	. .	. .	. .	. .	17 25.00	46.17	0.99	III.	8	13.0	40 29.37	1.63	7.10	18 12.16	46 38.10
5	9	. .	. .	14.5	28.	. .	. .	. .	18 28.00	46.17	1.00	IV.	7	8.50	33 24.65	1.74	6.58	19 15.17	39 32.97
6	9	. .	. .	24.	37.5	. .	. .	. .	19 37.56	46.16	1.00	IV.	4	10.20	20 9.73	1.85	5.67	20 24.72	26 17.25
7	10	. .	42.3	56.	. .	. .	. .	. .	21 9.44	46.16	1.00	III.	6	6.41	27 19.57	2.00	6.16	21 56.60	33 27.73
8	10	15.	28.4	. .	. .	. .	. .	. .	55.52	46.16	1.00	II.	6	5.13	26 35.08	2.18	6.11	23 42.68	32 43.37
9	7	. .	. .	17.	30.4	. .	. .	. .	24 30.40	46.16	0.99	IV.	9	9.32	43 43.53	2.33	7.33	25 17.55	49 53.19
10	7	. .	35.7	49.2	. .	. .	. .	. .	27 2.74	46.15	1.00	III.	4	6.2	17 59.61	2.58	5.50	27 49.89	24 7.69
11	10	. .	. .	. .	. .	. .	. .	56.	27 15.47	46.15	1.00	VII.	5	7.27	23 41.38	2.59	5.92	28 2.62	29 49.89
12	8	58.7	12.2	26.	. .	. .	. .	. .	29 39.36	46.15	1.00	III.	6	12.5	30 2.94	2.84	6.34	30 26.51	36 12.12
13	10	. .	19.8	33.2	. .	. .	. .	. .	31 46.80	46.14	1.00	III.	7	7.49	32 53.86	3.02	6.55	32 33.94	39 3.43
14	10	. .	. .	. .	. .	. .	24.	37.5	31 56.92	46.14	1.00	VII.	7	10.3	34 1.15	3.06	6.64	32 44.06	40 10.85
15	9	. .	. .	23.3	37.	50.4	. .	. .	33 36.89	46.14	1.00	V.	7	4.14	31 5.45	3.21	6.42	34 24.03	37 15.08
16	8	. .	. .	40.	54.	. .	. .	. .	34 53.72	46.14	0.99	IV.	9	1.25	39 37.95	3.34	7.04	35 40.85	45 48.33
17	9	. .	. .	. .	. .	56.2	10.	23.	36 42.73	46.14	1.01	VII.	1	8.1	4 2.23	3.51	4.51	37 29.88	10 10.25
18	7.8	. .	. .	. .	. .	22.5	36.	. .	38 8.96	46.13	1.00	VI.	7	6.56	32 27.13	3.61	6.52	38 56.09	38 37.26
19	9	. .	52.	5.7	19.2	. .	. .	. .	41 19.18	46.13	1.00	IV.	3	6.23	13 11.22	3.95	5.16	42 6.31	19 20.33
20	10	. .	. .	6.5	20.3	. .	. .	. .	43 20.08	46.13	0.99	IV.	10	6.51	47 23.24	4.13	7.61	44 7.20	53 34.98
21	10	. .	. .	. .	20.5	34.	. .	. .	44 20.54	46.13	1.00	V.	4	6.31	18 14.23	4.23	5.51	45 7.67	24 23.97
22	9	. .	. .	. .	40.5	. .	. .	. .	10 45 40.51	+46.12	+1.00	IV.	6	5.41	−26 49.34	− 4.35	− 6.13	10 46 27.63	−22 32 59.82

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(237) 21. Transit over middle thread assumed as at $20^{s}.5$ instead of $28^{s}.5$.

ZONE 237. APRIL 16. B. BELT, −22° 31′. D_0=−22° 6′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	8	. .	. .	. .	. .	. .	30.	43.2	10 46 2.80	+46.12	+1.00	VII.	4	3.23	−16 39.14	− 4.38	− 5.41	10 46 49.92	−22 22 48.93
24	10	. .	. .	. .	. .	. .	52.	5.6	47 25.00	46.12	1.00	VII.	4	4.51	17 23.51	4.51	5.46	48 12.12	23 33.48
25	10	. .	. .	. .	. .	4.5	18.	. .	48 50.95	46.12	1.00	VI.	6	11.45	29 52.75	4.64	6.34	48 38.07	36 3.73
26	8	. .	34.4	48.	. .	. .	. .	. .	51 1.50	46.12	1.00	III.	4	11.26	20 42.98	4.84	5.70	51 47.62	26 53.52
27	8	. .	55.5	9.	. .	. .	. .	. .	52 22.54	46.12	1.00	III.	6	13.11	30 36.21	4.96	6.39	53 9.66	36 47.56
28	9	. .	54.2	8.	. .	. .	. .	. .	53 21.40	46.12	1.00	III.	6	12.51	30 26.13	5.05	6.38	54 8.52	36 37.56
29	10	. .	. .	55.	8.8	. .	. .	. .	54 8.66	46.12	1.00	IV.	6	11.33	29 46.84	5.12	6.34	54 55.78	35 58.30
30	9	. .	. .	. .	. .	. .	3.	16.5	54 35.90	46.11	0.99	VII.	9	6.38	42 15.48	5.16	7.25	55 23.00	48 27.89
31	10	. .	33.4	46.5	. .	. .	. .	. .	57 0.24	46.11	1.00	III.	4	6.44	18 20.79	5.38	5.51	10 57 47.35	24 31.68
32	9	. .	53.	6.5	. .	. .	. .	. .	10 59 20.04	46.11	1.00	III.	6	11.21	29 40.75	5.58	6.33	11 0 7.15	35 52.66
33	9	. .	2.	15.8	. .	. .	. .	. .	11 1 29.20	46.11	0.99	III.	8	8.6	38 1.14	5.77	6.94	2 16.30	44 13.85
34	10	. .	. .	. .	. .	10.8	24.2	. .	1 57.19	46.11	1.00	VI.	5	11.37	25 47.62	5.82	6.06	2 44.30	31 59.50
35	8	. .	4.5	18.1	41.5	. .	. .	. .	5? 31.57	46.11	1.01	IV.	1	9.36	4 50.45	6.13	4.55	6 18.69	11 1.13
36	10	. .	17.	30.3	43.6	. .	. .	. .	10 43.84	46.10	1.00	IV.	2	12.58	11 31.29	6.59	5.03	11 30.94	17 42.91
37	8	. .	. .	53.2	7.	20.5	. .	. .	12 6.83	46.10	0.99	V.	10	8.3	47 59.52	6.72	7.67	12 53.92	54 13.91
38	9	. .	. .	. .	. .	. .	. .	22.	12 21.74	46.10	1.00	VII.	4	4.22	17 8.90	6.74	5.43	13 8.84	23 21.07
39	10	. .	. .	. .	. .	. .	4.5	18.1	13 37.48	46.10	1.00	VII.	7	2.32	30 13.75	6.85	6.36	14 24.58	36 26.95
40	7.8	. .	. .	. .	6.	19.5	33.	. .	15 5.93	46.10	0.99	VI.	10	5.50	46 52.34	6.98	7.59	15 53.02	53 6.91
41	10	41.5	55.1	. .	. .	. .	. .	. .	17 22.16	46.10	0.99	II.	8	9.27	38 41.86	7.19	6.99	18 9.25	44 56.04
42	9	. .	. .	. .	46.	59.5	. .	. .	19 46.04	46.10	1.00	V.	4	11.4	20 31.89	7.40	5.69	20 33.14	26 44.98
43	10	. .	. .	. .	. .	. .	32.4	. .	21 5.16	46.10	1.01	VI.	1	11.35	5 50.31	7.51	4.62	21 52.27	12 2.43
44	10	. .	. .	. .	. .	. .	27.	40.3	22 59.82	46.10	1.00	VII.	7	8.7	33 2.66	7.68	6.56	23 46.92	39 16.90
45	9	. .	46.5	0.	. .	. .	. .	. .	24 13.54	46.10	1.00	III.	6	6.20	27 8.98	7.78	6.15	25 0.64	33 22.91
46	7	. .	. .	. .	. .	55.2	8.5	. .	24 41.55	46.10	1.00	VI.	7	3.23	30 39.61	7.82	6.40	25 28.65	36 53.83
47	8	. .	. .	. .	. .	. .	. .	12.	25 31.40	46.10	1.00	VII.	7	4.26	31 11.22	7.89	6.43	26 18.50	37 25.54
48	9	. .	. .	. .	. .	. .	2.5	16.	26 35.41	46.10	0.99	VII.	8	8.22	38 8.92	7.99	6.94	27 22.50	44 23.85
49	10	. .	. .	. .	7.	20.5	. .	. .	28 6.90	46.10	0.99	V.	9	6.26	42 9.71	8.11	7.24	28 53.99	48 25.06
50	7.8	. .	. .	. .	. .	21.2	35.	. .	29 7.78	46.10	1.00	VI.	4	6.54	18 25.72	8.20	5.52	29 54.88	24 39.44
51	10	. .	. .	. .	29.	. .	. .	. .	32 29.02	46.10	1.01	IV.	2	3.56	6 58.00	8.49	4.70	33 16.13	13 11.19
52	9	. .	. .	. .	. .	. .	. .	11.	32 30.62	46.10	1.01	VII.	2	7.36	8 48.63	8.49	4.84	33 17.73	15 1.96
53	9	. .	23.3	37.	. .	. .	. .	. .	35 50.44	46.10	1.01	III.	1	9.59	5 2.01	8.77	4.56	36 37.55	11 15.34
54	10	. .	36.3	50.	. .	. .	. .	. .	37 3.44	46.10	1.01	III.	1	9.16	4 40.33	8.87	4.54	37 50.55	10 53.74
55	9	. .	. .	54.6	7.3	. .	. .	. .	38 7.72	46.10	1.01	IV.	2	6.20	8 10.61	8.96	4.78	38 54.83	14 24.35
56	9	. .	. .	. .	. .	14.	27.3	. .	39 0.32	46.10	1.01	VI.	2	2.38	6 18.53	9.04	4.65	39 47.43	12 32.22
57	7.8	. .	. .	. .	. .	. .	34.	47.4	40 6.90	46.10	1.01	VII.	2	8.24	9 12.83	9.13	4.85	40 54.01	15 26.81
58	9	. .	. .	. .	. .	48.	1.2	. .	41 34.26	46.10	1.01	VI.	1	12.17	6 11.48	9.25	4.64	42 21.37	12 25.37
59	10	. .	18.	31.2	45.	. .	. .	. .	45 44.94	46.10	1.01	IV.	2	9.8	9 35.32	9.59	4.89	46 32.05	15 49.80
60	8	. .	. .	. .	7.2	21.	. .	. .	47 7.32	46.10	1.00	V.	6	13.17	30 39.24	9.70	6.40	47 54.42	36 55.34
61	10	. .	. .	40.5	54.	. .	. .	. .	48 53.99	46.10	1.00	IV.	7	9.17	33 38.26	9.85	6.60	49 41.09	39 54.71
62	8	55.2	9.	22.3	. .	. .	. .	. .	50 35.89	46.10	1.00	III.	6	8.43	28 21.09	9.99	6.24	51 22.99	34 37.32
63	10	0.	13.6	. .	. .	. .	. .	. .	52 40.60	46.10	1.00	II.	5	8.20	24 8.28	10.15	5.94	53 27.70	30 24.37
64	10	. .	. .	. .	. .	. .	20.8	34.2	11 52 53.70	46.10	1.01	VII.	2	11.32	10 47.63	10.17	4.97	11 53 40.81	17 2.77
65	9	. .	. .	. .	. .	. .	. .	31.	12 0 50.45	46.11	1.00	VII.	5	12.29	26 13.66	10.81	6.08	12 1 37.56	32 30.55
66	6.7	. .	. .	20.2	34.	47.4	. .	. .	2 33.83	46.11	0.99	V.	8	11.16	39 36.94	10.94	7.07	3 20.93	45 54.95
67	8	. .	47.	0.3	14.2	28.	. .	. .	7 14.15	46.11	1.00	V.	5	9.32	24 44.70	11.32	5.98	8 1.26	31 2.00
68	10	. .	38.	51.7	. .	. .	. .	. .	10 5.14	46.12	1.01	III.	1	9.5	4 34.78	11.56	4.52	10 52.27	10 50.86
69	9	. .	. .	53.6	7.2	. .	. .	. .	11 7.16	46.12	1.00	IV.	6	11.15	29 37.76	11.64	6.33	11 54.28	35 55.73
70	9	. .	10.2	23.2	37.	. .	. .	. .	12 36.95	46.12	0.99	IV.	9	9.49	43 52.10	11.76	7.40	13 24.06	50 11.26
71	9	. .	. .	55.	8.4	. .	. .	. .	12 14 8.50	+46.12	+1.00	IV.	4	8.00	−18 59.14	−11.88	− 5.57	12 14 55.62	−22 25 16.59

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(237) 25. Minutes assumed as 47 instead of 48.
(237) 35. Time of transit over middle thread assumed as $31^{s}.5$ instead of $41^{s}.5$.

ZONE 237. APRIL 16. B. BELT, −22° 31′. D₀=−22° 6′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	7	. .	48.8	2.2	15.5	. .	. .	. .	12 59 15.66	+46.20	+0.99	IV.	9	3.34	−40 43.01	−15.22	− 7.16	13 0 2.85	−22 47 5.39
73	5	. .	. .	. .	. .	25.2	39.	52.2	13 1 11.78	46.20	1.00	VII.	3	5.11	12 34.60	15.34	5.08	0 58.98	18 55.02
74	8	. .	. .	. .	. .	. .	44.	58.	2 17.17	46.21	1.00	VII.	7	2.56	30 25.84	15.41	6.39	3 4.38	36 47.64
75	8	. .	. .	5.5	19.3	. .	. .	. .	4 19.16	46.21	1.01	IV.	1	3.36	1 48.92	15.54	4.31	5 6.38	8 8.77
76	10	39.3	53.	6.2	. .	. .	. .	. .	7 19.92	46.22	1.00	V.	8	9.40	38 48.53	15.72	7.02	8 7.14	45 11.27
77	10	. .	. .	. .	33.2	46.3	0.0	. .	8 32.97	46.22	1.00	.	3	4.53	12 25.84	15.80	5.06	9 20.19	18 46.70
78	5	. .	. .	46.	59.	13.	26.	40.	9 59.29	46.22	1.00	VII.	4	2.53	16 24.02	15.89	5.37	10 46.51	22 45.28
79	9	. .	9.5	23.	. .	. .	. .	. .	13 36.54	46.23	1.01	III.	1	7.15	3 39.31	16.09	4.44	14 23.78	9 59.84
80	9	. .	. .	. .	. .	. .	5.	19.	13 38.21	46.23	1.01	VII.	1	7.22	3 42.56	16.09	4.44	14 25.45	10 3.09
81	10	. .	. .	20.	33.4	. .	. .	. .	15 33.40	46.24	1.00	IV.	9	5.5	41 28.89	16.19	7.22	16 20.64	47 52.30
82	10	. .	. .	. .	. .	. .	. .	37.	15 56.43	46.24	1.00	VII.	6	7.12	27 34.92	16.22	6.18	16 43.67	33 57.32
83	9	. .	. .	. .	. .	32.	45.4	. .	17 18.38	46.25	1.00	VI.	4	12.21	21 10.59	16.29	5.72	18 5.63	27 32.60
84	8	3.5	17.	30.5	. .	. .	. .	. .	20 44.05	46.26	1.00	III.	5	7.47	23 51.75	16.48	5.92	21 31.31	30 14.15
85	8	. .	. .	. .	. .	43.	56.5	. .	29.48	46.27	0.99	VI.	10	4.7	46 0.41	16.	7.57		
86	8	28.	41.5	55.3	8.8	. .	. .	. .	28 8.69	46.28	0.99	IV.	9	10.48	44 21.85	16.86	7.46	28 55.96	50 46.17
87	8	. .	. .	. .	. .	. .	22.5	36.	28 55.44	46.28	1.00	VII.	4	11.44	20 51.78	16.90	5.69	29 42.72	27 14.37
88	8	. .	0.5	13.8	27.5	. .	. .	. .	32 27.45	46.29	1.00	IV.	7	11.48	34 54.40	17.09	6.74	33 14.74	41 18.23
89	10	. .	. .	. .	. .	. .	25.	38.7	32 58.05	46.29	1.00	VII.	3	10.3	15 1.84	17.11	5.26	33 45.34	21 24.21
90	9	26.4	40.	. .	. .	. .	. .	. .	38 7.06	46.31	1.00	II.	8	8.1	37 58.50	17.36	6.96	38 54.37	44 22.82
91	9	. .	. .	. .	38.5	52.	. .	. .	38 38.45	46.31	1.00	V.	7	9.13	33 36.21	17.39	6.65	39 25.76	40 0.25
92	8	. .	31.6	45.	58.7	. .	. .	. .	43 58.60	46.33	1.00	IV.	8	11.32	39 45.04	17.64	7.11	44 45.93	46 9.79
93	9	. .	. .	. .	. .	8.1	21.6	. .	44 54.57	46.33	1.00	VI.	9	5.33	41 42.87	17.66	7.25	45 41.90	48 7.78
94	8	. .	. .	37.6	51.	. .	. .	. .	47 51.09	46.35	1.00	IV.	3	11.1	15 31.40	17.81	5.30	48 38.44	21 54.51
95	7	. .	. .	. .	. .	33.5	47.	0.5	48 19.98	46.35	1.00	IV.	2	11.46	10 55.00	17.83	4.94	49 7.33	17 17.77
96	8	13.	26.4	40.	. .	. .	. .	. .	50 53.54	46.36	1.00	III.	7	12.37	35 19.08	17.94	6.77	51 40.90	41 43.79
97	9	. .	. .	53.	. .	20.5	. .	. .	52 6.75	46.36	1.00	V.	6	13.48	30 54.87	17.99	6.43	52 54.11	37 19.29
98	10	. .	. .	0.2	. .	. .	. .	. .	56 13.73	46.37	1.00	III.	4	10.25	20 12.22	18.14	5.64	57 1.10	26 36.00
99	9	. .	. .	. .	. .	. .	53.2	7.	56 26.29	46.37	1.00	VII.	4	7.27	18 42.18	18.15	5.52	57 13.66	25 5.85
100	9	56.	9.5	23.2	. .	. .	. .	. .	13 58 36.62	46.39	1.00	III.	6	8.55	28 27.14	18.24	6.26	13 59 24.01	34 51.64
101	9	46.	59.7	13.3	. .	. .	. .	. .	14 1 26.67	46.40	1.00	III.	2	5.8	7 34.27	18.34	4.69	14 2 14.07	13 57.30
102	9	. .	. .	. .	. .	. .	29.3	. .	2 2.06	46.40	1.00	VI.	1	10.57	0 28.60	18.36	3.50	2 49.46	6 50.46
103	8	25.4	39.	52.3	6.	. .	. .	. .	5 5.97	46.42	1.00	IV.	4	8.27	19 12.75	18.47	5.56	5 53.39	25 36.78
104	8	. .	24.2	37.5	51.	. .	. .	. .	9 51.11	46.43	1.00	IV.	2	8.12	9 7.09	18.64	4.81	10 38.54	15 30.54
105	8	. .	. .	3.	16.5	. .	. .	. .	12 16.52	46.44	1.00	IV.	1	4.16	2 9.09	18.71	4.31	13 3.96	8 32.11
106	8	. .	. .	. .	6.5	20.	. .	. .	19 6.54	46.48	1.00	V.	3	7.19	13 39.43	18.93	5.16	19 54.02	20 3.52
107	8	7.	21.	34.	. .	. .	. .	. .	22 47.76	46.49	1.00	III.	9	2.30	40 10.71	19.03	7.15	23 35.25	46 36.89
108	8	58.	11.5	25.	. .	. .	. .	. .	28 38.55	46.52	1.00	III.	5	8.13	24 4.86	19.18	5.94	29 26.07	30 29.98
109	8	. .	. .	21.	35.	. .	. .	. .	14 29 34.75	+46.53	+1.00	IV.	7	8.18	−33 8.51	−19.20	− 6.60	14 30 22.28	−22 39 34.31

ZONE 238. APRIL 20. B. BELT, −23° 46′. D₀=−23° 20′ 50″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	56.4	10.2	. .	10 24 56.49	− 3.12	−1.00	VI.	6	4.8	−26 2.30	− 3.37	− 6.08	10 24 52.37	−23 47 1.75
2	8	. .	. .	. .	. .	. .	. .	0.	25 19.08	3.12	1.00	VII.	5	10.11	25 4.06	3.40	6.01	25 14.96	46 3.47
3	8	. .	. .	. .	. .	. .	38.	51.3	27 10.54	3.13	0.99	VII.	2	11.35	10 49.12	3.46	4.91	27 6.42	31 47.49
4	9	. .	53.	6.3	20.	. .	. .	. .	29 20.11	3.13	1.00	IV.	5	12.52	26 25.57	3.55	6.11	29 15.98	23 47 25.23
5	10	. .	. .	18.5	32.2	. .	. .	. .	30 32.11	3.14	1.01	IV.	9	9.41	43 48.06	3.59	7.45	30 27.96	24 4 49.10
6	8	. .	. .	. .	29.	42.3	56.	. .	31 28.78	3.14	1.00	VI.	5	9.8	24 32.47	3.62	5.96	31 24.64	23 45 32.05
7	8	. .	. .	. .	. .	. .	35.3	49.1	10 32 8.08	− 3.14	−1.00	VII.	4	8.18	−19 7.88	− 3.65	− 5.55	10 32 3.94	−23 40 7.08

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(237) 73. Minutes assumed as 0 instead of 1.
(237) 102. Micrometer reading assumed as 0ʳ.57 instead of 10ʳ.57.
(238) 1. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

Zone 238. April 20. B. Belt, −23° 46′. D_0 = −23° 20′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
8	9	. .	. .	. .	. .	. .	46.	. .	10 33 18.69	− 3.14	−1.00	VI.	7	7.32	−32 45.17	− 3.69	− 6.61	10 33 14.55	−23 53 45.47
9	9	. .	. .	. .	. .	. .	. .	29.	33 48.09	3.14	1.00	VII.	5	8.57	24 26.75	3.71	5.95	33 43.95	23 45 26.41
10	8	. .	. .	. .	. .	26.	40.	. .	35 12.54	3.14	1.01	VI.	10	10.36	49 16.56	3.76	7.89	35 8.39	24 10 18.21
11	10	. .	. .	. .	. .	. .	48.3	. .	36 21.01	3.15	1.00	VI.	8	4.28	36 11.08	3.80	6.87	36 16.86	23 57 11.75
12	10	. .	. .	. .	53.4	. .	. .	. .	37 53.41	3.15	1.00	IV.	6	5.42	26 49.85	3.85	6.14	37 49.26	47 49.84
13	10	. .	. .	17.4	. .	. .	. .	. .	39 31.06	3.15	1.00	III.	6	4.55	26 26.12	3.91	6.11	39 26.91	47 26.14
14	8	. .	. .	. .	. .	15.	29.	. .	40 1.50	3.15	1.00	VI.	5	9.6	24 31.47	3.93	5.96	39 57.35	45 31.36
15	11	. .	17.	31.	. .	. .	. .	. .	42 44.50	3.16	1.01	III.	8	6.45	37 20.29	4.03	6.95	42 40.33	58 21.27
16	8	. .	23.4	37.	. .	. .	. .	. .	44 50.69	3.16	0.99	III.	3	7.1	13 30.35	4.10	5.13	44 46.54	34 29.58
17	8	. .	. .	26.4	. .	. .	. .	. .	45 40.06	3.16	1.00	III.	7	10.41	34 20.59	4.13	6.72	45 35.90	55 21.44
18	7.8	. .	. .	. .	. .	. .	14.3	27.7	45 46.86	3.16	1.00	VII.	8	4.40	36 16.96	4.13	6.87	45 42.69	23 57 17.96
19	9	. .	. .	. .	31.5	45.	59.	. .	47 31.49	3.17	1.01	VI.	8	11.27	39 42.36	4.19	7.15	47 27.31	24 0 43.70
20	8	40.3	54.	7.4	. .	. .	. .	. .	51 21.20	3.17	1.00	III.	5	6.55	23 25.53	4.33	5.87	51 17.03	23 44 25.73
21	9	. .	34.	48.	1.5	. .	. .	. .	10 55 1.47	3.18	1.00	IV.	7	10.4	34 1.97	4.45	6.70	10 54 57.29	54 3.12
22	9	. .	. .	57.2	11.	. .	. .	. .	11 1 10.96	3.19	1.00	IV.	5	4.41	22 17.99	4.66	5.80	11 1 6.77	43 18.45
23	10	. .	. .	58.2	12.	. .	. .	. .	6 11.96	3.19	1.00	IV.	3	9.25	14 42.99	4.82	5.20	6 7.77	35 43.01
24	9	. .	10.	23.5	37.2	. .	. .	. .	7 37.25	3.19	1.00	IV.	4	9.18	19 38.46	4.86	5.58	7 33.06	40 38.90
25	9	. .	. .	. .	. .	. .	30.	45.	8 3.37	3.19	1.00	VII.	5	5.25	22 39.84	4.88	5.83	7 59.18	43 40.55
26	9	. .	. .	. .	3.3	. .	30.5	. .	10 3.21	3.20	0.99	IV.	3	5.13	12 35.92	4.94	5.05	9 59.02	33 35.91
27	6.7	. .	. .	. .	17.	30.7	44.	. .	11 16.90	3.20	0.99	VI.	2	10.43	10 23.08	4.98	4.87	11 12.71	31 22.93
28	8	4.5	18.3	32.	. .	. .	. .	. .	14 45.60	3.20	1.00	III.	8	4.24	36 9.19	5.08	6.87	14 41.40	57 11.14
29	10	. .	. .	. .	47.5	60.5	. .	. .	16 47.21	3.20	1.00	VI.	5	5.30	22 42.55	5.14	5.83	16 43.01	43 43.52
30	8	. .	. .	6.3	20.	. .	. .	. .	17 20.02	3.20	1.00	IV.	4	7.10	18 33.92	5.15	5.50	17 15.82	23 39 34.57
31	9	. .	. .	47.	0.7	. .	. .	. .	21 0.62	3.21	1.01	IV.	9	6.2	41 57.64	5.26	7.34	20 56.40	24 3 0.24
32	8	. .	. .	. .	. .	49.	2.7	. .	21 35.37	3.21	1.00	VI.	8	2.48	35 20.66	5.27	6.80	21 31.16	23 56 22.73
33	5.6	. .	. .	. .	. .	. .	. .	56.5	22 15.66	3.21	1.00	VII.	4	4.26½	17 11.15	5.29	5.40	22 11.45	38 11.84
34	8	. .	. .	10.3	24.	. .	. .	. .	24 24.01	3.21	1.00	IV.	4	3.17½	21 35.88	5.35	5.73	24 19.80	42 36.96
35	11	. .	. .	55.5	9.3	. .	. .	. .	26 9.20	3.21	1.00	IV.	7	7.34	32 46.33	5.40	6.61	26 4.99	53 48.34
36	10	. .	31.2	45.	. .	. .	. .	. .	27 58.59	3.21	1.00	III.	5	6.47	23 21.49	5.45	5.88	27 54.38	44 22.82
37	8	. .	52.5	6.2	. .	. .	. .	. .	29 19.84	3.21	1.00	III.	3	10.38	15 19.77	5.49	5.24	29 15.63	36 20.50
38	10	. .	. .	. .	37.2	51.	. .	. .	30 37.23	3.21	1.00	VI.	8	5.52	36 53.44	5.53	6.93	30 33.02	57 55.90
39	7.8	. .	. .	. .	. .	46.3	0.	13.7	31 32.68	3.21	1.00	VII.	7	5.31	31 43.97	5.55	6.53	31 28.47	52 46.05
40	10	. .	. .	31.	45.	. .	. .	. .	33 44.84	3.21	0.99	IV.	2	10.22	10 12.64	5.60	4.86	33 40.64	31 13.10
41	7.8	. .	. .	. .	. .	43.3	57.2	. .	34 29.73	3.21	0.99	VI.	3	4.17½	12 7.79	5.62	5.01	34 25.53	33 8.42
42	9	. .	. .	. .	52.3	6.	19.3	. .	35 52.19	3.22	1.00	VI.	7	10.47	34 23.50	5.66	6.73	35 47.97	23 55 25.89
43	9	. .	. .	. .	53.5	. .	. .	. .	37 53.31	3.22	1.01	IV.	10	11.6	49 31.83	5.71	7.93	37 49.08	24 10 35.47
44	7.8	. .	. .	. .	. .	54.	7.6	. .	38 40.33	3.22	1.01	VI.	9	4.28	41 10.08	5.73	7.27	38 36.10	24 2 13.08
45	9	36.3	51.1	4.	. .	. .	. .	. .	45 17.75	3.22	1.00	IV.	4	5.14	17 35.43	5.88	5.43	45 13.53	23 38 36.74
46	8	. .	. .	. .	. .	1.7	15.	. .	45 47.85	3.22	1.00	VI.	5	8.20	24 8.27	5.89	5.94	45 43.63	45 10.10
47	8	. .	. .	. .	. .	. .	. .	0.5	46 19.67	3.22	1.00	VII.	4	2.38	16 16.44	5.90	5.32	46 15.45	23 37 17.66
48	7	. .	. .	. .	. .	. .	25.	. .	47 57.73	3.22	1.01	VI.	9	2.41	40 16.13	5.94	7.20	47 53.50	24 1 19.27
49	8	. .	18.	31.5	45.	. .	. .	. .	49 58.81	3.22	1.00	IV.	6	9.59	28 59.44	5.97	6.31	49 54.59	23 50 1.72
50	8	. .	. .	. .	. .	. .	35.	. .	50 21.37	3.22	1.00	VI.	4	7.57	18 59.47	5.98	5.53	50 17.15	39 58.98
51	8	. .	26.	39.3	53.	. .	. .	. .	52 53.11	3.22	1.00	IV.	3	12.26	16 14.26	6.04	5.32	52 48.89	23 37 15.62
52	10	. .	. .	. .	. .	. .	40.	. .	12.57	3.22	0.99	VI.	3	6.55	13 27.21	. .	5.12		
53	10	. .	. .	22.	. .	. .	. .	. .	11 58 35.67	3.22	1.01	III.	9	3.85	40 31.10	6.16	7.27	11 58 31.44	24 1 34.53
54	8	. .	59.2	13.	. .	. .	. .	. .	12 0 26.59	3.22	1.00	III.	4	8.31	19 14.74	6.20	5.55	12 0 22.37	23 40 16.49
55	5.6	. .	. .	. .	. .	59.	12.	26.	0 45.02	3.22	1.00	VII.	7	6.48½	32 23.05	1.21	6.58	0 40.80	23 53 25.84
56	8	. .	. .	35.2	49.	. .	. .	. .	12 2 48.85	− 3.22	−1.01	IV.	10	4.35	−46 14.67	− 6.25	− 7.68	12 2 44.62	−24 7 18.60

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(238) 34. Hor. thread assumed as 5 instead of 4.
(238) 49. Transits over T.'s I–III assumed as recorded over T.'s II–IV.
(238) 50. Transits over T. V assumed as recorded over T. VI.
(238) 53. Micrometer reading assumed as $9^t\ 3^r\ 8^d$ instead of $9^t\ 3^r\ 85^d$.

Zone 238. April 20. B. Belt, −23° 46'. $D_0 = -23° 20' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
57	10	. .	47.2	0.5	. .	. .	. .	. .	12 5 14.34	− 3.22	−1.00	III.	4	7.34	−18 45.99	− 6.30	− 5.51	12 5 10.12	−23 39 47.80
58	8	. .	27.	40.3	54.2	. .	. .	. .	6 4.07	3.22	1.00	IV.	8	2.31	35 12.24	6.33	6.81	6 59.85	56 15.38
59	10	. .	. .	. .	47.4	. .	. .	. .	12 47.40	3.21	1.00	IV.	6	6.49	27 23.64	6.45	6.19	12 43.19	23 48 26.28
60	10	. .	. .	7.2	20.5	34.	. .	. .	20.56	3.21	1.00	V.	7	3.22	30 39.21	6.48	6.45	14 16.35	23 51 42.14
61	8	. .	. .	. .	. .	30.	. .	. .	15 16.33	3.21	1.01	V.	9	4.31	41 11.71	6.49	7.29	15 12.11	24 2 15.49
62	6.7	. .	. .	. .	. .	. .	. .	18.	15 36.95	3.21	1.01	VII.	9	0.43	39 16.45	6.50	7.13	15 32.73	0 20.08
63	10	. .	. .	. .	. .	9.7	. .	. .	17 56.02	3.21	1.01	V.	10	1.50	44 51.42	6.54	7.57	17 51.80	24 5 55.53
64	8	. .	. .	. .	6.	19.7	. .	. .	19 5.98	3.21	1.00	V.	8	3.4	35 28.84	6.56	6.83	19 1.77	23 56 32.23
65	7.8	. .	. .	. .	. .	8.	21.5	. .	19 54.27	3.21	1.00	VI.	7	7.10	32 34.07	6.58	6.61	19 50.06	53 37.26
66	10	. .	. .	. .	. .	38.7	. .	. .	24 25.11	3.20	0.99	V.	2	9.5	9 33.77	6.65	4.80	24 20.92	30 35.22
67	8	. .	. .	13.	26.6	40.2	. .	. .	26 26.63	3.20	0.99	V.	1	12.41	6 23.68	6.68	4.55	26 22.44	27 24.91
68	11	. .	. .	35.	49.	. .	. .	. .	28 48.80	3.20	1.00	IV.	7	9.48	33 53.89	6.72	6.71	28 44.60	23 54 57.32
69	8	. .	. .	. .	. .	. .	. .	3.	29 21.92	3.20	1.01	VII.	9	7.38	42 45.71	6.73	7.41	29 17.71	24 3 49.85
70	7.8	. .	. .	. .	36.	49.2	. .	. .	33 35.66	3.19	1.01	V.	10	10.2	48 59.52	6.79	7.91	33 31.46	24 10 4.22
71	9	. .	. .	. .	. .	56.4	10.	. .	34 42.71	3.19	1.00	VI.	6	4.25	26 10.87	6.81	6.09	34 38.52	23 47 13.77
72	9	. .	. .	. .	. .	11.1	. .	. .	35 57.53	3.19	0.99	V.	2	3.12	6 35.77	6.82	4.57	35 53.35	27 37.16
73	8	. .	22.	35.5	49.	. .	. .	. .	37 49.18	3.19	1.00	IV.	5	3.20	21 37.14	6.85	5.73	37 44.99	23 42 39.72
74	8	. .	32.5	46.	. .	. .	. .	. .	39 59.75	3.19	1.01	II.	9	3.51	40 51.42	6.88	7.25	39 55.55	24 1 55.55
75	9	. .	. .	. .	. .	. .	54.	7.3	26.49	3.19	1.00	VII.	8	6.57	37 26.04	6.88	6.98	40 22.30	23 58 29.90
76	8	. .	. .	. .	. .	38.5	52.	. .	42 24.79	3.18	1.01	VI.	10	5.13	46 33.67	6.91	7.72	42 20.60	24 7 38.30
77	8	. .	. .	. .	3.	. .	. .	. .	44 2.96	3.18	1.00	IV.	7	6.14	32 5.99	6.92	6.57	43 58.78	23 53 9.48
78	9	. .	3.5	17.2	. .	. .	. .	. .	46 30.84	3.18	1.00	III.	5	9.31	24 44.18	6.95	5.98	46 26.66	23 45 47.11
79	8	. .	. .	. .	13.5	27.2	. .	. .	47 13.41	3.18	1.01	V.	10	6.25	47 10.09	6.96	7.76	47 9.22	24 8 14.81
80	7.8	. .	. .	32.	45.4	. .	. .	. .	48 45.56	3.17	1.00	IV.	4	3.57	16 56.60	6.98	5.36	48 41.39	23 37 58.94
81	8	. .	. .	. .	. .	. .	33.5	47.	49 6.12	3.17	1.00	VII.	5	6.31	23 13.13	6.98	5.86	49 1.95	44 15.97
82	8	56.	9.3	23.1	. .	. .	. .	. .	53 36.75	3.17	1.00	III.	7	2.17	30 6.44	7.02	6.41	53 32.58	51 9.87
83	9	. .	29.	42.3	56.	. .	. .	. .	12 55 56.12	− 3.17	−1.00	IV.	5	3.00	−21 27.06	− 7.03	− 5.72	12 55 51.95	−23 42 29.81

Zone 239. May 2. B. Belt, −23° 46'. $D_0 = -23° 20' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	29.	42.	56.	9.5	14 55 28.68	+ 9.25	+1.00	V.	3	5.21	−12 39.91	− 6.69	− 5.01	14 55 38.93	−23 33 11.61
2	7	. .	. .	. .	16.3	30.	43.5	. .	57 16.27	9.26	1.00	VI.	3	2.3	12 0.48	6.75	4.97	57 26.53	32 32.20
3	7	. .	. .	. .	. .	35.	49.	2.5	14 58 21.54	9.26	1.00	VII.	3	12.15	16 8.38	6.79	5.29	14 58 31.80	23 36 40.46
4	9.10	. .	. .	. .	31.4	45.	. .	. .	15 0 31.28	9.27	1.00	V.	9	10.48	44 21.81	6.87	7.59	15 0 41.55	24 4 56.27
5	10	. .	. .	. .	59.6	13.	. .	. .	1 59.53	9.27	1.00	VI.	1	12.34	6 20.05	6.92	4.50	2 9.80	23 26 51.47
6	10	. .	. .	. .	. .	. .	19.	33.	2 51.83	9.27	1.00	VII.	9	8.50	43 22.02	6.95	7.49	3 2.10	24 3 56.46
7	9	. .	29.3	43.	56.5	. .	. .	. .	4 56.59	9.28	1.00	IV.	6	8.24	28 11.54	7.01	6.26	5 6.87	23 48 44.81
8	9	. .	. .	. .	47.	0.5	. .	. .	5 46.89	9.28	1.00	V.	7	9.37	33 48.31	7.04	6.71	5 57.17	54 22.06
9	8	10.3	24.	37.5	. .	. .	. .	. .	7 51.18	9.29	1.00	III.	1	13.8	6 37.29	7.11	4.53	8 1.47	27 8.93
10	8	. .	. .	24.5	38.2	. .	. .	. .	9 38.22	9.30	1.00	IV.	4	12.9	21 4.69	7.17	5.68	9 48.52	41 37.54
11	7	. .	. .	. .	. .	25.	39.	. .	10 11.49	9.30	1.00	VI.	4	14.22	22 11.59	7.19	5.77	10 21.79	42 44.55
12	6.7	. .	. .	. .	. .	. .	. .	23.	10 42.10	9.30	1.00	VII.	4	15.3	22 32.08	7.20	5.79	10 52.40	43 5.07
13	8	49.8	3.3	17.	. .	. .	. .	. .	14 30.64	9.31	1.00	III.	3	5.11	12 34.87	7.31	5.00	14 40.95	33 7.18
14	8	. .	. .	20.	33.7	47.3	. .	. .	15 33.67	9.32	1.00	V.	6	10.38	29 19.07	7.35	6.35	15 43.99	49 52.77
15	9	8.7	22.5	36.	. .	. .	. .	. .	17 49.68	9.33	1.00	III.	3	12.32	16 17.25	7.41	5.29	18 0.01	36 49.95
16	9	. .	. .	. .	42.4	56.	. .	. .	18 42.36	9.33	1.00	V.	6	14.31	31 16.54	7.44	6.51	18 52.69	51 50.49
17	8	. .	. .	55.	. .	22.4	. .	. .	20 8.70	9.34	1.00	V.	7	12.17	35 8.98	7.48	6.83	20 19.04	23 55 43.29
18	9.10	. .	. .	. .	. .	19.5	33.	. .	15 21 5.78	+ 9.34	+1.00	VI.	8	11.48	−39 52.95	− 7.51	− 7.22	15 21 16.12	−24 0 27.68

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(238) 58. Transits over T.'s II–IV assumed as 37^s, $50^s.3$, and $4^s.2$ instead of 27^s, $40^s.3$, and $54^s.2$, and minutes as 7 instead of 6.
(238) 60. Minutes assumed as 14.
(239) 2. Micrometer reading assumed as $4^r.30$ instead of $2^r.30$.

ZONE 239. MAY 2. B. BELT, −23° 46′. $D_{\circ}$=−23° 20′ 20″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	9	. .	. .	. .	. .	44.	. .	. .	15 22 30.36	+ 9.35	+1.00	V.	4	12.48	−21 24.31	− 7.54	−5.70	15 22 40.71	−23 41 57.55
20	8	. .	. .	. .	. .	47.3	0.5	. .	23 33.38	9.35	1.00	VI.	1	7.52	3 57.85	7.57	4.31	23 43.73	24 29.73
21	9	. .	. .	. .	. .	28.3	42.	. .	25 14.65	9.36	1.00	VI.	5	5.49	22 52.13	7.62	5.82	25 25.01	43 25.57
22	7.8	. .	. .	. .	. .	. .	. .	40.8	26 59.95	9.37	1.00	VII.	4	6.35	18 15.95	7.66	5.45	27 10.32	38 49.06
23	8	. .	. .	. .	36.5	. .	. .	. .	27 36.55	9.37	1.00	IV.	3	5.50	12 54.58	7.67	5.02	27 46.92	37 27.27
24	9	. .	. .	. .	. .	. .	24.3	38.	28 57.01	9.38	1.00	VII.	6	8.30	28 14.24	7.71	6.26	28 7.39	23 48 48.21
25	8	. .	. .	. .	. .	31.3	45.	. .	29 17.69	9.38	1.00	VI.	10	9.50	48 53.35	7.72	7.96	29 28.07	24 9 29.03
26	8	. .	44.	57.5	. .	. .	. .	. .	32 11.24	9.39	1.00	III.	7	10.6	34 2.94	7.73	6.73	32 21.63	23 54 37.45
27	8	. .	. .	. .	54.2	8.	. .	. .	32 54.27	9.39	1.00	V.	6	8.19	28 8.98	7.80	6.25	33 4.66	48 43.03
28	8	. .	. .	. .	55.4	9.	22.5	. .	33 55.31	9.39	1.00	VI.	6	4.40	26 18.44	7.82	6.10	34 5.70	46 52.36
29	8	. .	. .	. .	13.	26.6	40.2	. .	35 12.93	9.40	1.00	VI.	7	10.44	34 21.99	7.84	6.77	35 23.33	23 54 56.60
30	8	. .	. .	34.5	48.2	. .	. .	. .	36 48.11	9.41	1.00	IV.	9	10.57	44 26.39	7.88	7.60	36 58.52	24 5 1.87
31	9	. .	. .	. .	. .	. .	. .	59.3	37 18.49	9.41	1.00	VII.	3	7.12	13 35.60	7.89	5.08	37 28.90	23 34 8.57
32	7	. .	. .	9.3	23.	. .	. .	. .	39 22.98	9.42	1.00	IV.	1	2.51	1 26.22	7.93	4.10	39 33.40	21 58.25
33	8	59.	12.5	. .	. .	. .	. .	. .	41 39.82	9.43	1.00	II.	3	4.5	12 1.49	7.97	4.95	41 50.25	32 34.41
34	7	9.4	23.	37.	50.	. .	. .	. .	44 50.31	9.44	1.00	IV.	3	2.4	11 0.63	8.02	4.87	45 0.75	31 33.52
35	9	. .	. .	51.6	5.2	19.	. .	. .	46 5.25	9.45	1.00	V.	7	8.1	32 59.90	8.04	6.65	46 15.70	53 34.59
36	9.10	. .	. .	16.2	30.	. .	. .	. .	47 29.90	9.46	1.00	IV.	7	8.9	33 3.98	8.07	6.66	47 40.36	53 38.71
37	9.10	. .	. .	. .	. .	44.5	. .	. .	48 30.83	9.47	1.00	V.	8	7.6	37 30.87	8.09	7.02	48 41.30	23 58 5.98
38	9.10	. .	. .	. .	49.5	. .	. .	. .	49 49.38	9.48	1.00	IV.	9	4.58	41 25.36	8.11	7.34	49 59.86	24 2 0.81
39	8.9	. .	. .	. .	. .	. .	52.2	6.	50 24.96	9.48	1.00	VII.	6	2.22	25 8.67	8.12	6.01	50 35.44	23 45 42.80
40	8	. .	. .	. .	59.8	13.2	. .	. .	51 59.67	9.49	1.00	V.	7	1.37	29 46.27	8.14	6.39	52 10.16	50 20.80
41	9	. .	. .	. .	33.4	. .	. .	. .	53 33.39	9.49	1.00	IV.	6	9.21	28 40.27	8.16	6.30	53 43.88	49 14.73
42	8	. .	. .	. .	. .	. .	. .	30.	49.08	9.50	1.00	VII.	5	9.1	24 28.75	. .	5.96		
43	9	. .	. .	. .	2.	. .	. .	. .	56 2.06	9.51	1.00	IV.	4	4.0	16 58.12	8.20	5.35	56 12.57	37 31.67
44	7.8	. .	. .	. .	. .	. .	54.	7.8	56 26.76	9.51	1.00	VII.	6	7.41	27 49.52	8.21	6.22	56 37.27	48 23.95
45	9	. .	. .	. .	. .	. .	13.7	27.2	57 46.41	9.51	1.00	VII.	5	7.58	23 56.99	8.23	5.90	57 56.92	23 44 31.12
46	6.7	. .	. .	. .	. .	. .	. .	22.3	15 58 41.22	9.52	1.00	VII.	9	7.18	42 35.62	8.24	7.45	15 58 51.74	24 3 11.31
47	7	. .	. .	45.	58.8	12.4	. .	. .	16 0 58.66	9.53	1.00	V.	10	12.39	50 18.68	8.27	8.10	16 1 9.19	24 10 55.05
48	8	. .	33.5	47.2	1.	. .	. .	. .	3 0.90	9.54	1.00	IV.	2	12.5	11 4.57	8.30	4.87	3 11.44	23 31 37.74
49	9	. .	10.	23.7	37.5	. .	. .	. .	4 37.39	9.55	1.00	IV.	6	14.46	41 22.85	8.32	7.34	4 47.94	24 1 58.51
50	6	. .	. .	. .	. .	. .	. .	15.	33.93	9.55	1.00	VII.	8	14.41	41 19.99	. .	7.34		
51	8	. .	. .	2.	15.4	. .	. .	. .	7 15.50	9.56	1.00	IV.	7	9.10	33 34.73	8.35	6.70	7 26.06	23 54 9.78
52	9	. .	. .	23.	37.	. .	. .	. .	8 36.83	9.57	1.00	IV.	5	11.20	25 39.18	8.36	6.05	8 47.40	46 13.59
53	9	. .	25.5	39.2	. .	. .	. .	. .	10 52.85	9.58	1.00	III.	8	10.29	39 13.23	8.39	7.18	11 3.43	59 48.80
54	7	. .	. .	. .	. .	40.	54.	. .	11 26.51	9.58	1.00	VI.	6	7.14	27 36.09	8 39	6.21	11 37.09	23 48 10.69
55	8	. .	43.2	57.	. .	. .	. .	. .	16 16 10.60	+ 9.61	+1.00	IV.	10	4.42	−46 18.20	− 8.43	−7.77	16 16 21.21	−24 6 54.40
ZONE 240. MAY 11. K. BELT, −23° 46′. $D_{\circ}$=−23° 21′ 0″.																			
1	10	. .	34.3	. .	. .	. .	. .	. .	13 42 1.62	+18.94	+1.00	II.	3	8.10	−14 5.03	− 3.83	−5.22	13 42 21.56	−23 35 14.08
2	6.7	. .	. .	. .	45.5	. .	. .	. .	42 45.56	18.94	1.00	V.	4	3.46	16 51.02	3.88	5.41	43 5.50	38 0.31
3	9	. .	. .	. .	14.1	. .	. .	. .	44 14.02	18.94	1.00	.	8	4.20	36 7.20	3.96	6.82	44 33.96	57 17.98
4	9	. .	. .	41.8	. .	. .	. .	. .	46 55.46	18.94	1.00	.	8	2.47	35 20.31	4.14	6.76	47 15.40	56 31.21
5	8.7	41.4	55.0	8.8	. .	. .	. .	. .	48 22.36	18.94	1.00	.	4	8.53	19 25.86	4.23	5.60	48 42.30	40 35.69
6	9	. .	. .	. .	33.2	. .	. .	. .	50 33.24	18.95	1.00	.	2	11.18	10 40.87	4.36	4.97	50 53.19	31 50.20
7	10	. .	4.9	. .	. .	. .	. .	. .	53 32.22	18.95	1.00	II.	3	7.49	13 54.44	4.54	5.19	53 52.17	35 4.17
8	8	. .	. .	. .	42.7	56.2	. .	. .	13 53 42.59	+18.95	+1.00	.	7	11.36	−34 48.36	− 4.55	−6.73	13 54 2.54	−23 55 59.64

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(239) 44. Minutes assumed as 27 instead of 28.
(239) 49. Micrometer thread assumed as 8 instead of 6.

Zone 240. May 11. K. Belt, −23° 46′. $D_{\circ}=-23^{\circ}\ 21'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	8	. .	. .	. .	35.9	. .	3.4	. .	13 54 35.95	+18.95	+1.00	.	9	7.3	−42 28.39	− 4.61	− 7.28	13 54 55.90	−24 3 40.28
10	8	. .	. .	. .	. .	37.7	51.2	. .	13 57 23.98	18.95	1.00	VI.	9	2.15	40 3.02	4.78	7.11	13 57 43.93	24 1 14.91
11	9	54.4	. .	. .	. .	. .	. .	. .	14 0 35.39	18.95	1.00	III.	7	5.18	31 37.70	4.97	6.48	14 0 55.34	23 52 49.15
12	6	54.9	8.9	22.3	. .	. .	. .	. .	3 35.98	18.95	1.00	.	4	6.8	18 2.66	5.14	5.50	3 55.93	39 13.30
13	9	9.8	23.6	. .	. .	. .	. .	. .	8 50.85	18.96	1.00	II.	6	12.22	30 11.39	5.43	6.38	9 10.81	51 23.20
14	10	. .	. .	. .	38.2	. .	. .	. .	10 38.25	18.96	1.00	.	3	5.41	12 50.04	5.53	5.12	10 58.21	34 0.69
15	8	. .	17.5	31.2	. .	. .	. .	. .	11 44.84	18.96	1.00	.	6	7.22	27 40.27	5.59	6.19	12 4.80	48 52.05
16	9	. .	. .	. .	. .	17.0	. .	. .	12 3.34	18.96	1.00	.	7	11.23	34 41.79	5.61	6.70	12 23.30	23 55 54.10
17	5	. .	. .	41.9	. .	9.2	. .	. .	15 55.54	18.97	1.00	.	10	4.22	46 8.11	5.82	7.56	16 15.51	24 7 21.49
18	9	. .	. .	. .	. .	48.2	. .	. .	16 34.54	18.97	1.00	.	7	7.35	32 46.83	5.86	6.57	16 54.51	23 53 59.26
19	9	. .	. .	. .	. .	40.1	53.2	. .	17 26.13	18.97	1.00	.	2	11.25	10 44.40	5.90	4.97	17 46.10	31 55.27
20	9	. .	30.2	44.2	. .	. .	. .	. .	21 57.69	18.97	1.00	.	7	9.51	33 55.40	6.15	6.64	22 17.66	55 8.19
21	8	. .	24.8	38.2	. .	. .	. .	. .	22 51.99	18.97	1.00	.	7	6.27	32 12.54	6.19	6.52	23 11.96	53 25.25
22	9	. .	. .	27.7	. .	. .	. .	. .	23 41.35	18.97	1.00	.	2	10.7	10 5.08	6.24	4.93	24 1.32	31 16.25
23	8	. .	. .	. .	. .	11.2	24.9	. .	23 57.55	18.97	1.00	.	5	8.50	24 23.55	6.25	5.96	24 17.52	45 35.76
24	9	. .	. .	. .	. .	6.1	. .	. .	24 52.46	18.98	1.00	.	4	9.16	19 37.46	6.30	5.61	25 12.44	40 49.37
25	9	. .	7.9	21.0	. .	. .	. .	. .	26 34.94	18.98	1.00	.	4	9.27	19 43.00	6.40	5.62	26 54.92	40 55.02
26	9	. .	. .	. .	7.8	. .	. .	. .	27 7.74	18.98	1.00	.	7	10.41	34 20.62	6.42	6.69	27 27.72	55 33.73
27	10	. .	. .	. .	. .	0.2	. .	. .	27 46.55	18.98	1.00	.	6	7.45	27 51.87	6.46	6.20	28 6.53	49 4.53
28	9	. .	. .	52.8	. .	. .	. .	. .	31 6.45	18.98	1.00	.	1	11.51	5 58.51	6.64	4.63	31 26.43	27 9.78
29	7.8	. .	. .	40.9	. .	8.2	. .	. .	31 54.60	18.98	1.00	.	1	6.44	3 23.72	6.68	4.45	32 14.58	24 34.85
30	8	. .	. .	42.6	56.4	. .	. .	. .	33 56.32	18.99	1.00	.	6	11.8	29 34.23	6.79	6.34	34 16.31	50 47.36
31	9	. .	. .	. .	32.5	. .	. .	. .	34 32.50	18.99	1.00	.	6	7.39	27 48.85	6.82	6.20	34 52.49	49 1.87
32	9	. .	. .	. .	. .	9.2	. .	. .	34 55.64	18.99	1.00	.	1	10.13	5 9.10	6.84	4.57	35 15.63	26 20.51
33	7	. .	. .	. .	. .	. .	. .	1.0	35 29.25	18.99	1.00	.	2	6.25	8 13.13	6.88	4.78	35 49.24	29 24.79
34	9	. .	. .	. .	26.3	. .	. .	. .	38 26.32	19.00	1.00	.	1	8.55	4 29.77	7.03	4.52	38 46.32	25 41.32
35	4	. .	51.9	5.2	. .	. .	. .	. .	40 19.04	19.00	1.00	.	3	12.18	16 10.22	7.14	5.36	40 39.04	37 22.72
36	8	. .	50.9	4.9	. .	. .	. .	. .	41 18.39	19.00	1.00	.	6	5.51	26 54.38	7.19	6.13	41 38.39	48 7.70
37	8	. .	23.4	36.8	. .	. .	. .	. .	42 50.59	19.00	1.00	.	4	7.8	18 32.91	7.26	5.53	43 10.59	39 45.70
38	7.8	. .	. .	24.3	37.8	. .	. .	. .	43 37.89	19.00	1.00	.	2	7.9	8 35.32	7.30	4.82	43 57.89	23 29 47.44
39	9	22.4	. .	. .	. .	. .	. .	. .	45 3.46	19.01	1.00	.	9	4.5	40 58.64	7.37	7.18	45 23.47	24 2 13.19
40	4	. .	. .	4.2	17.8	31.2	. .	. .	45 17.70	19.01	1.00	.	9	2.41	40 16.28	7.38	7.13	45 37.71	24 1 30.79
41	9	. .	19.9	33.6	. .	. .	. .	. .	46 47.24	19.01	1.00	.	4	7.39	18 48.55	7.46	5.55	47 7.25	23 40 1.56
42	8	. .	. .	16.9	30.7	. .	. .	. .	47 31.66	19.01	1.00	.	4	5.11	17 33.91	7.50	4.46	47 51.67	38 46.87
43	9	30.4	. .	. .	. .	. .	. .	. .	51 11.33	19.02	1.00	.	5	7.28	23 42.19	7.67	5.90	51 31.35	44 55.76
44	10	. .	. .	. .	13.9	. .	. .	. .	52 13.90	19.02	1.00	V.	6	6.12	27 4.94	7.72	6.15	52 33.92	48 18.81
45	9	. .	. .	35.0	. .	. .	. .	. .	53 48.65	19.02	1.00	.	1	5.25	3 14.13	7.79	4.43	54 8.67	24 26.35
46	9	. .	. .	5.1	. .	. .	. .	. .	55 18.75	19.03	1.00	.	3	3.59	11 58.61	7.86	5.06	55 38.78	33 11.53
47	7	25.3	39.0	52.8	. .	. .	. .	. .	57 6.30	19.03	1.00	.	2	12.30	11 17.18	7.95	5.01	57 26.33	32 30.14
48	7.8	30.8	44.4	. .	. .	. .	. .	. .	14 58 11.69	+19.03	+1.00	.	3	10.53	−15 27.37	− 8.00	− 5.31	14 58 31.72	−23 36 40.68

Zone 241. May 19. K. Belt, −29° 23′. $D_{\circ}=-28^{\circ}\ 57'\ 50''$.

1	10	. .	. .	38.1	. .	. .	. .	. .	12 5 52.45	+31.82	+1.00	.	5	6.23	−23 9.42	− 0.29	− 5.80	12 6 25.27	−29 21 5.51
2	10	. .	. .	. .	. .	. .	50.2	. .	6 21.49	31.82	1.00	.	6	10.45	29 22.64	0.35	6.50	6 54.31	27 19.49
3	9.10	44.4	58.8	12.9	. .	. .	. .	. .	10 27.32	31.81	1.01	III.	2	9.9	9 35.78	0.88	4.26	11 0.14	7 30.92
4	10	28.9	43.4	. .	. .	. .	. .	. .	12 12.07	31.80	1.00	II.	8	8.53	38 24.67	1.10	7.55	12 44.87	36 23.32
5	9	. .	. .	. .	26.3	. .	. .	. .	12 12 26.13	+31.80	+0.99	.	10	5.30	−46 42.40	− 1.13	− 8.53	12 12 58.92	−29 44 42.06

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(240) 45. Micrometer reading assumed as $6^{r}.25$ instead of $5^{r}.25$.

ZONE 241. MAY 19. K. BELT, −29° 23′. D_0=−28° 57′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
6	9	. .	. .	53.1	. .	. .	. .	. .	12 13 7.47	+31.80	+0.99	.	9	4.25	−41 8.72	− 1.21	− 7.87	12 13 40.26	−29 39 7.80
7	10	50.9	. .	. .	. .	. .	. .	. .	14 33.98	31.80	1.00	II.	7	6.49	32 23.45	1.40	6.86	15 6.78	30 21.71
8	7	. .	55.4	. .	. .	. .	. .	. .	15 24.11	31.79	1.00	II.	7	6.18	32 7.81	1.51	6.82	15 56.90	30 6.15
9	10	. .	. .	. .	38.5	. .	. .	. .	15 38.37	31.79	0.99	.	9	6.43	42 18.31	1.54	8.02	16 11.15	40 17.87
10	10	. .	. .	. .	. .	28.6	. .	. .	16 14.27	31.79	1.00	.	6	4.24	26 10.52	1.61	6.14	16 47.06	24 8.27
11	9	. .	. .	. .	. .	15.8	30.1	. .	17 1.40	31.79	1.01	VI.	3	7.20	13 39.77	1.71	4.71	17 34.20	11 36.19
12	9	20.9	35.2	. .	. .	. .	. .	. .	19 3.85	31.79	1.00	II.	4	4.28	17 12.04	1.97	5.12	19 36.64	15 9.13
13	10	. .	9.2	. .	. .	. .	. .	. .	21 37.93	31.78	0.99	II.	9	10.22	44 8.55	2.29	8.23	22 10.70	42 9.07
14	9	. .	. .	. .	44.3	. .	. .	. .	21 44.14	31.78	0.99	.	9	12.47	45 21.85	2.30	8.39	22 16.91	43 22.54
15	7	39.5	53.8	. .	. .	. .	. .	. .	24 22.44	31.77	1.00	.	3	9.55	14 58.12	2.64	4.86	24 55.21	12 55.62
16	10	. .	30.4	44.6	. .	. .	. .	. .	?27 59.03	31.77	1.00	.	7	3.46	30 51.36	3.09	6.68	27 31.80	28 51.13
17	9	. .	. .	. .	. .	20.1	34.4	. .	27 5.71	31.77	1.00	.	4	4.53	17 24.84	2.98	5.12	27 38.48	15 22.94
18	11	. .	. .	58.9	. .	. .	. .	. .	30 13.25	31.76	1.00	.	4	8.20	19 9.22	3.36	5.33	30 46.01	17 7.91
19	5.6	. .	. .	. .	32.6	47.2	1.3	. .	30 32.65	31.76	0.99	.	8	7.37	37 46.54	3.40	7.51	31 5.40	35 47.45
20	10	. .	. .	. .	. .	59.3	. .	. .	31 45.04	31.76	1.01	.	2	5.4	7 32.29	3.56	4.01	32 17.81	5 29.86
21	11	. .	44.4	. .	. .	. .	. .	. .	34 13.08	31.75	1.00	.	3	10.28	15 14.76	3.86	4.87	34 45.83	13 13.49
22	10	. .	. .	18.8	. .	. .	. .	. .	34 33.16	31.75	1.00	.	6	6.57	27 27.67	3.90	6.30	35 5.91	25 27.87
23	10	. .	. .	. .	. .	54.0	. .	. .	34 39.66	31.75	1.00	.	6	6.42	27 21.11	3.92	6.28	35 12.41	25 21.31
24	10	. .	17.9	. .	. .	. .	. .	. .	38 46.59	31.74	1.00	.	5	10.48	25 23.05	4.43	6.05	39 19.33	23 23.53
25	6.7	. .	. .	33.8	48.2	. .	. .	. .	41 48.10	31.74	0.99	.	10	7.11	47 33.32	4.83	8.64	42 20.83	45 36.79
26	10	. .	. .	. .	39.9	. .	. .	. .	42 39.78	31.73	0.99	.	9	4.42	41 17.30	4.94	7.91	43 12.50	39 20.15
27	8	. .	. .	25.0	39.5	. .	. .	. .	44 39.44	31.73	1.00	.	3	7.45	13 52.57	5.20	4.73	45 12.17	11 52.50
28	7	. .	. .	38.9	53.2	. .	. .	. .	46 53.25	31.73	1.00	.	4	4.33	17 14.76	5.50	5.09	47 25.98	15 15.35
29	7	. .	48.3	2.5	16.6	. .	. .	. .	50 16.82	31.72	1.00	.	3	6.24	13 11.73	5.94	4.63	50 49.54	11 12.30
30	10	. .	. .	. .	. .	. .	59.3	. .	50 30.59	31.72	1.00	.	6	11.51	29 55.91	5.97	6.57	51 3.31	27 58.45
31	10	. .	58.5	12.6	. .	. .	. .	. .	52 27.07	31.72	1.00	.	5	10.3	25 0.36	6.22	6.00	52 59.79	23 2.58
32	8	. .	35.9	50.3	. .	. .	. .	. .	54 4.63	31.71	1.00	.	7	9.36	33 47.85	6.44	7.03	54 37.34	31 51.32
33	10	. .	. .	30.7	. .	. .	. .	. .	54 45.02	31.71	1.01	.	1	10.0	5 2.55	6.52	3.72	55 17.74	3 2.79
34	10	39.3	. .	. .	. .	. .	. .	. .	56 22.31	31.71	1.00	.	5	10.46	25 22.05	6.74	6.04	56 55.02	23 24.83
35	11	. .	. .	16.8	. .	. .	. .	. .	56 31.15	31.71	1.00	.	4	9.29	19 44.01	6.75	5.39	57 3.86	17 46.15
36	10	. .	. .	1.9	. .	. .	. .	. .	58 16.25	31.71	1.00	.	5	10.38	25 18.01	6.99	6.04	58 48.96	23 21.04
37	8	. .	. .	. .	. .	7.3	22.2	. .	12 58 53.23	31.70	0.99	.	8	11.36	39 47.06	7.03	7.74	12 59 25.92	37 51.83
38	10	57.2	11.6	. .	. .	. .	. .	. .	13 2 40.25	31.70	1.00	.	5	10.56	25 27.09	7.55	6.06	13 3 12.95	23 30.70
39	9	. .	11.8	. .	40.4	. .	. .	. .	3 40.43	31.70	1.00	.	7	6.27	32 12.54	7.68	6.84	4 13.13	30 17.06
40	9	33.1	47.6	. .	. .	. .	. .	. .	6 16.20	31.69	1.00	.	5	10.1	24 59.35	8.01	6.00	6 48.89	23 3.36
41	9	. .	. .	36.9	. .	. .	. .	. .	8 51.27	31.69	1.00	.	8	8.49	38 22.85	8.34	7.58	9 23.96	36 28.77
42	9	9.0	23.4	. .	. .	. .	. .	. .	10 52.10	31.69	1.00	.	7	10.50	34 25.16	8.60	7.10	11 24.79	32 30.86
43	10	. .	26.9	. .	. .	. .	. .	. .	12 55.60	31.68	1.00	.	6	8.7	28 2.97	8.86	6.36	13 28.28	26 8.19
44	10	. .	22.2	. .	. .	. .	. .	. .	13 50.90	31.68	1.00	.	6	5.15	26 36.23	8.97	6.19	14 23.58	24 41.39
45	9	. .	. .	4.9	19.4	. .	. .	. .	16 19.29	31.68	1.00	.	8	7.5	37 30.40	9.28	7.47	16 51.97	35 37.15
46	10	. .	. .	56.2	. .	. .	. .	. .	20 10.56	31.67	1.00	.	6	7.43	27 50.86	9.78	6.34	20 43.23	25 56.98
47	9	. .	. .	. .	. .	31.2	. .	. .	20 16.87	31.67	1.00	.	5	9.40	24 48.76	9.79	5.98	20 49.54	22 54.53
48	9	17.8	32.0	. .	. .	. .	. .	. .	25 0.67	31.67	1.00	.	2	11.56	11 0.04	10.37	4.38	25 33.34	9 4.79
49	10	. .	. .	22.8	. .	. .	. .	. .	28 37.15	31.66	1.00	.	4	11.40	20 50.07	10.82	5.52	29 9.81	18 56.41
50	8	. .	56.2	10.3	. .	. .	. .	. .	29 24.75	31.66	1.00	.	1	12.36	6 21.21	10.91	3.86	29 57.41	4 25.98
51	8	. .	. .	. .	3.6	17.7	. .	. .	30 3.46	31.66	1.00	.	7	6.58	32 28.17	11.00	6.88	30 36.12	30 36.05
52	9	32.2	. .	0.6	. .	. .	. .	. .	32 15.00	31.66	1.00	.	2	11.39	10 51.47	11.26	4.37	32 47.66	8 57.10
53	9	. .	. .	. .	39.3	. .	. .	. .	32 39.38	31.66	1.00	.	4	11.2	20 30.91	11.31	5.48	33 12.04	18 37.70
54	8	17.0	31.4	45.6	. .	. .	. .	. .	13 33 0.03	+31.66	+1.00	.	6	6.35	−27 16.58	−11.35	− 6.27	13 33 32.69	−29 25 24.20

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	*m*	*n*	*c*
1849. h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(241) 16. Minutes assumed as 26 instead of 27.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
Zone 241. May 19. K. Belt, −29° 23′. D_0=−28° 57′ 50″—Continued.																			
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
55	10	. .	. .	. .	26.8	. .	. .	. .	13 36 26.66	+31.66	+0.99	.	9	8.3	−42 58.65	−11.77	− 8.13	13 36 59.31	−29 41 8.55
56	9	. .	. .	. .	13.7	. .	. .	. .	37 13.50	31.66	0.99	.	10	12.10	45 3.19	11.86	8.36	37 46.15	43 13.41
57	10	. .	5.1	. .	. .	. .	. .	. .	41 33.81	31.66	1.00	.	7	7.19	32 38.76	12.37	6.90	42 6.47	30 48.03
58	8.7	. .	. .	. .	. .	53.9	7.9	. .	41 39.36	31.66	1.00	.	2	9.10	9 36.33	12.38	4.23	42 12.02	7 42.94
59	8	. .	. .	. .	. .	57.8	12.1	. .	42 43.43	31.66	1.00	.	8	6.25	37 10.23	12.52	7.43	43 16.09	35 20.18
60	9	. .	. .	. .	. .	. .	0.4	. .	43 31.76	31.65	1.00	.	10	3.45	45 49.45	12.59	8.46	44 4.41	44 0.50
61	8	. .	. .	. .	43.5	57.9	. .	. .	44 43.49	31.65	1.00	.	7	10.52	34 26.17	12.72	7.11	45 16.14	32 36.00
62	9	. .	27.2	41.6	. .	. .	. .	. .	46 55.90	31.65	1.00	.	2	11.25	10 44.40	12.96	4.34	47 28.55	8 51.70
63	5.6	. .	. .	48.7	. .	. .	. .	. .	49 3.02	31.65	1.01	.	1	4.49	2 25.73	13.20	3.41	49 35.68	0 32.34
64	9	. .	. .	35.8	. .	. .	. .	. .	49 50.15	31.65	1.00	.	6	6.36	27 17.09	13.28	6.28	50 22.80	25 26.65
65	8.9	. .	44.9	59.1	. .	. .	. .	. .	55 13.50	31.65	1.00	.	3	4.51	12 24.83	13.82	4.53	55 46.15	10 33.18
66	10	. .	. .	35.4	. .	. .	. .	. .	58 49.72	31.65	1.01	.	1	7.11	3 37.32	14.15	3.55	13 59 22.38	1 45.02
67	8	. .	18.9	33.2	. .	. .	. .	. .	13 59 47.57	+31.65	+1.00	.	5	9.55	−24 56.32	−14.25	− 5.99	14 0 20.22	−29 23 6.56
Zone 242. May 23. K. Belt, −23° 46′. D_0=−23° 21′ 10″.																			
1	9	. .	12.5	26.4	. .	. .	. .	. .	16 15 39.95	+39.89	+1.00	.	9	12.59	−45 27.90	− 7.68	− 7.62	16 16 20.84	−24 6 53.20
2	9	. .	. .	1.3	. .	. .	. .	. .	19 14.97	39.90	1.00	.	10	12.18	50 8.12	8.54	7.99	19 55.87	24 11 34.65
3	8	25.9	39.5	53.2	. .	. .	. .	. .	24 6.87	39.91	1.00	.	8	5.20	36 37.45	9.70	6.92	24 47.78	23 58 4.07
4	10	. .	. .	. .	33.6	. .	. .	. .	26 33.67	39.92	1.00	.	4	7.12	18 34.93	10.28	5.51	27 14.59	40 0.72
5	9	8.0	21.8	35.1	. .	. .	. .	. .	28 48.95	39.92	1.00	.	6	7.48	28 3.46	10.81	6.23	29 29.87	49 30.50
6	9	52.9	6.4	20.0	. .	. .	. .	. .	30 33.71	39.93	1.00	.	3	8.26	14 13.25	11.23	5.16	31 14.64	23 35 39.64
7	9	. .	13.2	26.7	. .	. .	. .	. .	31 40.45	39.94	1.00	.	9	11.35	44 45.55	11.50	7.56	32 21.39	24 6 14.61
8	5.6	. .	. .	. .	. .	3.8	. .	. .	31 50.11	39.94	1.00	.	10	9.37	48 46.95	11.52	7.88	32 31.05	24 10 16.35
9	10	. .	51.8	5.1	. .	. .	. .	. .	16 34 18.94	+39.95	+1.00	.	5	4.2	−21 58.33	−12.11	− 5.76	16 33 59.89	−23 43 26.20
Zone 243. June 18. B. Belt, −23° 8′. D_0=−22° 42′ 50″.																			
1	8.9	. .	17.	32.5	46.	. .	. .	. .	15 50 46.09	+19.96	+1.00	IV.	1	6.22	− 3 12.62	− 7.76	− 4.43	15 51 7.05	−22 46 14.81
2	9	. .	. .	. .	. .	54.4	8.	. .	51 40.81	19.96	1.00	V.	6	9.35	28 47.31	7.79	6.28	52 1.77	23 11 51.38
3	9	. .	. .	. .	17.	30.6	. .	. .	53 16.98	19.96	1.00	V.	7	6.47	32 22.60	7.83	6.53	53 37.94	15 26.96
4	9	. .	34.5	48.	2.	. .	. .	. .	55 1.74	19.96	1.00	IV.	8	5.36	36 45.53	7.87	6.85	55 22.70	19 50.25
5	8	. .	. .	. .	1.8	15.	. .	. .	56 1.58	19.96	1.00	V.	7	6.17	32 7.47	7.89	6.51	56 22.54	15 11.87
6	7	. .	. .	. .	. .	2.2	16.	. .	56 48.69	19.96	1.00	VI.	6	9.1	28 30.03	7.91	6.25	57 9.65	11 34 19
7	9	. .	. .	. .	. .	. .	. .	15.	57 34.22	19.96	1.00	VII.	7	4.16	31 6.17	7.93	6.44	57 55.18	14 10.54
8	7	. .	. .	12.	25.5	39.	. .	. .	15 59 25.48	19.96	1.00	V.	7	9.33	33 46.30	7.98	6.62	15 59 46.44	23 16 50.90
9	9	. .	. .	. .	. .	12.5	26.	. .	16 1 58.82	19.96	1.00	V.	1	10.45	5 25.21	8.03	4.59	16 2 19.78	22 48 27.83
10	10	. .	. .	. .	38.	51.3	. .	. .	3 37.91	19.96	1.00	V.	3	6.31	13 15.23	8.07	5.15	3 58.87	22 56 18.45
11	9	. .	. .	. .	. .	. .	9.3	23.	4 42.16	19.96	1.00	VII.	8	12.11	40 4.37	8.09	7.10	5 3.12	23 23 9.56
12	9	. .	. .	. .	1.	14.5	. .	. .	7 1.01	19.96	1.00	V.	1	7.39	3 51.42	8.14	4.48	7 21.97	22 46 54.04
13	8	. .	43.	56.3	10.	. .	. .	. .	9 10.03	19.96	1.00	IV.	3	1.53	10 55.07	8.19	4.98	9 30.99	22 53 58.24
14	8	. .	. .	. .	59.	12.3	26.	. .	11 58.82	19.96	1.00	VI.	8	7.5	37 30.24	8.25	6.91	12 19.78	23 20 35.40
15	8	. .	. .	. .	33.	46.7	. .	. .	13 33.12	19.96	1.00	V.	1	5.9	2 35.78	8.28	4.38	13 54.08	22 45 38.44
16	9	. .	. .	. .	53.	6.5	. .	. .	14 52.97	19.96	1.00	V.	6	3.3	25 29.63	8.31	6.03	15 13.93	23 8 33.97
17	8	. .	. .	50.	4.	. .	. .	. .	16 3.82	19.96	1.00	IV.	5	6.53	23 24.55	8.34	5.87	16 24.78	6 28.76
18	6	. .	. .	. .	. .	. .	. .	55.2	16 14.50	19.96	1.00	VII.	5	5.30	22 42.38	8.34	5.82	16 35.46	5 46.54
19	10	. .	24.	37.4	51.2	. .	. .	. .	16 31 51.15	+19.97	+1.00	IV.	4	7.1	−18 29.38	− 8.63	− 5.51	16 32 12.12	−23 1 33.52

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM. At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(241) 56. Hor. thread assumed as 9 instead of 10.
(242) 5. Micrometer reading assumed as 7r.68 instead of 7r.48.
(242) 9. Minutes assumed as 33 instead of 34.
(243) 1. Time for T. II assumed as 19s instead of 17s.

ZONE 243. JUNE 18. B. BELT, −23° 8′. D₀=−22° 42′ 50″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	9	. .	. .	14.	27.8	41.2	. .	. .	16 34 27.70	+19.98	+1.00	V.	2	4.45	− 7 22.88	− 8.66	− 4.71	16 34 48.68	−22 50 26.25
21	8	. .	. .	. .	46.5	0.2	13.8	27.	35?46.53	19.98	1.00	VII.	2	11.47	10 55.18	8.68	4.96	36 7.51	22 53 58.82
22	10	55.	8.3	22.	. .	. .	. .	. .	40 35.61	19.98	1.00	III.	6	7.51	27 54.86	8.74	6.20	40 56.59	23 10 59.80
23	8	. .	59.	12.4	26.	. .	. .	. .	45 26.05	19.99	1.00	IV.	7	7.17	32 37.75	8.78	6.55	45 47.04	23 15 43.08
24	8	44.	57.3	11.	24.4	. .	. .	. .	47 24.53	19.99	1.00	IV.	3	2.43	11 20.29	8.80	4.99	47 45.52	22 54 24.08
25	11	. .	. .	. .	. .	25.	. .	. .	48 11.43	19.99	1.00	V.	5	3.9	21 31.57	8.80	5.73	48 32.42	23 4 36.10
26	10	. .	. .	. .	. .	40.	53.5	. .	49 26.40	19.99	1.00	VI.	10	6.40	47 17.54	8.81	7.65	49 47.39	30 24.00
27	9	. .	. .	59.	12.5	26.	. .	. .	51 12.48	19.99	1.00	V.	7	9.58	33 58.90	8.82	6.65	51 33.47	17 4.37
28	9	. .	. .	30.5	44.	. .	. .	. .	52 44.09	20.00	1.00	IV.	4	11.13	20 36.45	8.82	5.66	53 5.09	23 3 40.93
29	9	. .	. .	44.	57.5	11.	. .	. .	53 57.53	20.00	1.00	V.	3	5.32	12 45.48	8.82	5.08	54 18.53	22 55 49.38
30	9	. .	. .	. .	. .	16.	29.7	. .	55 2.45	20.00	1.00	VI.	6	6.33	27 15.42	8.83	6.16	55 23.45	23 10 20.41
31	11	. .	35.4	49.	2.6	. .	. .	. .	57 2.58	20.00	1.00	IV.	7	9.00	33 29.69	8.83	6.61	57 23.58	16 35.13
32	10	. .	5.	19.	32.3	. .	. .	. .	58 32.35	20.00	1.00	IV.	7	6.23	32 10.52	8.83	6.52	58 53.35	15 15.87
33	10	. .	. .	. .	. .	22.5	36.	. .	16 59 8.84	20.01	1.00	VI.	4	6.40	18 18.65	8.83	5.49	16 59 29.85	23 1 22.97
34	11	. .	. .	. .	50.	. .	. .	. .	17 2 50.06	20.01	1.00	IV.	3	10.40	15 20.82	8.83	5.28	17 3 11.07	22 58 24.93
35	11	. .	. .	. .	57.3	11.2	. .	. .	3 57.50	20.01	1.00	V.	4	9.27	19 42.96	8.83	5.60	4 18.51	23 2 47.39
36	11	. .	. .	. .	. .	19.4	33.	. .	10 5.77	20.02	1.00	VI.	2	3.14	6 36.67	8.84	4.63	10 26.79	22 49 40.14
37	10	. .	. .	. .	39.	52.2	. .	. .	11 38.86	20.02	1.00	V.	4	4.33	17 14.73	8.84	5.42	11 59.88	23 0 18.99
38	9.10	. .	. .	. .	. .	52.2	6.	. .	12 38.73	20.03	1.00	VI.	9	6.16½	42 4.79	8.84	7.27	12 59.76	23 25 10.90
39	8.9	. .	. .	. .	. .	. .	15.	28.4	13 47.75	20.03	1.00	VII.	2	6.59	8 29.95	8.84	4.75	14 8.78	22 51 33.54
40	10	55.	8.4	22.	35.8	. .	. .	. .	16 35.68	20.03	1.00	IV.	4	7.24	18 40.98	8.85	5.52	16 56.71	23 1 45.35
41	10	. .	57.	10.8	24.2	38.	. .	. .	17 19 24.28	+20.04	+1.00	V.	7	13.17	−35 39.24	− 8.85	− 6.80	17 19 45.32	−23 18 44.89

ZONE 244. JUNE 20. B. BELT, −21° 16′. D₀=−20° 51′ 0″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	. .	14.	27.5	. .	15 45 0.61	+24.44	+1.00	VI.	3	11.15	−15 38.33	−13.20	− 5.43	15 45 26.05	−21 6 56.96
2	9	. .	. .	. .	38.2	52.	4.8	. .	46 38.26	24.44	1.00	VI.	3	7.8	13 33.78	13.20	5.29	47 3.70	4 52.27
3	7	. .	. .	. .	0.	13.	. .	. .	?48 59.85	24.44	1.00	IV.	3	3.5	11 31.38	13.20	5.17	49 25.29	21 2 49.75
4	10	. .	. .	. .	. .	. .	. .	56.5	49 16.49	24.44	1.00	VII.	2	3.17	6 38.04	13.20	4.88	49 41.93	20 57 56.12
5	11	. .	. .	. .	. .	21.	34.2	. .	51 7.45	24.44	1.00	VI.	3	4.41	12 19.66	13.19	5.23	51 32.89	21 3 38.08
6	6.7	. .	. .	. .	. .	53.3	6.7	. .	52 39.90	24.44	1.00	VI.	9	5.45	41 48.93	13.19	7.05	53 5.34	33 9.17
7	10	. .	. .	37.	50.2	. .	. .	. .	54 50.26	24.44	1.00	IV.	8	9.48	38 52.59	13.18	6.87	55 15.70	30 12.64
8	8	. .	1.	14.4	. .	. .	. .	. .	56 27.83	24.44	1.00	III.	7	10.14	34 6.98	13.17	6.56	56 53.27	25 26.71
9	11	. .	. .	20.	. .	. .	. .	. .	57 33.42	24.44	1.00	III.	8	10.28	39 12.73	13.16	6.89	57 58.86	30 32.78
10	7	. .	. .	. .	. .	. .	. .	15.	57 34.72	24.44	1.00	VII.	7	13.46	35 53.58	13.16	6.68	15 58 0.16	27 13.42
11	11	. .	31.	44.5	. .	. .	. .	. .	15 59 57.88	24.44	1.00	III.	9	13.51	40 55.07	13.15	7.00	16 0 23.32	32 15.22
12	11	. .	. .	. .	24.	. .	. .	. .	16 1 24.04	24.44	1.00	IV.	5	7.21	23 38.66	13.14	5.91	1 49.48	21 14 57.71
13	11	. .	. .	. .	52.	. .	. .	. .	2 52.03	24.44	1.00	IV.	2	6.15½	8 8.34	13.12	4.96	3 17.47	20 59 26.42
14	10	. .	. .	52.4	. .	. .	. .	. .	4 5.83	24.44	1.00	III.	9	8.00	42 57.11	13.11	7.12	4 31.27	21 34 17.34
15	7	. .	. .	. .	. .	. .	53.	6.2	4 26.10	24.44	1.00	VII.	2	8.50	9 25.93	13.11	5.04	4 51.54	0 44.08
16	9	. .	. .	59.	12.3	. .	. .	. .	6 12.39	24.44	1.00	IV.	4	11.57	20 58.64	13.09	5.75	6 37.83	21 12 17.48
17	8	. .	16.5	30.	. .	. .	. .	. .	7 43.36	24.44	1.00	III.	1	8.24½	4 14.36	13.08	4.72	8 8.80	20 55 32.16
18	9	. .	. .	. .	29.3	. .	. .	. .	8 29.14	24.44	1.00	IV.	9	12.10	40 4.19	13.07	6.95	8 54.58	21 31 24.21
19	10	. .	. .	. .	22.2	. .	. .	. .	9 22.26	24.44	1.00	IV.	4	13.29	21 45.02	13.07	5.79	9 47.70	13 3.88
20	10	. .	. .	. .	13.	. .	. .	. .	10 13.04	24.45	1.00	IV.	2	11.15	10 39.36	13.06	5.12	10 38.49	1 57.54
21	9	. .	. .	. .	11.	. .	. .	. .	11 11.06	24.45	1.00	IV.	3	14.7	17 5.18	13.05	5.51	11 36.51	8 23.74
22	7.8	. .	. .	. .	. .	. .	. .	5.2	16 11 24.91	+24.45	+1.00	VII.	8	6.20	−37 7.39	−13.04	− 6.76	16 11 50.36	−21 28 27.19

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(244) 11. Hor. thread assumed as 8 instead of 9.
(244) 18. Hor. thread assumed as 8 instead of 9.

ZONE 244. JUNE 20. B. BELT, −21° 16′. D$_0$=−20° 51′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	10	. .	. .	. .	5.3	. .	. .	. .	16 13 51.90	+24.45	+1.00	IV.	6	4.32½	−26 14.81	−13.02	−6.07	16 13 17.35	−21 17 33.90
24	10	. .	. .	. .	. .	8.3	. .	. .	13 54.98	24.45	1.00	V.	1	8.35	4 19.66	13.01	4.73	14 20.43	20 55 37.40
25	10	. .	39.3	52.3	. .	. .	. .	. .	16 5.92	24.45	1.00	III.	6	9.52	28 55.88	12.99	6.23	16 31.37	21 20 15.10
26	9	. .	35.	48.2	. .	. .	. .	. .	20 1.72	24.45	1.00	III.	5	5.6	22 30.57	12.94	5.84	20 27.17	13 49.35
27	10	. .	. .	. .	. .	. .	55.	. .	20 28.08	24.45	1.00	VI.	3	10.45	15 23.21	12.93	5.40	20 53.53	6 41.54
28	4.5	9.	22.4	36.	49.3	. .	. .	. .	22 49.29	24.45	1.00	IV.	3	14.1	17 2.15	12.90	5.50	23 14.74	8 20.55
29	11	. .	. .	. .	15.2	. .	. .	. .	24 15.24	24.45	1.00	IV.	2	11.1	10 32.30	12.88	5.10	24 40.69	1 50.28
30	11	. .	42.8	56.	. .	. .	. .	. .	26 9.53	24.45	1.00	III.	9	6.10	42 1.64	12.84	7.08	26 34.98	33 21.56
31	11	. .	. .	25.	38.4	. .	. .	. .	31 38.40	24.46	1.00	IV.	7	3.58	30 57.40	12.77	6.36	32 3.86	22 16.53
32	10	. .	. .	29.	42.2	. .	. .	. .	33 42.33	24.46	1.00	IV.	3	3.26	11 41.97	12.73	5.17	34 7.79	2 59.87
33	10	. .	. .	. .	. .	7.2	20.5	. .	37 53.71	24.46	1.00	VI.	4	4.29	17 12.61	12.67	5.51	38 19.17	8 30.79
34	10	. .	. .	. .	. .	. .	. .	19.7	39 39.62	24.46	1.00	VII.	3	10.26	15 13.47	12.65	5.39	40 5.08	6 31.51
35	10	. .	42.2	55.6	. .	. .	. .	. .	42 9.03	24.47	1.00	III.	7	6.32	32 15.04	12.61	6.45	42 34.50	23 34.10
36	11	. .	. .	. .	. .	. .	. .	16.3	42 36.24	24.47	1.00	VII.	3	5.59	12 58.83	12.60	5.25	43 1.71	4 16.68
37	9	. .	. .	2.	15.4	. .	. .	. .	45 15.35	24.47	1.00	IV.	10	4.52	46 23.24	12.56	7.37	45 40.82	37 43.17
38	7.8	. .	. .	. .	11.	24.	. .	. .	46 10.80	24.47	1.00	V.	6	7.57	27 57.89	12.55	6.18	46 36.27	19 16.62
39	9	. .	. .	. .	22.5	36.	. .	. .	47 22.47	24.47	1.00	V.	9	5.50	41 51.55	12.53	7.07	47 47.94	33 11.15
40	9	. .	. .	. .	. .	. .	46.	. .	48 19.23	24.47	1.00	VI.	9	3.25	40 38.33	12.52	6.99	48 44.70	31 57.84
41	9	. .	. .	. .	55.	. .	. .	. .	49 55.03	24.47	1.00	IV.	5	9.17	24 37.16	12.49	5.98	50 20.50	15 55.63
42	8	. .	41.	54.5	. .	. .	. .	. .	51 7.87	24.47	1.00	III.	5	4.48	22 21.49	12.47	5.83	51 33.34	13 39.79
43	10	. .	53.	. .	20.3	. .	. .	. .	54 20.10	24.48	1.00	IV.	4	10.27	20 13.26	12.42	5.70	54 45.58	11 31.38
44	7.8	9.	22.	35.4	. .	. .	. .	. .	56 48.96	24.48	1.00	IV.	6	11.28	29 44.31	12.38	6.28	57 14.44	21 2.97
45	10	. .	. .	. .	. .	. .	. .	32.7	16 56 52.64	24.48	1.00	VII.	2	14.5	12 4.78	12.38	5.18	16 57 18.12	3 22.34
46	11	. .	. .	. .	24.3	. .	. .	. .	17 0 26.15	24.49	1.00	IV.	9	10.52	44 23.87	12.32	7.24	17 0 51.64	35 43.43
47	10	. .	29.	42.5	. .	. .	. .	. .	1 55.87	24.49	1.00	III.	4	8.56	19 27.35	12.30	5.66	2 21.36	10 45.31
48	9	. .	. .	27.	40.3	. .	. .	. .	2 40.29	24.49	1.00	IV.	9	11.14	44 34.96	12.28	7.26	3 6.78	35 54.50
49	7.8	. .	. .	. .	. .	29.	42.	. .	3 15.39	24.49	1.00	VI.	7	9.41	33 50.23	12.27	6.55	3 40.88	25 9.05
50	10	. .	. .	44.	57.3	. .	. .	. .	4 57.39	24.49	1.00	IV.	4	8.43½	19 21.07	12.25	5.64	5 22.88	10 38.93
51	9	. .	. .	. .	43.5	. .	. .	. .	5 43.57	24.49	1.00	IV.	4	10.17	20 8.22	12.23	5.70	6 9.06	11 26.15
52	9	. .	. .	. .	0.0	. .	. .	. .	7 59.85	24.50	1.00	IV.	10	10.37	49 17.21	12.19	7.57	8 25.35	40 36.97
53	10	. .	48.	. .	. .	. .	. .	. .	9 14.83	24.50	1.00	II.	7	9.59	33 59.31	12.17	6.57	9 40.33	21 25 18.05
54	5.6	55.2	8.3	22.	. .	. .	. .	. .	11 35.26	24.50	1.00	III.	1	11.7	5 36.30	12.13	4.78	12 0.76	20 56 53.21
55	11	. .	. .	. .	. .	. .	. .	38.5	11 58.25	24.50	1.00	VII.	7	7.25	32 41.49	12.12	6.48	12 23.75	21 24 0.09
56	9	. .	. .	58.3	11.5	. .	. .	. .	14 11.54	24.51	1.00	IV.	9	7.23	42 38.47	12.07	7.13	14 37.05	33 57.67
57	9	. .	. .	. .	. .	. .	. .	3.5	14 23.20	24.51	1.00	VII.	8	8.39	38 17.52	12.07	6.85	14 48.71	29 36.44
58	7	. .	. .	. .	. .	. .	. .	58.3	16 18.10	24.51	1.00	VII.	6	4.59½	26 28.13	12.03	6.09	15 43.61	17 46.25
59	8	. .	. .	5.	18.3	. .	. .	. .	17 18.33	24.51	1.00	IV.	7	. .	29	12.01	6.25	17 43.84	20
60	10	. .	12.3	25.5	. .	. .	. .	. .	21 39.02	24.52	1.00	III.	7	3.00	30 28.13	11.91	6.34	22 4.54	21 46.38
61	11	. .	. .	. .	. .	15.	. .	. .	22 1.59	24.52	1.00	V.	8	2.40	35 16.75	11.90	6.66	22 27.11	26 35.31
62	11	. .	. .	. .	. .	48.3	2.	. .	24 35.01	24.52	1.00	VI.	3	7.4	13 31.77	11.83	5.28	25 0.53	4 48.88
63	10	. .	. .	. .	. .	. .	. .	16.	25 35.92	24.53	1.00	VII.	3	10.25	15 12.96	11.80	5.38	26 1.45	6 30.14
64	9	. .	. .	. .	. .	. .	. .	5.3	26 25.22	24.53	1.00	VII.	3	9.18	14 39.46	11.78	5.35	26 50.75	5 56.59
65	9	. .	. .	5.	18.3	. .	. .	. .	28 18.39	24.53	1.00	IV.	4	6.22	18 9.72	11.73	5.56	28 43.92	9 27.01
66	5.6	. .	. .	47.4	0.6	14.	. .	. .	34 0.63	24.54	1.00	V.	9	11.52	44 54.09	11.57	7.29	34 26.17	36 12.95
67	11	. .	. .	. .	. .	22.8	. .	. .	35 9.39	24.54	1.00	V.	7	5.33	31 45.28	11.54	6.43	35 34.93	23 3.25
68	9	. .	. .	32.4	. .	. .	. .	. .	36 45.82	24.55	1.00	III.	9	3.2	40 26.84	11.49	7.00	37 11.37	31 45.33
69	10	. .	. .	. .	. .	. .	28.	. .	38 1.09	24.55	1.00	VI.	4	3.47	16 51.43	11.46	5.48	38 26.64	21 8 8.37
70	10	. .	. .	36.2	49.5	. .	. .	. .	41 49.56	24.56	1.00	IV.	1	7.30	3 46.91	11.35	4.66	42 15.12	20 55 2.92
71	9	. .	. .	. .	. .	39.	52.4	. .	17 42 25.55	+24.56	+1.00	VI.	2	9.9	− 9 35.70	−11.33	−5.03	17 42 51.11	−21 0 52.06

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

Date.		Barom.	THERMOM.	
			At.	Ex.
1849.	h. m.	in.	°	°

REMARKS.

(244) 23. Transit over T. V assumed as recorded over T. IV.
(244) 46. Transit over T. III assumed as 26^{s}.3 instead of 24^{s}.3. (See Mural Z., 1849, June 18, and Arg. 213, 71.)
(244) 58. Minutes assumed as 15 instead of 16.

ZONE 244. JUNE 20. B. BELT, −21° 16′. D₀=−20° 51′ 0″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	10	. .	. .	. .	. .	55.	8.5	. .	17 43 41.64	+24.56	+1.00	VI.	7	3.47	−30 51.73	−11.29	−6.37	17 44 7.20	−21 22 9.39
73	9	. .	. .	3.5	17.	. .	. .	. .	45 16.97	24.57	1.00	IV.	2	5.45	7 52.96	11.24	4.90	45 42.54	20 59 9.10
74	9	. .	41.	54.3	7.7	. .	. .	. .	17 50 7.76	+24.58	+1.00	IV.	2	10.45½	−10 24.49	−11.10	−5.06	17 50 33.34	−21 1 40.65

ZONE 245. JUNE 22. B. BELT, −21° 53′. D₀=−21° 28′ 30″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	59.5	12.5	. .	15 54 45.75	+28.89	+1.00	VI.	1	2.58	− 1 29.62	−11.10	−4.53	15 55 15.62	−21 30 15.25
2	10	. .	. .	. .	. .	. .	2.5	. .	56 35.63	28.88	1.00	VII.	9	6.44	42 18.52	11.12	7.11	57 5.51	22 11 6.75
3	10	. .	. .	. .	. .	. .	24.3	. .	57 57.22	28.88	1.00	VI.	2	10.37	10 20.08	11.14	5.08	58 27.10	21 39 6.30
4	10	. .	. .	. .	. .	. .	33.	. .	15 59 6.06	28.88	1.00	VI.	7	4.43	31 19.97	11.15	6.39	15 59 35.94	22 0 7.51
5	8.9	. .	. .	22.	35.3	. .	. .	. .	16 0 35.37	28.88	1.00	IV.	7	5.30	31 43.80	11.17	6.42	16 1 5.25	22 0 31.39
6	8	. .	. .	. .	. .	. .	25.	. .	0 57.97	28.88	1.00	VI.	4	3.16	16 35.80	11.17	5.47	1 27.85	21 45 22.44
7	9.10	. .	. .	. .	. .	. .	. .	8.4	1 28.11	28.88	1.00	VII.	4	8.27	19 12.45	11.17	5.64	1 57.99	21 47 59.26
8	9	. .	. .	. .	. .	. .	. .	9.2	2 28.71	28.88	1.00	VII.	9	2.38	40 14.47	11.18	6.96	2 58.59	22 9 2.61
9	9	. .	. .	. .	. .	1.5	15.	. .	3 48.06	28.88	1.00	VI.	8	5.57½	36 56.23	11.19	6.76	4 17.94	22 5 44.18
10	8.7	. .	3.	16.	29.7	. .	. .	. .	5 29.69	28.88	1.00	IV.	7	3.56	30 56.40	11.21	6.37	5 59.57	21 59 43.98
11	9	. .	58.4	11.5	. .	. .	. .	. .	8 25.15	28.88	1.00	III.	1	5.35	2 48.89	11.24	4.60	8 55.03	21 31 34.73
12	10	. .	. .	11.5	24.8	38.	. .	. .	11 24.72	28.88	1.00	V.	9	11.48	44 52.07	11.26	7.28	11 54.60	22 13 40.61
13	10	. .	. .	14.	27.3	. .	. .	. .	14 27.37	28.88	1.00	IV.	7	6.9	32 3.47	11.29	6.44	14 57.25	22 0 51.20
14	7.8	. .	. .	15.4	29.	. .	. .	. .	15 28.96	28.88	1.00	IV.	5	8.20	24 8.42	11.29	5.94	15 58.84	21 52 55.65
15	7.8	11.	24.5	. .	. .	. .	. .	. .	17 51.34	28.88	1.00	II.	4	4.53	17 24.70	11.31	5.52	18 21.22	46 11.53
16	8.9	. .	. .	51.5	5.	. .	. .	. .	26 4.99	28.88	1.00	IV.	1	9.27	4 45.90	11.36	4.73	25 34.87	33 31.99
17	8	. .	. .	59.4	13.	. .	. .	. .	28 12.96	28.88	1.00	IV.	3	11.47	15 54.60	11.37	5.43	28 42.84	44 41.40
18	10	. .	. .	. .	34.5	. .	. .	. .	29 34.56	28.88	1.00	IV.	3	11.14	15 37.96	11.38	5.41	30 4.44	21 44 24.75
19	7.8	. .	. .	35.7	49.1	. .	. .	. .	34 49.06	28.89	1.00	IV.	9	12.41½	45 19.07	11.40	7.31	35 18.95	22 14 7.78
20	10	. .	35.2	48.5	. .	. .	. .	. .	38 2.05	28.89	1.00	II.	5	9.57	24 57.20	11.41	6.00	38 31.94	21 53 44.61
21	11	. .	. .	. .	32.5	. .	. .	. .	38 32.54	28.89	1.00	IV.	5	9.17	24 37.16	11.41	5.97	39 2.43	53 24.54
22	8	. .	. .	55.	8.4	22.	. .	. .	40 8.50	28.89	1.00	V.	2	2.33	6 16.12	11.42	4.82	40 38.39	35 2.36
23	10	. .	. .	. .	25.	. .	. .	. .	41 25.00	28.89	1.00	IV.	6	7.24	27 41.28	11.42	6.17	41 54.89	21 56 28.87
24	10	. .	. .	19.7	33.1	. .	. .	. .	42 33.11	28.89	1.00	IV.	7	11.15	34 37.76	11.43	6.60	43 3.00	22 3 25.79
25	7.8	. .	45.	. .	. .	. .	. .	. .	45 11.94	28.89	1.00	II.	4	7.15	18 36.31	11.43	5.60	45 41.83	21 47 23.34
26	7.8	. .	. .	. .	. .	. .	38.	. .	45 10.91	28.89	1.00	VI.	2	7.55	8 58.38	11.43	4.98	45 40.80	37 44.79
27	9	. .	51.2	4.7	. .	. .	. .	. .	47 18.15	28.90	1.00	III.	1	8.59	4 31.76	11.43	4.70	47 48.05	33 17.89
28	8	. .	. .	. .	14.6	. .	. .	. .	48 14.62	28.90	1.00	IV.	1	6.31	3 17.16	11.44	4.62	48 44.52	32 3.22
29	10	. .	. .	. .	32.	. .	. .	. .	50 32.02	28.90	1.00	IV.	6	4.4	26 0.44	11.44	6.06	51 1.92	54 47.94
30	10	. .	. .	. .	. .	. .	. .	33.	50 52.65	28.90	1.00	VII.	6	2.41	25 18.28	11.44	6.02	51 22.55	54 5.74
31	8	21.	34.	47.3	1.	. .	. .	. .	16 56 1.04	28.90	1.00	IV.	5	5.39½	22 47.49	11.43	5.86	16 56 30.94	51 34.78
32	10	. .	. .	1.	14.	. .	. .	. .	17 1 14.26	28.91	1.00	IV.	5	8.43	24 20.02	11.43	5.95	17 1 44.17	53 7.40
33	10	. .	. .	. .	. .	. .	29.	. .	2 2.05	28.91	1.00	VI.	6	11.19	29 39.65	11.42	6.30	2 31.96	58 27.37
34	9	. .	28.5	41.7	. .	. .	. .	. .	6 55.30	28.92	1.00	III.	2	13.27	11 45.88	11.41	5.16	7 25.22	40 32.45
35	9	. .	. .	56.	9.3	. .	. .	. .	23 9.41	28.94	1.00	IV.	3	13.29	16 46.02	11.33	5.48	23 39.35	21 45 32.83
36	9	. .	. .	. .	. .	. .	29.5	43.	24 2.57	28.94	1.00	VII.	7	11.18	34 38.97	11.32	6.61	24 32.51	22 3 26.90
37	6.7	. .	. .	. .	. .	0.	13.5	. .	25 46.54	28.95	1.00	VI.	6	6.46	27 22.00	11.31	6.15	26 16.49	21 56 9.46
38	7	. .	47.	0.3	. .	. .	. .	. .	28 13.85	28.95	1.00	III.	4	10.22	20 10.71	11.29	5.69	29 43.80	48 57.69
39	6	. .	. .	43.	56.3	9.5	. .	. .	33 56.30	28.96	1.00	IV.	2	4.58	7 29.26	11.24	4.87	34 26.26	36 15.37
40	10	. .	. .	. .	. .	. .	17.	. .	34 49.92	28.96	1.00	VI.	2	11.28	10 45.78	11.24	5.08	35 19.88	39 32.10
41	10	. .	. .	. .	. .	. .	. .	22.7	35 42.49	28.96	1.00	VII.	2	9.10	9 36.03	11.23	5.00	36 12.45	38 22.26
42	8	. .	22.2	36.	49.2	. .	. .	. .	17 46 49.27	+28.99	+1.00	IV.	6	5.20	−26 38.75	−11.13	−6.10	17 47 19.26	−21 55 25.98

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.	Barom.	THERMOM.	
			At.	Ex.
	1849. h. m.	in.	°	°

REMARKS.

(245) 16. Minutes assumed as 26 instead of 25, to agree with Mural, 1849, and Argelander.
(245) 37. An error of 10^s in one of the transits, supposed in T. V. If T. VI be in error, T=$56^s.54$.
(245) 38. Minutes assumed as 29 instead of 28.

ZONE 245. JUNE 22. B. BELT, —21° 53′. D₀=—21° 28′ 30″—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
43	9	. .	. .	. .	. .	. .	38.	. .	17 48 11.14	+28.99	+1.00	VI.	9	9.25	—43 39.86	—11.12	—7.24	17 48 41.13	—22 12 28.22
44	8	26.	39.2	. .	. .	. .	. .	. .	52 6.30	29.00	1.00	II.	8	8.51	38 23.72	11.07	6.88	52 36.30	22 7 11.67
45	9	. .	. .	. .	. .	35.	. .	. .	52 50.03	29.00	1.00	V.	6	9.00	28 29.66	11.07	6.22	53 20.03	21 57 16.95
46	9	. .	. .	. .	. .	29.5	. .	. .	54 16.02	29.01	1.00	V.	9	12.28	45 12.23	11.04	7.34	54 46.03	22 14 0.61
47	9	. .	. .	. .	52.5	. .	. .	. .	55 52.54	29.01	1.00	IV.	2	12.57	11 30.79	11.02	5.12	56 22.55	21 40 16.93
48	9	. .	. .	. .	. .	. .	0.	. .	56 33.11	29.01	1.00	VI.	8	9.8	38 32.29	11.01	6.89	57 3.12	22 7 20.19
49	8	. .	. .	. .	. .	. .	. .	57.5	57 17.06	29.01	1.00	VII.	7	10.53	34 26.37	11.01	6.60	57 47.07	22 3 13.98
50	9	. .	. .	. .	. .	. .	. .	51.	58 10.67	29.02	1.00	VII.	5	7.7	23 31.31	10.99	5.90	58 40.69	21 52 18.20
51	9	. .	. .	. .	. .	. .	39.	52.	17 59 11.81	29.02	1.00	VII.	9	5.39	41 45.74	10.98	7.11	17 59 41.83	22 10 33.83
52	9	. .	. .	57.	11.	. .	. .	. .	18 1 10.65	29.02	1.00	IV.	10	5.59	46 57.02	10.95	7.47	18 1 40.67	22 15 45.44
53	10	. .	. .	29.7	43.	. .	. .	. .	3 43.11	29.03	1.00	IV.	4	3.27	16 41.47	10.91	5.46	4 13.14	21 45 27.84
54	6.7	. .	. .	. .	45.	58.2	. .	. .	4 44.92	29.03	1.00	V.	4	2.14	16 4.64	10.89	5.42	5 14.95	21 44 50.95
55	9	. .	. .	. .	. .	. .	1.6	15.	6 48.11	29.04	1.00	VII.	8	3.29	35 41.18	10.86	6.70	7 18.15	22 4 28.74
56	8	. .	. .	. .	21.	. .	. .	. .	9 21.03	29.04	1.00	IV.	2	4.2	7 1.03	10.81	4.82	9 51.07	21 35 46.66
57	8	. .	. .	. .	25.	. .	. .	. .	12 24.92	29.05	1.00	IV.	8	4.33	36 13.76	10.76	6.73	12 54.97	22 5 1.25
58	8	. .	. .	. .	4.	17.3	. .	. .	14 3.97	29.06	1.00	V.	3	10.35	15 18.27	10.73	5.37	14 34.03	21 44 4.37
59	10	. .	. .	. .	49.4	. .	. .	. .	15 49.48	29.06	1.00	IV.	4	10.10	20 4.69	10.70	5.68	16 19.54	48 51.07
60	10	. .	. .	. .	57.3	. .	. .	. .	17 57.38	29.07	1.00	IV.	4	9.59	19 59.14	10.66	5.67	18 27.45	48 45.47
61	10	. .	. .	. .	. .	. .	24.	. .	19 56.96	29.07	1.00	VI.	3	9.46	14 53.46	10.62	5.35	20 27.03	43 39.43
62	9	. .	. .	. .	. .	. .	31.	. .	21 4.00	29.08	1.00	VI.	5	4.14	22 4.25	10.60	5.80	21 34.08	21 50 50.65
63	9	. .	. .	59.	12.4	. .	. .	. .	23 12.39	29.08	1.00	IV.	9	2.59	45 26.26	10.56	7.36	23 42.47	22 14 14.17
64	11	. .	. .	. .	. .	4.	. .	. .	24 50.61	29.09	1.00	V.	3	1.58	10 57.56	10.52	5.08	25 20.70	21 39 43.16
65	9	. .	. .	. .	. .	. .	3.	. .	25 36.10	29.09	1.00	VI.	8	5.27	36 40.85	10.51	6.77	26 6.19	22 5 28.13
66	9	. .	31.	44.3	. .	. .	. .	. .	27 57.85	29.10	1.00	III.	2	6.18	8 9.57	10.46	3.88	28 27.95	21 36 53.91
67	6	. .	. .	. .	. .	38.5	. .	. .	28 25.15	29.10	1.00	V.	1	4.32	2 17.13	10.45	4.51	28 55.25	21 31 2.09
68	9	. .	. .	45.	58.7	. .	. .	. .	29 58.55	29.10	1.00	IV.	8	5.22	36 38.46	10.42	6.76	30 28.65	22 5 25.64
69	9	. .	. .	56.2	10.	. .	. .	. .	18 31 9.84	+29.11	+1.00	IV.	2	7.36	— 8 48.94	—10.40	—4.93	18 31 39.95	—21 37 34.27

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c
1849.	h.	s.	s.	s.	s.	s.

INSTRUMENT READINGS.

	Date.		Barom.	THERMOM.	
				At.	Ex.
	1849.	h. m.	in.	°	°

REMARKS.

(245) 45. Transit over T. III assumed as $53^m\ 3^s.5$ instead of $52^m\ 35^s$.
(245) 55. Transits over T.'s V and VI assumed as recorded over T.'s VI and VII.
(245) 63. Hor. thread assumed as 10 instead of 9.